Design and Access/Planning Statement

Application for the construction of an Anaerobic Digestion facility (part retrospective), comprising: 1 no. digester tank and 1 no. secondary digester/digestate storage tank, silage clamps; liquid and dry feed system; digestate separation, handling and pasteurization; biogas upgrading and mains gas-grid connection; carbon capture; CHP; agricultural building; office buildings; weighbridge; 2 no. covered digestate storage lagoons; and associated plant, vehicular accesses, roads and landscaping (including earth bunds)

Deal Farm, Kenninghall Road, Bressingham, IP22 2HG

On behalf of Deal Farm Biogas Ltd.

June 2022

CORNERSTONE
Planning
Limited

Design and Access Statement

1. Introduction

1.1 This Design and Access/Planning Statement has been prepared on behalf of Deal Farm Biogas Ltd. in support of an application (part retrospective) for planning permission for the construction of an Anaerobic Digestion facility (part retrospective), comprising: 1 no. digester tank and 1 no. secondary digester/digestate storage tank, silage clamps; liquid and dry feed system; digestate separation, handling and pasteurization; biogas upgrading and mains gas-grid connection; carbon capture; CHP; agricultural building; office buildings; weighbridge; 2 no. covered digestate storage lagoons; and associated plant, vehicular accesses, roads and landscaping (including earth bunds) on land at Deal Farm, Kenninghall Road, Bressingham.

1.2 The Statement has been prepared in accordance with the Town and Country Planning (Development Management Procedure) (England) (Amendment) Order 2015, and the Council's validation requirements. The purpose of this statement is to explain the background to the proposals, the design principles and concepts that have been applied to the development, together with an assessment of the planning policy context, and other matters relevant to the determination of the application, evaluating the proposed development against the Development Plan and other relevant material considerations. To this end, this Statement should be read in conjunction with the planning application and its supporting drawings/documents, and in particular the conjoined Planning Statement herein.

2. Background

2.1 The planning history of anaerobic digestion plants (and the granting of planning permissions thereto) on the site dates back to 2013. This can be summarised as follows:

- 2013: planning permission granted by Norfolk County Council for a Thermophilic Anaerobic Digestion plant (ref. C/7/2013/7006). The application was for an innovative hexagonal, partially underground, 500KW anaerobic digestion technology scheme but proved to be unfeasible in engineering/operational terms, not least because the proposed tanks were undersized, the thermophilic technology impractical and was therefore unable to secure investment;

- 2014: planning permission granted by South Norfolk Council for an Anaerobic Digestion Renewable Energy Facility (ref. 2013/1887). The application was for a more conventional above-ground tank solution; 500KW power output to process 12,500 tonnes of agricultural feedstock of approximately 1:2 farmyard manures/crops (maize/beet);

- 2015: planning permission granted by South Norfolk Council for the construction of a farm agricultural anaerobic digestion facility (ref. 2015/0595);

- 2021: S.73 application to South Norfolk Council to vary condition 2 of 2015/0595 to allow for revised plans/drawings and comparative landscape visualisations (ref. 2021/2036). Withdrawn on 11.11.2021.

- 2021: application (part retrospective) for planning permission for the construction of an Anaerobic Digestion facility (part retrospective), comprising: 1 no. digester tank and 1 no. secondary digester/digestate storage tank, silage clamps; liquid and dry feed system; digestate separation, handling and

pasteurization; biogas upgrading and mains gas-grid connection; carbon capture; CHP; agricultural building; office buildings; weighbridge; 3 no. covered digestate storage lagoons; and associated plant, vehicular accesses, roads and landscaping (including earth bunds) (ref.2021/2788). Withdrawn.

2.2 Planning permission was most recently granted by notice dated 22 October 2015 (ref. 2015/0595) for the construction of an anaerobic digestion plant. Pre-commencement conditions have all been discharged and the development commenced. However, further ground investigation work identified that ground conditions where the tanks were to be constructed were not adequate, and so it has been necessary to transpose the location of the tanks and the clamps. In addition, changes to legislation/Regulations, developments in technology, system enhancements and the need to address amendments to Environment Agency standards, have led to the proposed changes to the layout and plant configuration.

2.3 The applicants sought to regularise this through a S.73 application (ref. 2021/2036), to vary condition 2 of planning permission 2015/0595. This was subsequently withdrawn at the Council's request, and the subsequent application - part retrospective - made to include the works comprising that S.73, together with additional works both within the 2015 site and without (ref. 2021/2788). A revised site location (red line) plan included the main AD plant site and three 'satellite' (covered) digestate storage lagoons.

2.4 During the course of application ref. 2021/2788, there were various consultation responses, to which the applicant sought to respond in full and positively. However, there remained a number of issues to be addressed through further technical information, not least in relation to: transport; surface water flood risk/drainage, and Natural England. The applicant considered that rather than seek to address these incrementally, for clarity it would make for a less complex and more straightforward application if it were to withdraw application 2021/2788 and address all outstanding issues ahead of – and via – a new application, on which the Council could consult anew.

2.5 This (current) application therefore addresses and clarifies all issues raised previously by consultees, and proposes to – and is premised on – limiting feedstock throughput to a maximum of **23,950 tonnes/annum,** to reflect that approved under the previous permission (2015/0595); to have **2 no. lagoons** in lieu of 3 no. lagoons; and **remove** the proposal to have site access via Kenninghall Road (to remain only for the use of the farmer for farming activities). The application description remains unaltered – from 2021/2788 - save for reference to 2 no. lagoons in lieu of 3. The red line (site location) plan has been adjusted correspondingly.

2.6 The majority of the work on the AD plant site - the subject of this application - has already been implemented on site, some not. No work has been commenced in relation to the proposed storage lagoons or digestate pipelines.

2.7 In preparation for and during the consideration of the previous application (2021/2788), the applicant initiated consultation/liaison with the local community, together with statutory and other consultees, and the District Council, addressing the provisions of the Localism Act 2011 and South Norfolk Council's Statement of Community Involvement. This included:

- Review of the statutory consultee and public comments in relation to the S.73 application (ref. 2021/2036);
- Review of the statutory consultee and public comments in relation to the S.73A application (ref. 021/2788);

- Publication of a public information project website (www.dealfarmbiogas.co.uk);
- Site visits offered to and conducted with local Parish Councils (only Shelfanger Parish Council refused the invitation;
- Site visit by local Councillor James Easter;
- Site visit offered to (and refused by) local Member of Parliament Richard Bacon;
- Release of a public information pamphlet (a copy of which is submitted with this application);
- Provision of a contact telephone number for members of the public to call;
- Provision of a project email address for members of the public to contact the project team with questions;
- Participation on local BBC Radio discussion;
- Formal press responses to local interest articles (including repeated advertising of the project telephone number, email address and website).

3. Site and General Context

3.1 The site comprises a former muck/ straw storage area and existing arable land, and is divided into two main elements: the main anaerobic digestion plant site, and two smaller sites for digestate storage lagoons (some 385 metres to the north-east, and 640 metres to the south of the main site, respectively). Digestate will be pumped directly to the lagoons (and also to field connection points and tanker offtake points) from the AD Plant over the farmer's own land. The land is part of a larger farming business operated by RG Aves and Partners (approximately 335 hectares). The Farming Operation comprises:

- The Oaks (on Kenninghall Road: 350m from the AD site) – comprising a farmhouse (Farmer's residence) large chicken unit, beef-cattle unit, grain stores, straw stores and various farm buildings;
- Deal Farm (on Kenninghall Road, adjacent to the AD site) – comprising a large pig fattening unit, producing some 6,000 tonnes of liquid and solid pig manures and used bedding; straw storage; maize/wholecrop field clamps; muck pads & heaps; and beet pads;
- 335 hectares of arable land (owned by the Farm) – details submitted along with this application;
- 101 hectares of arable land (3rd party land – farmed and cropped);
- Straw Contracting (harvesting, baling and onward sale) – own straw (800 tonnes per annum); straw harvested and sold/swapped for muck (3,720 tonnes per annum).

3.2 The Oaks and Deal Farm have been farmed together by the Aves for over 70 years. The farm is a mixed use (livestock and arable) farm, which has traditionally consolidated crops, straw and operations at the Deal Farm and The Oaks sites before bulking materials (beet, straw, grain, etc.) for onward transport to places like Wissington, Bury St. Edmunds, and the grain mills at Kenninghall and Burston; all of which require transport out of the area via the local villages and out through the A1066 (see Figure 1).

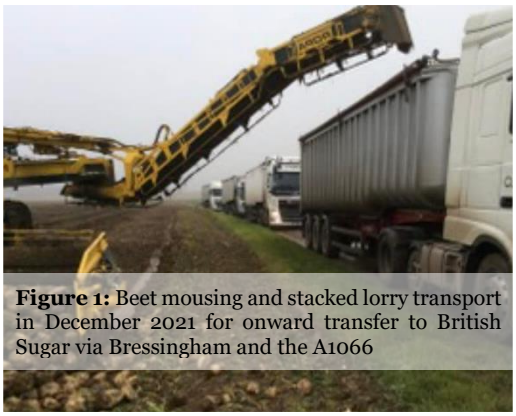


Figure 1: Beet mousing and stacked lorry transport in December 2021 for onward transfer to British Sugar via Bressingham and the A1066

3.3 The application site is 5.55 hectares in total. The AD plant part of the site comprises some 4.25 hectares, including a new access road leading to the site from Common Road (previously approved and constructed); together with two 'satellite' sites (approximately 0.7 hectares each) to contain the proposed, associated digestate storage lagoons – connected directly to the AD Plant by pipe and pumping arrangement. Figure 2 (also Appendix A) illustrates the locations of the component parts of the application.

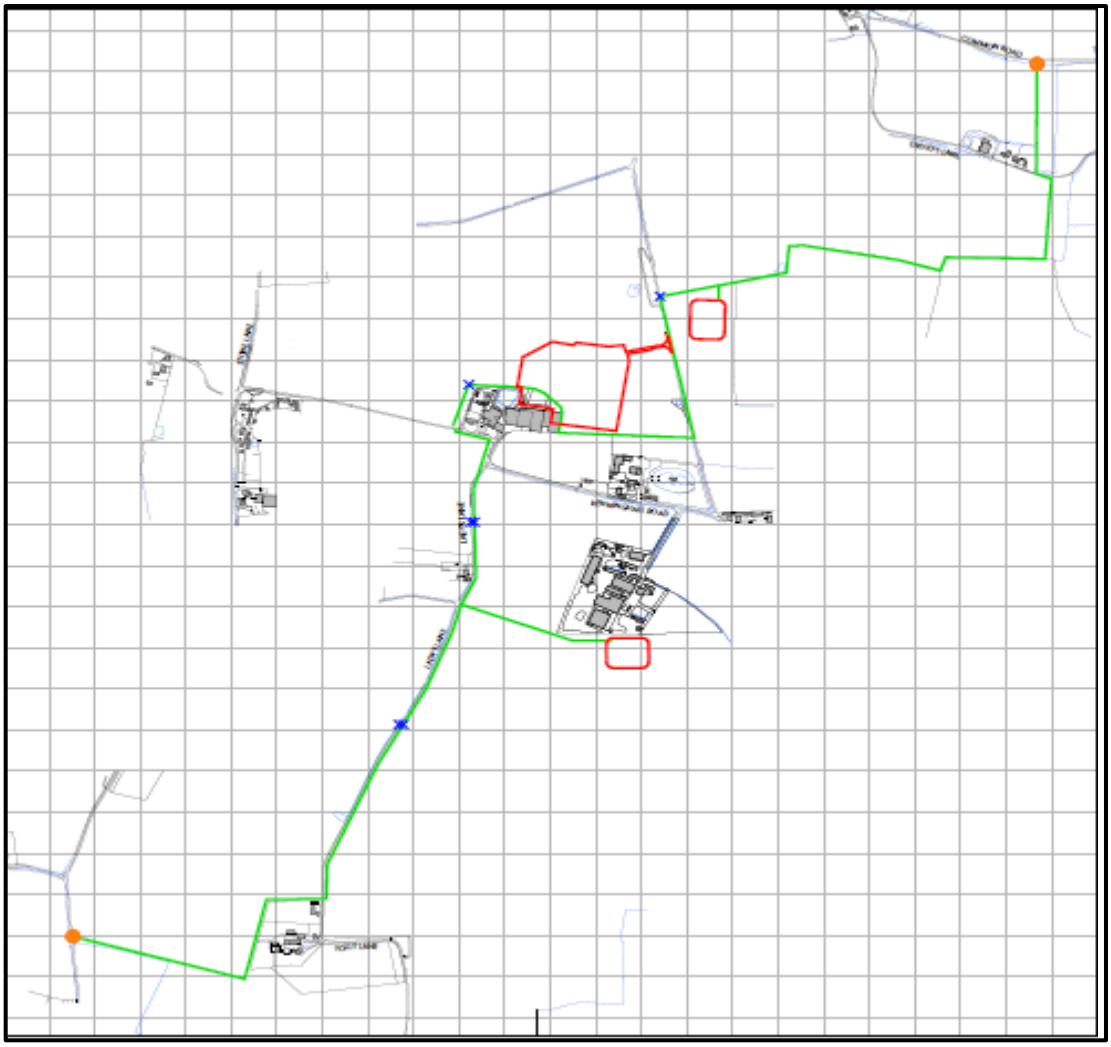


Figure 2: Site Location Plan

4. Proposed Development

AD Plant Site

4.1 The proposed development comprises the construction of a biomass fuelled anaerobic digestion facility. The facility and process will convert locally-sourced biomass (a mixture of maize, grass and cereals, together with straw, farm slurries and farmyard manures) to create biogas, which is then cleaned to gas network quality biomethane on site for injection directly into the local LTS Gas Grid, for local and national use. Furthermore, the plant will capture renewable Carbon Dioxide from the process (that under the 2015 permission would have been released to atmosphere) and liquefy it for use in food and drink, and cement industries. Finally, a pasteurised, odourless, organic biofertiliser (dry and liquid digestate fractions) will be produced from the anaerobic digestion process to replace imported chemical fertilisers.

4.2 It is estimated that the plant will process the following feedstock - 'waste' and 'non-waste' – annually, although it is important to note that inherent flexibility (+/- 20%) is required as such reflects variations in availability, and the impact of weather on crop yields:

Non-Waste (56%)

Maize Silage	3,500 tonnes
Grass Silage	5,000 tonnes
Straw	6,450 tonnes
NON-WASTE TOTAL:	14,950 TONNES

Farm Waste (44%) – estimates based on local availability

Chicken Manure	500 tonnes
Pig manure	5,500 tonnes
Cattle/Duck Manure	3,000 tonnes
WASTE TOTAL:	9,000 TONNES
GROSS TOTAL	**23,950 TONNES**

4.3 The total amount of pig manure estimated to be produced by Deal Farm pig unit is between 5,500 and 6,000 tonnes per annum. The remaining proposed deliveries (not produced on site and therefore delivered by road) to the AD Plant represent 17,950 tonnes – a reduction of 50 tonnes when compared to the 2015 permission (9,000 tonnes of maize and 9,000 tonnes of beet).

4.4 As indicated above, it has been necessary to amend the layout and plant from the scheme approved previously. In summary, the proposed development (including changes from the previously approved scheme) comprise:

- The transposition of digester tanks and silage clamps; the reasons being:
  - the site slopes by over 1.5m from west to east - it is therefore more appropriate to construct the tanks at the lower end of the site, from a vertical/visual impact perspective;
  - Less excavation is required at the lower end for the additional 'secondary containment' (a more recent requirement of the Environment Agency – CIRIA 736);
  - The west side of the site was found to be unsuitable for construction of the tanks, whereas a suitable structural clay strata was found on the east side.
- There are now to be two main tanks in lieu of three, as approved (though the total volume of these remains ostensibly the same);
- The tanks are set down into the ground in a lined, rectangular concrete bund - this form of secondary containment is a now a regulatory requirement to contain any potential spillage;
- As approved (2015) the three main domed tanks were: 2 no. 33m diameter; 1 no. 29m diameter, with a maximum domed height above ground level of approximately 12 metres. As now proposed, there are only two main domed tanks (digester tank and secondary digester/digestate tank), set into the ground. Digester: 35.6m external diameter; maximum wall height of 6.6m above relative ground level; maximum (inflatable) dome height of 14.9m above relative ground level – when inflated fully. Secondary Digester/Digestate Store: 35.6m external diameter; maximum wall height of 6.7m above relative ground level; maximum (inflatable) dome height of 15.2m above relative ground level – when inflated fully.

- Containerised equipment for the natural gas CHP, gas upgrading and grid entry equipment;
- The silage clamp area has been reduced from 9,225m² (as approved) to 7,140m²;
- Addition of a manure storage building;
- Addition of CO2 Recovery and Storage equipment;
- Addition of a fire water lagoon (triangular shape). This will also form part of the site's drainage, with site rainwater harvested and recycled for use on site where possible;
- Additional surface water drainage (swale);
- Additional landscaping/bunds;
- Approved vehicular access from Common Road for operational purposes.

Digestate Storage Lagoons

4.5 Owing to greater restrictions on the periods of the year when digestate may be spread to land, that have been implemented since 2015 (most notably the Farming Rules for Water Regulations), the application proposes 2 no. digestate storage lagoons, including permanent covers, in order to provide more capacity to store liquid digestate for longer periods. These will facilitate the storage and subsequent spreading of approximately 10,000 m³ of renewable liquid fertiliser. Liquid digestate - one of the by-products of the anaerobic digestion process - will be pasteurised on site to ensure complete microbiology and weed seed removal, before being transferred from the AD plant tanks via underground pipes to the storage lagoons. It is estimated that 80% of the liquid digestate will be spread umbilically either to adjacent off-take units (accessed by farm vehicles and spread to adjacent fields) or via an irrigation system to return to the fields to enhance soil fertility; and the remaining 20% will be taken from the tanker off-take points for transport for more outlying fields.

4.6 The release of the Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018 - also known as the "Farmers Rules for Water" (and more specifically the enforcement of these Regulations from March 2022), has extended the period over which liquid digestate must be stored from 5 months to 9 months of the year. The addition of the proposed lagoon storage will enable the site to meet these statutory obligations. There will be no direct, additional impacts in relation to vehicle movements to/from the AD plant as a result of the proposed storage lagoon as all materials will be pumped to and from the storage.

4.7 This is a sustainable solution for extended storage of digestate (a by-product of anaerobic digestion). This local facility will allow for the substitution of the high volumes of artificial fertilisers which are currently imported and used on surrounding farmland, whilst improving levels of organic matter and biodiversity within soil profiles. By storing the digestate until it is needed, the liquid digestate can be returned to the surrounding agricultural land at times to meet the optimal nutrient demand of growing crops on local farmland. Under the EU Nitrates Directive on soil protection, as interpreted by DEFRA in the UK, there are restrictions upon the timing of digestate application; increased local storage will provide for the judicious application of liquid digestate when crop nutrient uptake and soil conditions are good. The digestate fertiliser will be pumped and delivered via lay-flat and umbilical, reducing the need for HGV/tractor movements for the import of chemical-fertilisers, liquids and manures. The locality and availability of digestate will offer economic farming benefits by improving crop yields, productivity and synergy, whilst reducing farming requirements for chemical fertilisers.

4.8 The lagoon locations are shown in Figure 2 above, and are as follows:

- Lagoon A (North): 385 metres north-east of the main AD plant site; with a capacity of 5,000 m^3;
- Lagoon B (West): 640 metres south of the main AD plant site; with a capacity of 5,000 m^3;

5. Assessment and Evaluation

Planning Policy Context

5.1 For the purposes of this application, the Development Plan comprises the Greater Norwich Development Partnership's (GNDP's) Joint Core Strategy (adopted March 2011 with amendments adopted January 2014), and policies of the South Norfolk District Council Site Specific Allocations, and Development Management Policies Local Plan (both adopted October 2015). Furthermore, relevant policies of the Norfolk County Council Minerals and Waste Core Strategy & Development Management Policies DPD (2011).

5.2 Also of relevance are the South Norfolk Place-Making Guide SPD (2012), the Council's Landscape Character Assessment (2001) and South Norfolk Local Landscape Designations review (2012). The Government's National Planning Practice Guidance is also of relevance. These are material considerations in determining applications for planning permission and have been considered in the preparation of the accompanying proposals.

5.3 Section 38(6) of The Planning and Compulsory Purchase Act 2004 requires that decisions on planning applications must be made in accordance with the adopted Development Plan unless material considerations indicate otherwise. This is reiterated in the National Planning Policy Framework.

National Planning Policy Framework (July 2021)

5.4 The revised National Planning Policy Framework (NPPF) was published in July 2021 and is a material consideration of significant weight. The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It is a significant material consideration in planning decisions. In the context of this application the following paragraphs are of particular relevance to its determination:

- Sustainable Development: paragraphs 7-12;
- Determining Applications: paragraphs 47;
- Supporting a Prosperous Rural Economy: paragraphs 84 and 85;
- Promoting Sustainable Transport; paragraphs 110-112;
- Achieving Well-designed Places: paragraphs 126-135;
- Meeting the Challenge of Climate Change, Flooding and Coastal Change: paragraphs 152 - 158;
- Conserving and Enhancing the Natural Environment; paragraphs 174-182;
- Health/Amenity: paragraph 185;
- Conserving and Enhancing the Historic Environment: paragraphs 194-208.

National Planning Policy Guidance

5.5 The National Planning Policy Guidance (NPPG) was first published online in March 2014 and is a material consideration in planning decisions. In the context of these proposals, the following are considered to summarise the relevant guidance:

Renewable and Low-Carbon Energy: *"Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable"*. (Paragraph 05-001 - 20140306)

Local Plan

5.6 The principle of the site's development is established by the grant of planning permission in 2015. That permission was determined against the current Joint Core Strategy (JCS) and the previous Local Plan (2003). Since when, the Development Management Policies Local Plan (DMPLP) has been adopted (October 2015). Together, the JCS and DMPLP comprise the principal components of the Development Plan for the purposes of determining the current application.

5.7 A summary of relevant Development Plan policies is set out below in Table 1. During the course of the previous application (2021/2788), Norfolk County Council requested an assessment of relevant policies of the County's Waste Plan. This was submitted, and has been appended (as updated) to this statement (Appendix D).

Table 1: Relevant Development Plan policies

Joint Core Strategy 2011/2014
Policy 1 – Addressing Climate Change and Protecting Environmental Assets
Policy 2 – Promoting Good Design
Policy 5 – The Economy
Policy 17 – Smaller Rural Communities and the Countryside
Policy 20 - Implementation
South Norfolk Development Management Policies Local Plan 2015
Policy DM1.1 Sustainable Development
Policy DM1.3 Sustainable location of development;
Policy DM1.4 Environmental Quality and local distinctiveness
Policy DM2.1 Employment and Business Development
Policy DM3.8 Design Principles
Policy DM3.10 Promotion of sustainable transport
Policy DM3.11 Road safety and the free flow of traffic
Policy DM3.12 Provision of Vehicle Parking
Policy DM3.13 Provision of vehicle parking
Policy DM3.13 Amenity, noise and quality of life
Policy DM3.14 Pollution, health and safety;
Policy DM4.1 Renewable Energy;
Policy DM4.2 Sustainable Drainage and Water Management
Policy DM4.5 Landscape Character and River Valleys
Policy DM4.8 Protection of Trees and Hedgerows
Policy DM4.9 Incorporating landscape into design
Policy DM4.10 Heritage Assets

Emerging Local Plan

5.8 The Greater Norwich Development Partnership is preparing a new Local Plan. The Plan was submitted to the Secretary of State for examination on 30 July 2021. Examination hearings took place in February/March 2022; further hearings are to take place later in 2022. It is acknowledged that the LPA may give weight to relevant policies of the emerging Local (in accordance with paragraph 48 of the NPPF), subject to: the stage of preparation (the more advanced the greater the weight that may be given); the extent to

which there are unresolved objections to relevant policies; the degree of consistency of relevant policies to the NPPF.

5.9 Accordingly, some weight may be given to the following policies of the emerging Local Plan:

- Policy 2: (Sustainable Communities). Development must be high quality, contributing to delivering inclusive growth in mixed, resilient and sustainable communities, to enhancing the environment, and to mitigating and adapting to climate change, assisting in meeting national greenhouse gas emissions. [inter alia] Proposals for free standing decentralised, renewable and/or low carbon energy networks, except for wind energy schemes, will be supported subject the acceptability of wider impacts.

Other Material Considerations

5.10 Aside from the NPPF, the principal material consideration is considered to be the National Planning Practice Guidance - updated regularly - insofar as it addresses matters concerning renewable energy/climate change, transport, noise, amenity, landscape, conserving and enhancing the historic environment and the natural environment.

5.11 Other relevant Government planning and renewable energy policy to be considered in the preparation and determination of the application include:

- The UK Renewable Energy Strategy – 2009;
- The UK Low Carbon Transition Plan – National Strategy for Climate and Energy – 2009;
- UK Biomass Strategy – 2007;
- UK Bioenergy Strategy – April 2012 (DoT/DECC/DEFRA);
- Anaerobic Digestion Strategy and Action Plan - June 2011 (DEFRA/DECC);
- Climate Change Act – 2008;
- Planning Act - 2008;
- The Energy Act - 2013;
- The EU Renewable Energy Directive (2009/28/EC);
- Biomass Policy Statement (November 2021).

5.12 In March 2022, Natural England issued advice to all Councils in Norfolk about the wider impact of phosphates and nitrates on water quality within the catchment areas of the River Wensum and The Broads (Special Areas of Conservation – SAC). In summary, the advice requires that development proposals demonstrate that they would not add phosphates/nitrates such that the SACs are not adversely affected. The application site sits outside the catchment area but – for completeness – the application is supported by a Nutrient Neutrality Note prepared by Enzygo Environmental Consultants, which concludes that there is no hydrological or hydrogeological pathway for any nutrient emitted to ground from the proposed development to designated sites of concern to Natural England, and thus no Likely Significant Effect.

5.13 A detailed assessment of the planning policy and related context – insofar as they relate to these proposals - is set out in the Planning Statement section, below.

Physical/Landscape Context

5.14 An understanding of the landscape context of the site (main AD plant site and satellite lagoons) is fundamental to the preparation and consideration of development proposals therein. The South Norfolk Landscape Character Assessment identifies that the site/s are on the transition between the Landscape Character Areas identified as being the 'Great Moulton Plateau Farmland' and the 'Waveney Tributary Farmland'.

5.15 The key characteristics of the Great Moulton Plateau Farmland Landscape Character are:

- Flat, elevated plateau landform above the 50m contour with little topographic variation;
- Extensive arable farmland with large-scale fields and notable absence of boundaries;
- A large-scale landscape of openness and exposure;
- Isolated and infrequent blocks of mixed woodland, otherwise woodland is confined to tiny farm copses;
- A number of greens and commons, some with associated pond habitats;
- Expansive skies are a defining feature with distant views and farm buildings visible in the open landscape;
- Hedgerows are sparse with fuller enclosure along roadsides;
- Hedgerow trees are an important feature, marking the lines of former boundaries;
- A140 cuts north-south through the centre of the character area;
- Otherwise, straight rural roads cut through the area;
- Grass verges and occasionally ditches occur along road sides;
- Timber framed houses and moats;
- Large scale farm buildings, water towers, telegraph poles exposed in this open landscape and distinct absence of churches;
- Sparsely settled with scattered farmhouses, some linear settlement with absence of centre/ core;
- Disused airfields are a feature of the plateau at Shelton and Pristow Green.

5.16 The key characteristics of the Waveney Tributary Farmland Landscape Character are:

- Transitional landscape occupying the mid ground between the upland plateau (Great Moulton) Plateau Farmland) and the main river valley (Waveney Valley);
- Undulating landform to the south of the area where it is dissected by tributaries. Land is higher and flatter towards the north of the character area adjoining the Great Moulton Plateau Farmland;
- A large-scale open landscape on the higher ground with some distant views;
- Pockets of enclosure and intimacy associated with the tributaries;
- Narrow streams, drainage channels (within grass verges) ponds and moats are characteristic. Ditches occur along road sides and in places divide fields;
- Predominantly arable farmland with a varied field pattern. Fields are small to the south of the character area, larger on the higher plateau areas;
- Mature hedgerow trees are very distinctive especially large mature oaks;
- Hawthorn/ blackthorn hedges divide fields;
- Scattered blocks of woodland with some larger blocks having SSSI designations.
- Pockets of parkland and remnant parkland occur;
- Diversity of ecological assemblages including grassland, wet habitats, woodland, some of which are SSSI;

- Round tower and isolated churches are distinctive landmarks. Moats and earthworks are a feature;
- Settlement occurs throughout the character area. Villages are frequently linear along roads with some villages set around greens;
- Large farm units and processing units are present plus pylons which cut through this area;
- The AI40 and the Norwich-Diss railway line cut across the character area north south. Otherwise winding rural roads, and sunken lanes dissect the rural area;
- A peaceful and rural landscape.

5.17 There are no statutory or local landscape designations affecting the site or its vicinity.

Main AD Plant Site

5.18 During the latter part of the twentieth century, the agricultural landscape became radically cleared of hedgerows and trees. Around the application site, what were originally 10-12 small fields became one large arable field. The wider landscape has developed a much more industrial arable character. Blocks of trees and isolated boundary trees still remain, however, and are important features in the somewhat denuded landscape.

5.19 Topographically, the site is located on the eastern side of an area of higher land which reaches an elevation of around 60 metres around one kilometre west of the site on Stone Lane. Here, there are established hedgerows and blocks of trees which limit views somewhat for viewers at eye level. The site itself ranges from around 53 metres Above Ordnance Datum (AOD) in the west, to around 47 metres in the east.

5.20 The ridges of land to the west and north of the site creates screening on the site from this direction. The landscape can be defined as ordinary quality landscape according to general criteria: Typical open agricultural land where attractive features are offset by detractors. Some strategic planning is evident but development is primarily functional including housing estates, business parks or urban fringe land uses. Not particularly aesthetically attractive, but with more value than a poor-quality landscape.

Digestate Storage Lagoon Sites

5.21 The two lagoons occupy the western side of the small valley of a tributary of the River Waveney. The North lagoon is located on southward sloping land at an elevation of between 52 and 50 metres Above Ordnance Datum. The West lagoon is on slightly flatter ground closer to the tributary valley floor at an elevation of 47 metres AOD. The land rises to a plateau area at around 60 metres AOD to the west of Hall Farm. The landscape character around the locations of each lagoon can be described as follows:

- North Lagoon: Currently, there is still a hedgerow and some trees along the eastern boundary of the lagoon site, but most of the fields have been amalgamated. A farm pond to the north-east of the site also still remains. Generally, the lack of trees and hedgerow has now created a very open and intensively farmed landscape;
- West Lagoon: At the present time, the area has become denuded of trees and hedgerow, and the fields amalgamated into very large units, although with some mature trees around The Oaks. The lagoon site is now a bare part of a much larger field. The Oaks has developed into a complex farm unit, with many barns, other buildings and machinery being prominent in the landscape.

Economic Context

5.22 The proposed renewable energy facility has the ability to provide a range of economic benefits locally and nationally. The facility will provide direct employment via:

- Three on-site permanent employees to run and maintain the plant;
- Employment of local contractors, haulage and plant hire for construction of the facility;
- Employment of local farming contractors and logistics to manage feed and digestate to and from the facility;
- Landscaping, fencing and security supplies;
- Ongoing operational needs to employ local tradesmen for electrical, plumbing, construction and general maintenance requirements.

5.23 Indirect employment/service requirements during construction and commissioning, including:

- Local hospitality/accommodation;
- Catering and other facilities;
- Purchase and maintenance of local workforce vehicles;
- Taxi services.

5.24 The facility will also bring economic benefits by contributing to the Government's commitment to the substantial growth of renewable energy's contribution to the UK's power supply, and to cut CO2 emissions by 78% by 2035 (and net zero by 2050). As well as providing increased security of energy supply over foreign fossil-fuel imports (as evidenced by the 300% price rise in natural gas this year). South Norfolk Council will also benefit directly through Business Rate contributions.

5.25 Local economic farming benefits will also accrue by offering farmers an opportunity to grow financially viable break/cover/catch crops within existing rotations, delivering stable, long-term returns; and displace the cost of chemical fertilisers that have risen from £300 to £800 per tonne in 2021. UK farming has experienced a decline in Total Income from Farming (TIFF) during recent years by over 6% and according to DEFRA these periods of volatility are likely to occur over the foreseeable future. This type of diversification development will assist in addressing that decline and allow local farmers to be compliant with recent legislation on the management of slurries and manures; and to be able to make long-term stable plans on the basis of a local markets for their produce and by-products.

[The above is elaborated upon in the Planning Statement: Economic and Operational Context]

6. Design

Use

6.1 In light of the above assessment and evaluation, this revised application proposes the construction of a locally sourced biomass fueled, renewable energy facility, together with 2 no. storage lagoons. The buildings and infrastructure to be constructed will comprise plant and structures/tanks for the storage of feedstock material and bio-fertiliser, road accesses and internal roads, the biogas digesters, lagoon, silage clamps, hoppers, biogas upgrader, grid entry unit, propane storage, CHP, CO_2 recovery plant, and ancillary structures and buildings for the renewable energy process and site management.

Amount of Development

6.2 The complete application site (AD plant and lagoons) occupies an area of 5.55 hectares. The main part of the application site (AD plant) comprises some 4.2 hectares, including access roads leading to/from Common Road (east) and Kenninghall Road (south-west). The following principal structures are proposed for the site:

- Digester (35.6m diameter; maximum wall height of 6.6m above relative ground level; maximum – inflatable - dome height of 14.9 m above relative ground level);
- Secondary Digester/Digestate Store (35.6m diameter maximum wall height of 6.7m above relative ground level; maximum – inflatable - dome height of 15.2 m above relative ground level);
- Buffer Tank (11.1m diameter; 5.6 m high);
- Three no. Silage Clamps (23.5m x 70m; 34m x 70m; 45m x 70m);
- Manure Store (24m x 10m x 5.2m to ridge);
- Pasteruisation Unit (9.3m x 4.5m high);
- CO2 recovery building (20m long; 10m wide; 11m to ridge) and storage tanks (3m x 3.2m x 11m long);
- Feeding Unit (2 no.) (13.8m x 4.3m x 4.8m high);
- Pump Unit and Electric Container (14.2m x 5.4m x 1.5m high);
- Gas-to-Grid Unit (19m x 9m x 2.7m high);
- Biogas Boiler (10m x 3m x 2.8m high);
- Gas Entry Unit (8m x 4m x 2.6m high);
- CHP (14.9m x 2.4m x 3.1m high; stack to height of 10.4m);
- Flare (9.8m high);
- Site Offices (2 no.) (12m x 3.6m x 2.9m high);

6.3 The 2 no digestate storage lagoons are to have a capacity of 5,000 m^3 each and occupy sites: (Lagoon A/North) 385 metres north-east of the plant site; (Lagoon B/West) 640 metres south of the plant site. In the previous application (2021/2788), Norfolk County Council's Public Rights of Way (PROWs) Officer identified that Lagoon B was located close to a right of way known as Bressingham Footpath 9. The current application repositions that lagoon by 12 metres, to avoid any proximity to Footpath 7. Also, that public rights of way known as Bressingham Footpaths 9 and 12 would be affected by the proposed lagoon pipelines. We can confirm PROWs will be treated as roads, river or ditch crossings: i.e., achieved through 'thrust-boring': trenching up to limits and then 'burrowing under' paths, to a trench on the other side. Pipes can then be laid pipe in pipe, under the path to avoid collapse. All such work would be undertaken in accordance with relevant Highways Acts.

Layout

6.4 The site has been selected as it is located close to a local biomass supply (produced by RG Aves and Partners and adjacent farmers), and close to end users for the digestate, in order to reduce the need for travel (the transportation of biomass to plant and digestate therefrom); and proximity to the Gas Grid (c. 600m). The site was also selected as it is screened by the existing piggery and farm buildings, has some existing man-made and natural vegetation screening and is a good distance from houses, minimising possible impacts from any noise and odours.

6.5 The layout is shown on the accompanying plan (Ref. 27249/611 Rev E). It represents a generally standard layout for this type of development, largely dictated by operational requirements. Nevertheless, it has been designed to take advantage of existing and proposed landscape features (agricultural buildings and natural vegetation) and new proposed features (earth bunding and additional planting) to aid integration into the wider landscape.

Scale

6.6 The scale of the component parts of the proposed development are explained in paragraph 6.2, above.

Appearance

6.7 The form and appearance of the structures and plant are largely influenced by function. Nevertheless, attempts have been made – in revising the layout/configuration – to make the structures visually interesting whilst acknowledging their utilitarianism and agricultural setting. The tanks are at the lower end of the natural fall of the site and now set down into the ground.

6.8 Consideration has been given to the advice regarding development in the countryside contained within policies of the Development Plan, in particular the siting and materials of such buildings. Design advice relating to agricultural buildings is equally applicable to a renewable energy facility located in the countryside.

6.9 The majority of the structures are finished in a dark green colour and light grey, intended to be a recessive element of the landscape, with the general appearance of plain, agricultural buildings. The matt green finish to the structures/plant will avoid potential impacts due to glare or reflections and blend into the rural landscape, supplemented by new landscaping (see below).

Landscaping

6.10 The application incudes – for consideration – a detailed landscaping scheme and landscape management plan (please see Appendix C). The objective is to assist the integration of the development into the landscape; specifically, to provide new hedgerow and trees to ameliorate the impact of the new development and also to reinstate some of the landscape structure which has been lost in the past century. The following new planting of hedgerow and trees are proposed:

- 775 metres along Kenninghall Road and around the northern perimeter of the site;
- 293 metres along the foot of the bunding on the eastern part of the site;
- 454 metres along Common Road to the east of the site;

- Additional hedging around the lagoons;
- Additional tree planting north-east of Deal Farmhouse, to provide long-term screening and enhancement to the landscape setting of the listed farmhouse.

Lighting

6.11 There will - for reasons of operation and safety – be a necessity for lighting of the main AD plant site. Under normal circumstances the lights will remain off; only if the site needs to be accessed outside normal working hours would the lights be illuminated. A lighting scheme accompanies this application and has been designed to avoid external spillage or general light pollution, and follows the advice/guidance provided by Broom-Lynne in the accompanying Landscape and Visual Appraisal.

Pipelines

6.12 Liquid digestate will be transferred from the AD plant tanks via underground pipes to the storage lagoons. The 2015 application proposed that liquid digestate be transferred via underground pipelines to draw-off points, from which the digestate would be spread on fields as fertiliser. As explained above, it is now necessary to store the digestate in lagoons, at three locations around the farm. A condition of the 2015 permission required approval of pipeline details prior to the development being brought into use. In the current application, these pipeline routes are provided (see site location plan, Figure 2 above).

6.13 A LTS (Cadent)) gas main runs south-east/north-west, the proposed connection point for which lies 600 metres to the north-east of the main AD plant site. Cadent will install the connecting gas pipeline (taking AD plant gas to the main). Information in relation to this was previously approved by South Norfolk Council, pursuant to a condition of the 2015 permission. The connecting pipeline route is shown at Figure 3, below.

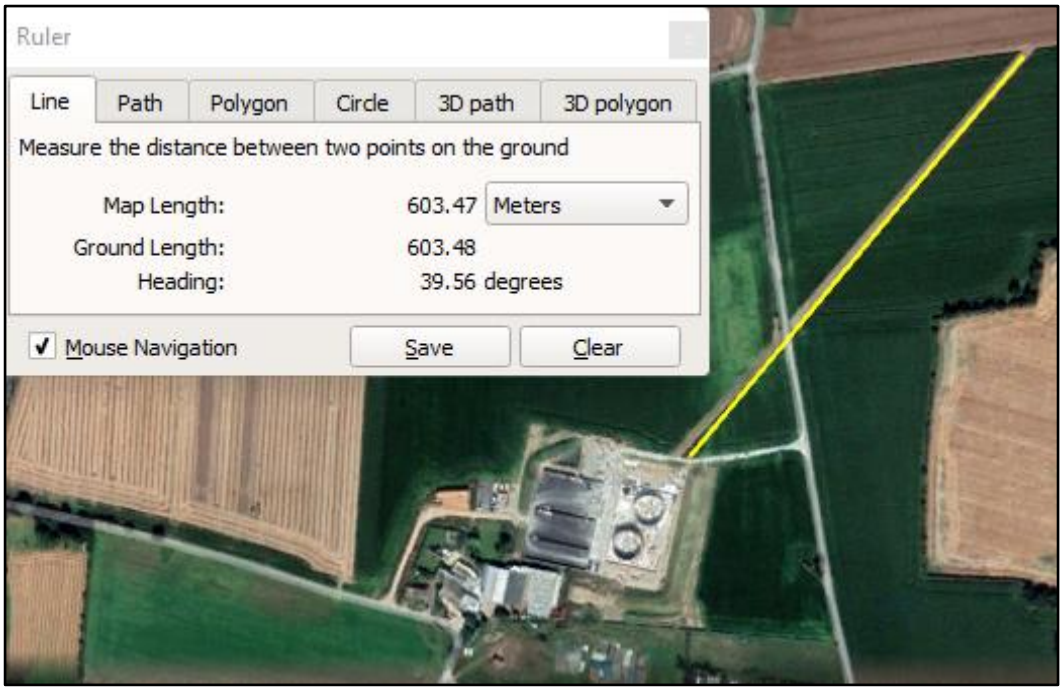


Figure 3: Gas Pipeline Route

Lightning Conductors

6.14 Lighting conductors have been installed on the Digester and Secondary Digester/Digestate Store. The provision of lightning protection is a safety measure that must be considered under Regulation 6 of the Electricity at Work Regulations 1989. This is a general requirement for all projects including electrical equipment. The requirement is that equipment which may be reasonably exposed to risks, including lightning strike, shall be protected to prevent, as far as is reasonably practicable, danger. BS-EN 62305-1 Protection against Lightning is referenced in the Regulations. The report by Best identifies the following:

- Risk to Life tolerable risk 1 x 10^{-5} Calc risk 3.58 x 10^{-2} exceeded by 3,500 times;
- Risk to Public tolerable risk 1 x 10^{-4} Calc risk 3.59 x 10^{-3} exceeded by 35 times.

6.15 By way of secondary legislation, the plant falls under the Dangerous Substances and Explosive Atmosphere Regs (2002) (DSEAR). DSEAR is made up of:

- Directive 99/92/EC (Also known as 'ATEX 137');
- Directive 2014/34/EU (Also known as 'ATEX 95');
- EC Chemical Agents Directive.

6.16 The UK also adopts the European normative documents:

- BS EN 60079 Explosive Atmospheres;
- BS EN 1127 Explosive Prevention and Protection.

6.17 ATEX 137, Article 3 states prevention and protection principles, and should be considered in order:

- Substitution – Prevent the formation of an explosive atmosphere by using an alternative solution or method. Generally, this would be done before the site is built, therefore the zones present are there because they cannot be substituted;
- Control – Avoid or prevent the ignition of the explosive atmosphere. Lightning is a source of ignition. A lightning protection system in accordance with 62305 should be installed;
- Mitigate – Reduce the effects of an explosion to ensure the health & safety of workers.

6.18 The requirement also forms part of Cadent's (the gas network operator) provisions, whereby the Gas Entry Unit (GEU) and Remotely Operated Valve (ROV) must be connected to the Lightning Protection System.

7. Access

7.1 Relevant policies of the Development Plan seek to promote more sustainable transport and to ensure that development proposals are capable of being served by safe access to the highway network, without detriment to the amenity or character of the area.

7.2 The site is located to the north of the existing Deal Farm cluster of buildings off Kenninghall Road, Bressingham. It is within a predominantly agricultural area, where farm vehicles are frequent/common place, and farms well established.

7.3 Currently, the cluster of buildings at Deal Farm have multiple access points to the two houses, piggery, straw stacks, maize field clamps and field access in general. However, access to the proposed AD Plant will be via two main access points:

- Access (1) is the dedicated access to Common Road, granted permission in 2015 (2015/0595); and
- Access (2) is an internal access between the back of the piggery unit and the AD plant, and is to be only used for transferring straw and muck from Deal Farm to the AD Plant via internal movement only.

7.4 Historically, the farm has grown and continues to grow cereals (mainly wheat) and sugar beet, which is stored at The Oaks and Deal Farm (pads, field heaps/ clamps and stores) before bulking and transfer for onward delivery to the following:

- Wheat – delivered to grain mills via A1066 to Kenninghall and Burston;
- Sugar Beet – delivered to Bury St Edmunds or Wissington, through Bressingham via A1066.

7.5 Beet harvest carries on throughout the winter and there is a long history of beet farming and transport of this material on Bressingham and South Norfolk roads. The site benefits from well-established links to the A1066 and the B1077, which has had the necessary upgrades to cater for developments and larger vehicles. Vehicular access and egress to the site will be gained via separate entrances and exits to the east and west as detailed above. It is anticipated that vehicles will mainly be accessing and egressing site from the local villages surrounding the site, from the landholding owned by RG Aves.

7.6 Further details are provided in the accompanying Transport Statement.

8. Conclusions

8.1 This Design and Access Statement demonstrates the process of appraisal, evaluation and design for a proposed (revised) renewable energy (biogas) facility - together with 2 no. digestate storage lagoons - on arable land at Deal Farm, Bressingham. From this process has emerged what the applicant considers to be a contextually appropriate, sympathetic and sustainable development, having regard to the constraints, characteristics and opportunities presented by this site and its surroundings, together with relevant Development Plan and national policies concerned with access/highways, amenity, design and the protection of the countryside/landscape.

Planning Statement

1. Background

Anaerobic Digestion

1.1 Anaerobic Digestion (AD) involves the digestion of organic material in the absence of oxygen. AD is extremely widespread across many European countries as it offers many environmental benefits for the treatment and utilisation of biomass crops and residues, as well as producing renewable energy in the form of methane rich biogas. AD is recognised and supported by the Government, National Grid, DECC, Defra, Environment Agency, WRAP, REA, ADBA, Ofwat, Ofgem, NFU, CLA amongst others.

1.2 The plant converts locally sourced biomass (purpose-grown crops) and farm waste and by-products like straw into biogas, which in turn is 'upgraded' to biomethane gas that is transferred directly into the local gas network. The upgrading process also captures renewable CO2 for using in industry. Digestate remains from the process and is returned as organic fertiliser to farmland. This improves soil productivity, stores carbon in the soil and improves the yields of subsequent crops.

1.3 The growth of AD in the UK has been slow compared to that in mainland Europe, but since the introduction of the UK Government's Renewable Energy Strategy (2009) there has been a surge of interest from Government, industry and farmers as the UK has recognised the benefits of this process. The recently published Biomass Policy Statement (November 2021; Department for Business, Energy and Industrial Strategy) reinforces the role identified for biomass in the short to long term, as part of the Government's policy to accelerate the decarbonization of the UK economy across all sectors.

1.4 In addition to renewable, sustainable energy, AD plants also produce other important products such as carbon dioxide (CO2) for commercial/ industrial uses, and digestate (a bio-fertiliser replacing conventional chem-fertilisers). The digestate from AD plants can be used to replace inorganic fertilisers, creating a closed loop nutrient cycle back to land. The digestate contains useful nutrients and can be used as a fertiliser and soil conditioner. This in turn reduces the risk of leaching and run off and so can prevent diffuse water pollution. By replacing inorganic mineral fertiliser - the production of which requires significant energy input - AD is also able to provide additional benefits in terms of reducing greenhouse gas emissions through CO2 sequestration and additional carbon capture that already occurs when the organic matter within the digestate is applied to the soils.

1.5 Anaerobic Digestion is helping the UK meet several major challenges, principally climate change and energy security. The UK has committed to achieving a 100% reduction in greenhouse gas emissions below 1990/95 levels as outlined in the amended Climate Change Act 2008. The UK Government has put in place a new target that will require the UK to bring all greenhouse gas emissions to net-zero by 2050. To help meet this 2050 target the government introduced carbon budgets as part of the Climate Change Act 2008. The UK has already reduced emissions by 43% (2018, from 1990 levels) whilst growing the economy by 72% and has put clean growth at the heart of its modern Industrial Strategy. This could see the number of "green collar jobs" grow to 2 million and the value of exports from the low carbon economy grow to £170 billion a year by 2030.

1.6 The UK Low Carbon Transition Plan, published in July 2009, highlighted the importance of Anaerobic Digestion in tackling climate change by delivering clean, renewable energy. In addition to this, the 2011 Anaerobic Digestion Strategy and Action

Plan published by the Coalition Government continues to promote the importance of continuing Anaerobic Digestion investment. Since the Anaerobic Digestion Strategy and Action Plan was published there has been an increase in energy produced from Anaerobic Digestion. In 2019 the Chancellor, in his budget statement, announced further backing of the Anaerobic Digestion industry: *"we will publish proposals to require an increased proportion of green gas in the grid, advancing decarbonisation of our mains gas supply"*. Anaerobic Digestion is playing an increasing role in addressing the Government's commitment to the substantial growth of renewable energy's contribution to the UK's power supply, and to cut CO2 emissions by 78% by 2035 (and net zero by 2050), It also supports increased security of energy supply over foreign fossil-fuel imports (as evidenced by the 300% price rise in natural gas this year).

1.7 Unlike other renewable energy technologies, Anaerobic Digestion can contribute to all three energy sectors (heat, power and transport) – especially those that have historically been difficult to decarbonize and perform worst in this regard (namely the agricultural sector, heat and transport fuels), and as such will be key in aiding the UK in achieving its goals. Anaerobic Digestion is already reducing the UK's greenhouse gas emissions by 1% annually. From the Anaerobic Digestion and Bioresources Association (Spring 2020): *"The AD industry has the potential to contribute 30% of the carbon savings required to meet the UK's 5th carbon budget, cutting carbon emissions by over 27 million tonnes of CO2 every year, or 6% of today's emissions. It means that policies to support the sector will ultimately help Government fill the gap between its ambitious target and its current policies."*

1.8 UK farming has experienced a decline in Total Income from Farming (TIFF) during recent years and according to DEFRA these periods of volatility are likely to occur for the foreseeable future. The proposed scheme offers local farmers an opportunity to diversify their businesses with additional long-term stable income streams from the supply of feed to the Plant, enhance and invest in their existing farm practices against secured income and reduce overheads/ costs through the recycling of digestate rather than imported chemical-fertilisers. Subsequently, this facility will make their businesses more robust to market pressures in an uncertain future, securing economic growth and associated jobs in the local rural economy.

<u>Economic and Operational Context</u>

1.9 South Norfolk is a heavily agricultural area for both arable (crops) and especially livestock. In 2017 the Eastern Daily Press reported that Norfolk was home to 10% of the UK's large-scale livestock units (defined as such by requiring an IPPC permit) and that 30 of these were in South Norfolk. Based on the applicant's preliminary investigation into the availability of farmyard manures for the AD plant, they have identified approximately 40 no. livestock farms within 5km, of the proposed AD site.

1.10 New legislation – particularly the Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018 (also known as the Farmers Rules for Water) and the Clean Air Strategy 2019 - place an onus on farmers to store and more safely manage and dispose of manures and slurry generated, and to control the release of key polluting emissions (including ammonia).

1.11 As indicated by the number of livestock farms within a 5km of Deal Farm, taken together with the absence of any dedicated facility by which to store and dispose of such farm waste, it is apparent that the proposed AD facility (including covered digestate storage lagoons) at Deal Farm, would make a significant provision for local farmers in South Norfolk to be able to meet these new legislative and regulatory requirements.

1.12 In addition to livestock – South Norfolk is a large producer of arable crops. In particular, over the past several decades, sugar beet for sugar manufacture at the British Sugar plants in Wissington and Bury St Edmunds (requiring transport out of the local area). Sugar Beet in particular is an intensively grown crop, yielding some 80 tonnes per hectare – therefore an area within 5km of the proposed AD plant at Deal Farm might, in theory, easily produce over 500,000 tonnes per annum if totally given over to its production.

1.13 Deal and Oak Farm have traditionally grown large quantities of Beet – which, while economically positive, have negative impacts on soils and roads (being that harvest can be all through the Autumn and Winter – even into January when soils are heavy and prone to damage and compaction if large vehicles are used on them). Providing an alternative crop that can be harvested through summer to early autumn would significantly reduce soil erosion and road impact.

1.14 In recent years, the beet harvest has become more variable through the banning of neonicotinoid pesticides and resulting impact of beet yellow virus – resulting in the UK Government allowing their use for beet only. This represents a risk to both the beet growers (who may find the pesticide banned again) and the environment – through its impact on bee colonies.

1.15 By working with Oak/Deal Farm and surrounding farms, the plant will:

- Reduce reliance on sugar beet as a commercial crop;
- Reduce 'food miles', as crops will stay within 5km of production (unlike Wissington – 58km, or Bury St Edmunds – 40km); these materials can stay north of the A1066 instead of passing through villages;
- Provide a stable, consistently priced market for locally grown arable produce; and
- Provide organic fertilizer, reducing dependency on imported chemical fertiliser.

1.16 In recent times agriculture has been subject to an extremely high degree of volatility owing to:

- A shortage of European labour, post-Brexit;
- Economic uncertainty over the replacement of the Basic Payment Scheme;
- Unusually high inflation: manpower, fuel and gas prices have driven up costs;
- Fertiliser inflation – Nitrogen fertiliser has risen from £300 per tonne to £800 per tonne in the past 12 months;
- CO2 shortages – along with labour shortages, impacting on slaughter houses – leaving farmers with stock they cannot sell;
- COVID-19 – further impacting on manpower availability – as agriculture is a peak demand industry (requiring significant seasonal labour volumes to meet harvest, picking and other seasons).

And that is in addition to the usual vagaries of the weather, pests and disease.

1.17 In addition to its numerous environmental and energy benefits, the AD plant at Deal Farm is a significant economic benefit to the local economy of Bressingham and South Norfolk:

- It will create 3 full time local jobs (operators must live close to the plant in order to be onsite at short notice);
- It will create a number of additional specialist jobs associated with the ongoing maintenance and technical/biological support of the plant (e.g., CHP/Gas Upgrader/Plant/Mobile Plant/Site maintenance, biological support/expertise, laboratory testing of samples – feed/digester/digestate – and so on);
- It will safeguard numerous agricultural jobs associated with the growing of crops, rearing of livestock and the logistics of such;
- It will provide much needed economic stability by offering long-term inflation linked prices for crops, straw and other by-products;
- It will offset the cost of compliance with Farming Rules for Water Regulations and the Clean Air Strategy, by offering value to farmers for their manures and slurries (relative to the amount of gas they produce);
- It will reduce the massive impact of fertiliser cost increases by offering a local, organic alternative to NPK fertiliser in the form of both liquid and solid digestates, at hugely reduced prices;
- It will reduce the cost and impact of haulage by reducing road-miles, as materials are currently sent much longer distances to market;
- The gas will be utilized locally with local mains in Roydon and Diss fed from the main at Deal Farm;
- Production of UK green gas will reduce the UK's reliance on imported oil and gas by producing homegrown vehicle fuels, heat and power; and
- Finally, the plant will pay substantial Business Rates that will be invested in improving local services and infrastructure.

1.18 While the cost of buying such gas will be spread over every gas bill in the UK, the economic and environmental benefits will be concentrated in Bressingham and South Norfolk. In short, unlike other 'renewables', Anaerobic Digestion provides a myriad of benefits that go far beyond just renewable gas, integrating seamlessly with local farming processes and adding economic and environmental benefits and stability at every stage of the supply chain.

(Please refer to Appendix B for details)

2. Proposed Development

2.1 The site, context and proposed development are described above in the Design and Access Statement section of this document.

3. Planning Policy Context

Introduction

3.1 Section 38(6) of The Planning and Compulsory Purchase Act 2004 requires that decisions on planning applications must be made in accordance with the adopted Development Plan unless material considerations indicate otherwise. This is reinforced by the National Planning Policy Framework (NPPF).

3.2 The Design and Access section of this statement sets out the relevant policies of the NPPF, in the context of these development proposals.

Development Plan

3.3 For the purposes of this application, the Development Plan comprises the Greater Norwich Development Partnership's Joint Core Strategy (adopted March 2011 with amendments adopted January 2014), and policies of the South Norfolk District Council Site Specific Allocations, and Development Management Policies Local Plan (both adopted October 2015). Furthermore, relevant policies of the Norfolk County Council Minerals and Waste Core Strategy & Development Management Policies DPD (2011).

3.4 Table 1 of the accompanying Design and Access Statement (and Appendix D) summarise the relevant Development Plan policies in the context of these proposals.

Other Material Considerations

3.5 Other material considerations relevant to the determination of this application include:

- National Planning Policy Framework (2021);
- The National Planning Policy Guidance (2014).

4. Evaluation and Assessment

4.1 The following sections provide an assessment of the planning policy context, and other matters relevant to the determination of the application, including the assessments and reports which accompany it, evaluating the proposed development against the Development Plan and other relevant material considerations.

The Principle of Development

4.2 Section 38 of The Planning and Compulsory Purchase Act 2004 ('The 2004 Act') indicates that the determination of planning applications must be in accordance with the approved development plan unless material considerations indicate otherwise.

4.3 The UK is legally bound by the Climate Change Act (2008) to cut greenhouse gas emissions by 80% by 2050, compared to 1990 levels. The proposed AD plant development would contribute towards meeting this requirement, supported by energy policy given that it would introduce new energy infrastructure supporting the move to a low carbon economy.

4.4 Pursuant to the 2008 Act, the NPPF offers significant support for renewable energy development and places an over-riding emphasis on the presumption in favour of sustainable development, which these application proposals comprise. Supporting infrastructure, which is required to ensure the generation of renewable energy, is inherently sustainable under the NPPF.

4.5 Local Plan Policy DM1.3 criteria 2(c) states that proposals for new development in the countryside will only be granted where specific Development Management Policies allow for it. Policy DM4.1 supports proposals for renewable energy generating development such as anaerobic digestion. The policy requires that consideration is given to the effect of the proposal on the character and appearance of the landscape, the effect on designated and undesignated heritage assets and the amenities and living conditions of nearby residents by way of noise, outlook and overbearing effect or unacceptable risk to health or amenity by way of other pollutants such as dust and odour. The policy states that permission will be granted where there are **no significant adverse effects or where any adverse effects are outweighed by the benefits** (our emphasis)**.**

4.6 The principle of the development of an anaerobic digestion plant on the site is long established, through the successive grant of planning permissions (initially by Norfolk County Council and then by South Norfolk Council). In all three instances, acknowledging that the development was in accordance with Government Policy and the adopted Development Plan, and that any impacts – principally, those relating to its location in the countryside – were outweighed by the benefits accruing from a renewable energy development (i.e., addressing green energy targets, tackling the challenges of climate change, lessening dependency on fossil fuels, and benefits from energy security).

Sustainable Development

4.7 The NPPF introduces a clear and unequivocal presumption in favour of sustainable development, requiring that development proposals be approved where they accord with the Development Plan, unless material considerations indicate otherwise. Key Development Plan policies include: Joint Core Strategy (JCS) Policy 1 (Addressing Climate Change and Protecting Environmental Assets), Development Management Policies (DMP) Plan policies DM1.1 (Sustainable Development), DM1.3 (Sustainable Location of Development) and DM1.4 (Environmental Quality and Local Distinctiveness).

4.8 The application proposals are, in themselves, sustainable development in that they propose the development of a renewable energy facility, the impacts of which would not significantly or demonstrably outweigh its benefits. The application and its supporting material, together with the remainder of this Planning Statement, demonstrate that these development proposals accord with the NPPF and the policies of the Development Plan.

Sustainable Energy and Climate Change

4.9 Key Development Plan policies include: JCS policies Core Strategy Policies 1 (Addressing Climate Change and Protecting Environmental Assets) and 3 (Energy and Water), together with Development Management Policies (DMP) Plan policy DM4.1 (Renewable Energy). Also material are, inter alia: the NPPF; the UK Renewable Energy Strategy (2009) the UK Low Carbon Transition Plan (2009) and the Biomass Policy Statement (November 2021; Department for Business, Energy and Industrial Strategy)

4.10 The NPPF and other Government (energy) policy make it clear that planning has a key role to play in combating climate change and creating an attractive environment for innovation and for the private sector to bring forward investment in renewable and low-carbon technologies, thereby helping the UK meet its international commitments and targets for greenhouse gas emissions, including CO_2.

4.11 Within this context, the application proposals are for a 4MW biomass fueled renewable energy facility. The plant will produce up to 35-39,000MWh of renewable energy (biomethane) from local biomass, sufficient energy (based on an average household consumption of 12 MWh/annum) to serve around 3,250 homes. Total CO_2 emissions saved (based upon a CO^2 output from burning gas of 0.185 kg/kWh) would be 7,215,000 kg/CO_2 per annum.

4.12 The proposed CO^2 recovery plant (not part of the 2015 scheme) would also produce over 5,000 tonnes of CO^2 in liquid form; as a by-product of the anaerobic digestion process, carbon dioxide will now be captured, processed (liquified) and distributed to manufacturing industry (food, drink, cement, etc.). In recent times, production of certain food, drink and other products was compromised due to national carbon dioxide shortages. The plant will help alleviate some of the UK's supply issues for a gas that is critical in so many industries. This process displaces the use of fossil fuels with sustainably-produced green gas**,** reducing the net flow of CO2 (there are no atmospheric emissions from this part of the process) to the atmosphere and capturing all the by-product of the process. This is the equivalent of removing:

- 1,150 cars each year from UK roads; or
- 13,800,000 road car miles per year.

4.13 It is apparent that the proposed development represents an innovative renewable energy technology and is thereby consistent with the sustainable energy, climate change and environmental objectives of Development Plan policy, national planning and renewable energy policy. Subject to it meeting the environmental and amenity policy requirements of local and national policies (which the remainder of this report demonstrates), then the development accords with relevant planning and related policies. The development proposals also reflect and provide for the three dimensions to sustainable development cited in the NPPF (paragraph 8).

Flood Risk and Surface Water Drainage

4.14 There are a range of policies concerned with the need to address the flood risk of new development and the protection of surface and ground water. Namely: the NPPF and its Technical Guidance, JCS policy 1 (Addressing Climate Change and Protecting Environmental Assets), together with Development Management Policies (DMP) Plan policies DM1.1 (Sustainable Development) and DM4.2 (Sustainable Drainage and Water Management). These policies seek to ensure that the sequential test set out in the NPPF Technical Guidance is applied and that most new development is located in Flood Zone 1. Additionally, they require that a site-specific Flood Risk Assessment, which takes account of future climate change, is undertaken for development proposals of 1 hectare or more in flood zone 1. Furthermore, appropriate surface water drainage arrangements for dealing with surface water run-off from new development should be provided including, if feasible, the use of Sustainable Drainage Systems.

4.15 A Flood Risk Assessment (FRA) has been prepared for the AD plant site, together with a Drainage Design Strategy and Philosophy Statement, and separate FRAs for each of the 2 no. storage lagoons, submitted to support the application. These have been amended from the previous (2021/2788) application to address matters raised by the Lead Local Flood Authority (LLFA), including the provision of additional information and the relocation of the proposed West lagoon outside of an area at risk of surface water flooding. The FRAs (prepared by Plandescil Consulting Engineers) conclude as follows:

AD Plant Site - FRA

- The FRA evaluates the flood risk to the AD Plant proposed site, in addition to considering the impact that the proposal will have on the surrounding area. It shows that the proposed development is located in fluvial and tidal Flood Zone 1 and is at very low risk of flooding from groundwater, or reservoirs. This site is shown to be at risk of surface water flooding; however, the incorporation of the following mitigation measures will reduce the risk to site users:
    - As part of the design of the site, a bund will be located on the western, north-western, south-eastern, and eastern boundary of the site. This along with the presence of a swale will help redirect the water around the proposal;
    - Special consideration should be given to the foundations and building design to protect against water ingress. The buildings should be constructed in accordance with the Building Regulations for protection against moisture effects;
    - It should be noted, due to the concrete and steel used within their construction, the buildings on-site are naturally flood resilient. This means that, in the event the floodwaters enter the buildings, they can recover quickly from the intrusion. To minimise the impact of flooding, sensitive equipment or anything prone to water damage should not be stored within this area or should be raised above the predicted flood height;
    - In order to know when pluvial flood events are likely to occur, the site manager should register to receive Severe Weather Warnings from the Met Office. This will enable the site users to receive advanced warning of an extreme rainfall event, allowing them time to prepare for it;
    - Access through less than 0.30m of floodwater at a velocity of less than 1.00m/s is deemed acceptable to all, in accordance with the R&D Technical Report FD2320/TR2. However, where floodwater exceeds this depth and/or velocity, site users should avoid walking through the floodwater, as it is considered to be dangerous for some/most;
    - Non-return valves should be considered within the foul and surface water drainage system to prevent back flow during a pluvial flood event.
    - The surface water runoff from the site will be contained in a drainage system designed to contain up to and including the 1 in 100-year event + Climate Change;
    - To reduce the risk of flooding due to the failure of the surface water drainage system over its lifespan, a maintenance scheme for the drainage should be adhered to.

AD Plant – Sequential Test

- It is the Local Planning Authority's responsibility to apply the Sequential Test to steer proposed new development away from areas at risk of flooding. However, the proposed development will be located within fluvial and tidal Flood Zone 1. Tables 1, 2, and 3 of NPPF Practice Guidance states that this is the preferred Flood Zone for all new development. Therefore, the Local Planning Authority will not be required to apply the Sequential Test to the proposed development in this instance.

- The site is located outside of the area at risk of surface water flooding during the 3.3% AEP pluvial flood event. During the 1.0%, and 0.1% AEP flood events pluvial flooding occurs within the site, however the incorporation of the mitigation measures as detailed below will reduce the risk to site users. The site was specifically positioned at this location due to the following reasons:
    - The location was established through a sequence of planning applications historically for the AD Plant;
    - The corner of our client's land utilised for the proposal is the best option in regards to suitable ground conditions for construction, access location and position to the existing farming operations;
    - It is the best functional location for the operations required, and the land sources available;
    - The gas main connection is in the adjacent field, which will reduce the impact of pipework to the main, and positions the plant in the best location to its proximity without the need for any further additional plant off-site at the grid connection;
    - The current transport routes to market or end user are already established from the existing holding, with both farms located immediately adjacent to the Plant;
    - This then reduces the need to travel further afield, and reduces transport numbers from the farm, as they are direct to the receiving Plant as opposed to travelling by road. This also avoids driving directly through villages.
    - Both farms are existing livestock farms which have direct product from source required to feed the digesters;
    - The current ground conditions are clay-based soils, which helps aid in the containment design for the Plant, based upon CIRIA C736 recommendations;
    - The existing landscape of the farms helps with the screening of the Plant, as opposed to being completely remote;
    - It is located at least 1.5km away from the nearest village in all directions.
- Given that it was not possible to locate the Plant outside of the area at risk of surface water flooding, mitigation measures have been incorporated into the design of the site to reduce the impact that the pluvial 1.0%, and 0.1% AEP flood events could have on-site. This will include the provision of a bund on the western, north-western, south-eastern, and eastern boundary of the site. This along with the presence of a swale will help redirect the water around the proposal.
- It should also be noted that all renewable energy proposals, including AD plants fall outside of the current and emerging Local Plan allocations, therefore the proposal needs to be reviewed under its own merits.

AD Plant Site – Drainage Strategy

- The Deal Farm AD Plant drainage strategy consists of a mixed surface water and leachate water system, segregating clean hardstanding areas of the site from dirty hardstanding areas, with the aim of removing all surface run-off as quickly as possible. The dirty water (leachate) system has been designed for the process material storage areas on the site, where vehicle movements are prevalent and surface water contamination is possible. Meanwhile, a separate clean system has been proposed for areas of the site where surface water is to be free from potential contamination;

- The surface water drainage scheme proposals remove all surface run-off from clean site areas, for discharge into the fire water holding lagoon, where a controlled off-site outfall is provided as an overflow system, preventing the overfilling of the line pond during periods of heavy rainfall; the system is designed however with a testing regime to prevent any potential contamination being discharged, this would be part of the plants permit and operating procedures. Any water found to be contaminated would be pumped back into the AD process, along with a lot of the water captured, this would also be pumped back into the process.

- All clean roof water is to be discharged via gutters and downpipes into gravity pipes, out-falling to the lined fire water holding lagoon;

- Since the previous application the Environment agency has updated is surface water flooding maps and this has resulted in the requirements for there to be a 300mm deep surface water swale constructed around the Northern and Eastern boundary to direct any flood waters away from the site as mitigation. A bund will run along the western, north-western, south-eastern, and eastern boundary of the site. This along with the presence of a swale will help redirect the water around the proposal;

- A surface water perforated filter drain pipe is installed around the entire external containment bund perimeter wall, linked by a series of inspection chambers and discharging to the clean system fire water holding lagoon, via a pumped surface water connection. The perimeter filter drain is specified to relieve any hydrostatic pressure from the external wall face. The contractor designed internal secondary containment structure drainage strategy ensures all surface run-off liquid within bund cannot be discharged until it has been tested and is certified as clean. A series of sealed MDPE gully chambers encased in concrete are proposed within the containment floor at low points, reducing the volume of standing water on the concrete floor surface during rainfall periods. The chambers are connected via a series of plastic MDPE welded pipes, flowing to a final sump location where the water is to be manually tested by the site operators prior to pumping out of the bund into the clean or dirty water systems. If the containment sump water is tested as 'clean', the liquid will be pumped over the containment wall to the north, with the pumped surface water pipework routed directly to the proposed lined fire water holding pond in the northwest corner of the site. Should the containment bund sump liquid be tested as 'dirty', the water will be pumped directly back into the Anaerobic Digestion process tanks within the containment bund;

- The lined fire water holding lagoon in the northwest corner of the site provides a means of water storage for firefighting. The lined pond is the final outfall location for the pumped containment bund clean external filter drains and internal floor sumps, in addition to the gravity roof drainage from the manure store;

- The silage clamps are designed to take all the leachate water into the sealed drainage system, which end in a below ground double contained tank and this is then continually pumped back into the process tanks;

- The yard area is all treated as dirty water in the same way as the clamps, so that all water collected is processed;

- All the relevant standards and systems referenced have checking and yearly maintenance requirements, to ensure continual compliance with the systems and processes; this is regulated by the Environment Agency on both permitted and unpermitted facilities. A detailed Maintenance Regime Schedule is included;

- The system and process has been designed by Plandescil Ltd on numerous AD plants across the UK and is a tried and tested methodology. The team involved have over 15 years of experience in designing and evolving the UK market of AD plants for the processes they are involved with. This includes permitted sites and retrospect remediation of sites, working closely with the Environment Agency in all circumstances to ensure the legislation is complied with and designed to.

Lagoon A (North)

4.16 The FRA evaluates the flood risk to the proposed site of Lagoon A, in addition to considering the impact that the proposal will have on the surrounding area. The FRA demonstrates that the proposed development is located in fluvial and tidal Flood Zone 1, is at very low risk of flooding from surface water, and reservoirs, and low risk of groundwater flooding.

Lagoon B (West)

4.17 The FRA evaluates the flood risk to the proposed site of Lagoon B, in addition to considering the impact that the proposal will have on the surrounding area. The FRA demonstrates that that the proposed development is located in fluvial and tidal Flood Zone 1 and is at very low risk of flooding reservoirs. This site is shown to be at limited risk of surface water flooding during the extreme flood event, and low risk of groundwater flooding.

4.18 Consequently, the proposals will accord with the relevant provisions of the NPPF and policies of the Development Plan regarding flood risk and surface water drainage.

Landscape and Visual Impact

4.19 Relevant polices concerned with the protection of the landscape and visual impact include: the NPPF; JCS policy 1 (Addressing Climate Change and Protecting Environmental Assets), together with Development Management Policies (DMP) Plan policies DM1.4 (Environmental Quality and Local Distinctiveness), DM4.5 (Landscape Character and River Valleys), DM4.8 (Protection of Trees and Hedgerows), and DM4.1 (Renewable Energy).

4.20 The site (both main AD plant and lagoons) is not located in any protected or designated landscape. A Landscape and Appraisal has been undertaken in relation to both the main AD plant site, and the satellite digestate storage lagoons. The appraisals address the importance of any existing landscape features on the site, any historical features, and neighbours affected, and the potential zone of visual influence of the proposals. The assessment included both a desktop exercise and a thorough site assessment to determine the potential viewpoints and extent of visibility. They conclude that:

Main AD Plant Site

- The aim of the appraisal is to determine the impacts on both the local environment and also the wider landscape character, with particular reference to the South Norfolk Landscape Character Assessment, in relation to the scheme already approved (2015/0595);

- Deal Farm is located in a gentle valley, within a somewhat open and denuded landscape of large arable fields and fragmented hedgerow and boundary trees. There are thus expansive views from the higher land;

- When crop height permits, there are views toward Deal Farm from Stone Lane to the north, from where the farm complex presents itself as a typical sprawling farm complex of barns, silos and older residential farmhouse buildings. The new development is an integral part of this complex. The two domes are substantial and their clean bold lines and light grey finish can stand out in the landscape. However, the impact is very weather dependent, with them being much more recessive when seen against an overcast sky;

- Despite the general openness of the landscape, the overall topography and local screening by trees, hedgerow and other features results in the site being better screened from viewers further north than Stone Lane, and from viewers to the south. Extensive trees around Villa Farm adjacent to the proposed development provide a significant screen. From this direction, the development is also seen behind the existing farm complex, thus visually appearing as an integral part of that farm complex.

- The site is most noticeable from Common Road, when in close proximity, owing to the lack of hedgerow (which shall be mitigated by planting of trees and hedgerow); however, even here it is seen as part of the existing pole barn, piggery and farm complex, with any ground-level activity screened by the new earth bund;

- Whilst the development is a prominent feature it is similar in character to the scheme already approved, which itself would have been an imposing feature in the landscape for the same reasons. It is also important to note that the original tanks would also have required tall lightning poles similar to those on the current scheme, even though they were not shown on the 2015 planning application drawings;

- It is for viewers to the east and north-east and in close proximity, and of greater visual impact than the original approved scheme from this direction. However, it is considered that the impact from more western viewpoints is lower than the original proposals. The current scheme has thus transferred the greatest impact from west to east, as well as reducing the impact on the nearby listed building;

- Landscape mitigation, involving field and roadside tree and hedgerow planting, will provide longer-term landscape structure and ameliorate the impact of the proposals. The landscape has become very fragmented, with most historic hedgerows and boundary trees having been lost in past decades;

- In view of the relative lack of lighting in the area and the consequent dark night skies here, it is therefore recommended that external lighting should

kept to the absolute minimum and that any outdoor lights associated with this proposed development should be (in accordance with CPRE recommendations):

- fully shielded (enclosed in full cut-off flat glass fitments);
- directed downwards (mounted horizontally to the ground and not tilted upwards);
- switched on only when needed (no dusk to dawn lamps);
- white light low-energy lamps (LED) and not orange or pink sodium sources.

- In terms of summarising the potential impacts on the key landscape and townscape elements of this area, these are set out in the table (below). The impact has been coded in three levels:
  - Red: Potential negative impacts for which it might not be possible to completely mitigate;
  - Amber: Potential impacts which could be mitigated by sensitive design;
  - Green: Positive or no noticeable impacts.

LCA Development Considerations	Impact of proposed development
Consider potential effects of potential large-scale developments (for example relating to airfield sites); Any development in the area must respect the character of the Great Moulton Plateau Farmland Character Area; maintain the essentially open, unsettled character	The site is located within a valley and amongst existing farm development, having limited impact on open views. Activity is consistent with agricultural usage and farm diversification
Conserve the Great Moulton Plateau Farmland with its expansive skies, created by its elevated landform, dominance of arable farming and lack of settlement strong sense of openness, long views and expansive skies and open views, particularly from the edge of the plateau	The site is located within a valley and amongst existing farm development, having limited impact on open views. Activity is consistent with agricultural usage and farm diversification
Conserve mature hedgerow oaks and hedgerow boundaries where they remain	No impact on any hedgerow or trees. Landscape mitigation will enhance these assets
Amenity, noise and quality of life: Minimising artificial light	Ensure that lighting is kept to a minimum and accords with CPRE advice
Consider opportunities to reinstate hedgerows where they have been lost, and particularly along roadsides	Landscape mitigation includes landscaping which will enhance these assets
Consider impact on key views from adjoining character areas.	The site is set at a relatively low elevation, with higher land to the west and north, providing some screening.
Impact on designated heritage elements: listed buildings, ancient monuments, etc.	Potential impact on listed Deal Farmhouse nearby. Setting is already affected by existing farm activity. Tree planting will help form visual separation between the farmhouse and the development.
Impact on public rights of way	No impact on such assets
Impact on neighbouring residential amenity	Potential mid-distant visual impact on neighbouring residences which can be mitigated through sensitive design

4.21 Landscape mitigation proposals are included in the Appraisal, and reproduced at Appendix D of this statement. In summary, the appraisal notes:

- In line with the recommendations of the South Norfolk Landscape Character Assessment, the primary aim of the proposals is to provide new hedgerow and trees to ameliorate the impact of the new development and also to reinstate some of the landscape structure which has been lost in the past century. Thus, the following lengths of hedgerow and trees are proposed:
    - 775 metres along Kenninghall Road and around the northern perimeter of the site;
    - 293 metres along the foot of the bunding on the eastern part of the site;
    - 454 metres along Common Road to the east of the site;
    - Additional tree planting of English Oak and Wild Service Tree North-east of Deal Farmhouse to provide long-term screening and enhancement to the landscape setting of the listed farmhouse.

<u>Digestate Storage Lagoons Sites</u>

- It is noted that it is an intensively farmed arable landscape with a heavily degraded landscape structure. Relatively few of the original hedgerows and boundary trees remain, resulting in open views where any new development is likely to be highly visible. An assessment of the landscape sensitivity of the two sites was based on four main criteria: Scale and complexity of landform; Scale and complexity of land use; Visual exposure; Development and activity.
- This assessment concluded that the sensitivity of the two lagoon sites is considered to be medium to high. In general, this suggests that thresholds for change are relatively low and development can be accommodated only in limited situations, providing it has regard to the setting and form of existing settlement and the character and the sensitivity of adjacent landscape character areas. Thus, despite, or perhaps because of, the degraded nature of the landscape the proposed lagoons are likely to initially have a noticeable impact and appear as noticeably man-made features in the landscape.
- However, landscape mitigation, comprising boundary hedgerow and tree planting to link up with existing hedgerows will rapidly provide positive enhancement to the landscape character and structure.
- The desktop studies, modelling and field survey helped to identify viewpoints that are regarded to be representative of the range of views and receptors around the site. The selected viewpoints were not intended to cover every single possible view but are intended to be representative of a range of receptor types e.g., residents, walkers on public footpaths and road users, from different directions and distances from the site.
- The field assessment and digital modelling have demonstrated that, despite the elevated and exposed position, there is likely to be a relatively low long-term impact on visual amenity due to the following factors:
    - The small vertical scale of the proposed development in relation to its surroundings.

  - Viewing the new development against the backdrop of existing trees and hedgerow.
  - Scope of effective landscape mitigation which will positively enhance the local landscape structure

- Residential receptors are considered to be highly sensitive receptors. Both sites are located well way from residential properties, which might have direct views of the proposed lagoons. The impact in residential properties is therefore considered to be negligible.

- Users of minor roads are considered to be low to medium sensitivity receptors. The Northern lagoon is located to the east of Common Road near Deal Farm, and there will be passing views of the proposed development, particularly as one travels downhill from the north, with the lagoon on the left. Construction activity will be prominent and noticeable this close to the road, although once constructed, the lagoon will have grass banks to soften the visual impact and there will be no visible moving machinery.

- There will be views toward the South lagoon from Common Road and Lady's Lane, where the lagoon is located mid-way between the two roads. It will be seen close to the existing mix of farm buildings associated with The Oaks. Activity will be less noticeable than with the northern lagoon due to the effects of distance and the proximity to existing activity on the adjacent farm. In the medium to long term, landscape mitigation will screen the lagoons and provide positive landscape enhancement the area.

- Users of public rights of way are considered to be high sensitivity receptors. Neither lagoon will directly affect any public rights of way.

- Given the relatively low level of the lagoons and earth bank construction, it is considered that landscape mitigation would be very effective in assimilating the lagoon features into the landscape. Suitable mitigation, as outlined here, will also provide long-term benefits in reinforcing the landscape structure of this landscape character area which has been heavily degraded in past decades by intensive agricultural practices and the consequent loss of hedgerows, trees and biodiversity. It is recommended that a hedge, comprising the following species, is planted around the perimeter of the site:

  - 55% Hawthorn, Crataegus monogyna;
  - 20% Blackthorn, Prunus spinsoa;
  - 10% Field Maple, Acer campestre;
  - 10% Guelder Rose, Viburnum opulus;
  - 2.5% Alder Buckthorn, Frangula alnus;
  - 2.5% Holly, Ilex aquifolium.

- Additional planting around the perimeter should include the above species, with 40% of the planting to include English Oak (Quercus robur), Wild Service Tree (Sorbus torminalis), Hazel, (Corylus avellana), Rowan (Corbus aucuparia) and Crab Apple (Malus sylvestris).

4.22 The Committee report in July 2015 – in reporting the permitted scheme (ref. 2015/0595) – noted *"… although the proposal will be visible in the landscape setting it would not result in any significant visual harm to the rural landscape"*. As with the development plan in 2015, the current development plan continues to seek the protection of the countryside and landscape character, via Policy 1 of the JCS and Policy DM4.5 of the Local Plan. However, the current proposals - whilst amended and reconfigured – provide no materially significant change overall, to the visual impact of development in landscape terms, particularly in the context of the existing agricultural buildings immediately adjacent. The amended proposals therefore continue to accord with the relevant provisions of the development plan insofar as they relate to landscape impact and protection of the countryside, especially when having regard to the extensive mitigation (new planting) proposed.

4.23 It is not therefore considered that the development will have a significant, overall impact upon the landscape character of the area as to conflict with relevant national or Development Plan policies concerning design, the protection of the countryside and landscape impact. [Policy DM4.1 states that permission will be granted where there are **no significant adverse effects or where any adverse effects are outweighed by the benefits** (our emphasis)]**.**

Traffic and Transport

4.24 Relevant policy on traffic and transport is set out in: the NPPF; JCS policy 6 (access and Transportation) and Development Management Policies (DMP) Plan policies DM3.10 (Promotion of Sustainable Transport) and DM3.11 (Road Safety and the Free Flow of Traffic). These policies' primary objective is to promote more sustainable transport and to ensure that development proposals are capable of being served by safe access to the highway network, without detriment to the amenity or character of the area. Paragraph 111 of the NPPF advises: *"Development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

4.25 Current agricultural vehicles are relatively unregulated in terms of routing and speeds through built up areas. In the event of planning permission being granted, the imposition of conditions will have a material benefit on road safety, as plant users will be limited to the routes, speeds and times of day that are agreed between the applicant, South Norfolk and Norfolk County Council (as Highway Authority).

4.26 It is also worth noting that the present farming practice is to centralise the farming operation at Deal Farm and The Oaks, with grain stores, straw stacks, beet pads, muck pads and maize field clamps at both sites on Kenninghall Road. The various products/ by-products etc. are then bulked and transported out of area, through Bressingham, Fersfield and Shelfanger to the following:

- Beet – is transported via the A1066 to either Bury St Edmunds/ Wissington;
- Grain – is transported via the A1066 to either Kenninghall or Burston mills.

4.27 Chemical fertilisers, mucks and slurries are then brought in from surrounding areas through the villages.

4.28 By approving the AD Plant at Deal Farm, much of these movements will be retained within and around the 1.5km – 2km radius distance from which the plant is in relation to the three (main) nearby villages; in effect, reducing the traffic impact upon them.

4.29 A Transport Statement accompanies the application. It advises/concludes the following:

- Analysis of RG Aves vehicle movements over the last 5 years shows that the average number of movements associated with the crop and waste that would be processed by the AD plant is 2072 movements per annum;
- The projected vehicle movements when the AD plant is operational is 1636 movements per annum. The reduction in vehicle movements is associated with the:
    - Avoidance of double handling when currently transporting crops and straw off the farm;
    - Avoidance of taking pig manure off-site;
    - Transferring liquid digestate via pipeline to lagoons;
    - Avoidance of the use of chemical fertilisers.
- This will result in a more balanced and predictable set of transport movements. Whilst a Transport Management Plan will lead to greater control over vehicle timings, routes and speeds – something that is not as restrictive under the current operation. In addition, given that a large proportion of existing movements of slurries and manures are not monitored on the local road network, the proposal adds a safety factor to the roads as the larger HGVs - where they are used - are better regulated than farm vehicles.
- In addition to the 2015 scheme, the Applicant is proposing to add in CO2 recovery, further enhancing the environmental credibility of the proposals with the reduction in the carbon footprint of the vehicles' journeys and double handing. The CO2 recovery would be the equivalent of removing approximately 13,800,000 car road miles from UK roads each year;
- The Council has the right to restrict certain routes and roads from being part of the proposal and they may wish to condition this;

4.30 The Transport Statement demonstrates that the overall vehicle movements to/from the proposed facility would not be material in the context of existing vehicles on the local highway network, especially when considering that these vehicles already operate on that network through farming activity. Having regard to the above, it is considered that the proposed development is satisfactory from a traffic and highway viewpoint. The proposed development will have no material adverse impact upon the local highway system (movement of feed stocks, biofertiliser and CO^2) or any increased highway dangers to road users or pedestrians. Consequently, the proposals accord with the relevant provisions of the NPPF and policies of the Development Plan regarding sustainable transport and highway safety.

Noise

4.31 The NPPF seeks to minimise noise impacts. Development Management Policies (DMP) Plan policies DM3.13 (Amenity, Noise and Quality of Life) and DM3.14 (Pollution, Health and Safety) are concerned with the protection of amenity, which includes noise.

4.32 A Noise Impact Assessment accompanies the application, undertaken to identify the key sources of noise associated with operation of the Anaerobic Digestion Facility, which may adversely impact upon existing residential amenity from a noise perspective.

Accordingly, this Assessment was completed with due regard to the National Planning Policy Framework and its associated PPG in addition to appropriate British Standards and guidance documents relevant to the assessment of noise impacts.

4.33 This Assessment relied upon a background sound survey completed in a location considered to be representative of the sound climate at the closest residential dwelling to the facility, as well as the manufacture supplied noise data for the fixed plant items, and library data at a similar site for the mobile plant operations.

4.34 The Assessment has shown that during the daytime the rated level of noise falls below the criteria noise level for all residential dwellings and BS4142:2014+A1:2019 provides the following advice for this outcome:

'Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.'

4.35 During the night-time the internal level of noise falls below the 30dB internal noise criteria level at the closest receptor with a partially open window.

4.36 The predicted level of noise from the Site is sufficiently low at the closest residential dwellings to accord with the 'No Observed Adverse Effect Level' as detailed in the PPG and as such noise should not be deemed to be a determining factor in the granting of planning permission for this Site.

4.37 The 2 no. digestate lagoons are located a significant distance from any residential dwellings; it should be noted that there will be no road traffic vehicles that will access the lagoons, other than agricultural vehicles via the surrounding fields. Given that the existing soundscape is comprised, in part, by agricultural vehicle noise, it is considered that noise from any agricultural vehicles accessing the lagoons will not be discernible over and above the existing situation.

4.38 Consequently, the development proposals accord with the relevant provisions of the NPPF and policies of the Development Plan.

Odour

4.39 The NPPF and Development Management Policies (DMP) Plan policies DM3.13 (Amenity, Noise and Quality of Life) and DM3.14 (Pollution, Health and Safety) are concerned with the protection of amenity, which will include odour.

4.40 During the operation of the plant there is the potential for impacts at sensitive locations due to odour emissions from a number of sources at the plant. An Odour Assessment was therefore undertaken to consider effects in the vicinity of the site. report includes the assessment of off-site storage lagoons, collection points and an on-site digestate clamp. The Odour Assessment has been updated from the previous (2021/2788) application to address matters raised by the Council's Environmental Protection Officer in relation to liquid and solid digestate odour emissions, and 'worst-case' emissions from manure. It concludes:

- Potential odour emissions were defined based on the proposed plant operation and a review of literature and emissions used at similar facilities. Where appropriate robust assumptions were made to give an increased confidence in the results.
- These were represented within a dispersion model produced using ADMS 5 and using 5 years' meteorological data. Impacts at sensitive receptor locations in the

vicinity of the site were quantified, the maximum predicted results compared with the appropriate odour benchmark level.
- The proposals will result in the removal or control of other odour sources in the vicinity of the site and the closest sensitive receptors. These potential improvements have not been included within the assessment to provide a robust assessment.
- Predicted odour concentrations were below the relevant benchmark level of 3.0 ouE/m3 at all sensitive receptors in the vicinity of the site for all modelling years including Deal Farm. This receptor is considered as a low sensitivity receptor, within the curtilage of the AD facility.
- In addition, using the IAQM guidance3 significance criteria, worst case impacts were slight at 2 receptors and negligible at all other representative sensitive receptors. In addition, the 2 receptors where the impacts were considered as 'slight' would benefit from the removal of closer odour sources, namely current Deal Farm manure muck pads and silage piles.
- As such, given the robust assumptions made for odour emissions, the overall potential for odour impacts generated by the AD facility can be considered as not significant, and the AD facility is therefore not considered to represent a constraint to planning permission with regard to odour.

4.41 Consequently, the development proposals accord with the relevant provisions of the NPPF and policies of the Development Plan.

Air Quality

4.42 The NPPF and Development Management Policies (DMP) Plan policies DM3.13 (Amenity, Noise and Quality of Life) and DM3.14 (Pollution, Health and Safety) are concerned with the protection of amenity, which will include air quality.

4.43 NOx, SO2, TOC and NH3 emissions associated with the AD facility have the potential to cause increases in ground level pollutant concentrations and deposition rates. As such, an Air Quality Assessment was required to assess impacts at sensitive locations in the vicinity of the site. It concludes:

- Modelling was based on the plant emitting the maximum permitted pollutant concentration for a full calendar year, as well the use of the maximum concentrations over 5 assessment years. Concurrent use of the CHP and Biogas Boiler was used in the model and ensured a robust assessment which provides an overestimation of actual operations. In practice the boiler will only operate when the CHP engine is not operating and the containing and drying effect of the manure storage building will reduce emissions;
- Ammonia emissions were calculated based on fresh manure import proportions and included additional measures of containment and abatement controls on the site;
- In combination NH3 effects from recent permitted developments were included in the background concentrations in the assessment for NH3 concentrations, N deposition and acidification.
- Following analysis of the results the relevant concentration related EQS was not exceeded at any location within the assessment extents at human or ecological receptors. The PCs from the development alone did not exceed the relevant EA criteria human and ecological impacts and are screened out as insignificant and there is no requirement for further assessment;
- In addition, it should also be considered that a proportion of the Proposed Development's contributions will already be accounted for in background levels and loads as they are derived from locally sourced manures and feedstocks and that

robust emissions assumptions have been used in this assessment. This assessment presents the maximum concentrations using 5 years of meteorological data;

- As such, given the assessment and proposed control measures, all impacts on human and ecological receptors from the proposed development are considered to be not significant.

4.44 Consequently, the development proposals accord with the relevant provisions of the NPPF and policies of the Development Plan.

Historic Environment (Heritage Statement)

4.45 The policy context for which is provided by the NPPF, Policy 1 of the JCS (addressing Climate Change and Protecting Environmental Assets) and Policy DM4.10 (Heritage Assets) of the Local Plan. These place considerable importance to the desirability of preserving listed buildings, their settings and the character and appearance of Conservation Areas.

4.46 The Planning (Listed Buildings and Conservation Areas) Act 1990 states that in considering applications for development which affects a heritage asset or its setting, local planning authorities shall have special regard to the desirability of preserving the building or its setting.

4.47 The National Planning Policy Framework (NPPF) expands on the 1990 Act. It identifies protection and enhancement of the historic environment as an important element of sustainable development and establishes a presumption in favour of sustainable development in the planning system. The NPPF also states that the significance of listed buildings and conservation areas can be harmed or lost by alteration to them or by development in their setting, and that the conservation of heritage assets is a core principle of the planning system.

4.48 Paragraph 194 of the NPPF requires an applicant to *"describe the significance of any heritage assets affected, including any contribution made by their setting"*. Paragraph 197 requires local planning authorities, in determining applications to take account of *"the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation"*.

Designated Heritage Assets

4.49 The Parish of Bressingham incorporates several scattered hamlets around a number of Commons. It is a long-settled area with evidence of Neolithic, Saxon and Roman settlement. St. Andrew's Church (2km distant) in Fersfield dates from the 14th and 15th Centuries; as does St. John the Baptist Church in Bressingham (2.9km distant). Close to the Church is the medieval guildhall of St. John the Baptist, built in the early 16th Century.

4.50 There are a number of listed buildings within 1km of the main site. The nearest is Deal Farmhouse (Grade II), which is to the north-west corner of the AD plant site. The main view of the Farmhouse is from the west but this will not be materially affected by the development proposed as it will be partially screened by the existing copse of mature trees to the east of the Farmhouse. The setting of the Farmhouse will remain unaltered, essentially as part of a cluster of farm buildings and infrastructure.

4.51 Poplar Farmhouse (Grade II) is located on Stone Lane, some 600m north-west of the AD plant site, and is surrounded by thick vegetation and trees. There will be no impact from the proposals on the setting of the listed building.

4.52 Lodge Farmhouse, Algar Lane (Grade II) is located 1km to the south-west of the main site. It is set among farm buildings and mature vegetation, and there is no visual interrelationship with the site or its development.

4.53 Algar House, Algar Lane (Grade II) is located some 1km from the site, set in dense woodland and with no visual interrelationship with the site or its development.

4.54 Row Farmhouse is 1.3km from the site; White Gates, Common Road is just over 1km to the south of the site; Stone Lane Farmhouse, Stone Lane is 500m to the north-west; Old Boyland Hall is 800m to the north. Given the distance, intervening land form/use, and/or vegetation, there is no visual interrelationship between these properties and the site or its development.

4.55 In considering the earlier (withdrawn) S.73 application (ref. 2021/2036), the Council's Senior Heritage and Design officer advised:

"To the west is the grade II original farmhouse. There are already significant modern agricultural buildings to the east of the farmhouse which are already large in scale and modern/contemporary in terms of materials. That is however to be expected with the setting of the farmhouse now a more modern working farm in terms of context.

The most impact from the heritage point of view will be the aerobic digesters. These are now to be set further away from the listed building so less impact and less, if any, harm, with the large low lying clamp areas now situated in between.

The manure shed is smaller in scale and is also some distance from the farmhouse. I note that it is square plan and flat roof – within the quite wide views which the photomontages show also include the listed farmhouse, it would be better of this was a more traditional pitched roof shape.

It is noted from the previous proposal that planting was proposed around the pond to the east of the listed building – although the listed building was not shown for some reason on the plan. This area is now outside the red line. It would be mitigation if planting was proposed around this area to visually separate the listed building from the development."

4.56 Having regard to the above, this application includes additional planting as requested. In light of the above assessment, it is our belief that the proposed development would preserve both the character and setting of any designated heritage assets (listed buildings). The 'inter-visibility' of the proposed development in relation to those heritage assets is minor or non-existent – given the intervening/existing development and /or established vegetation - and thus the development would cause no harm to their setting. Paragraph 196 of the NPPF notes that *"Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal…".* It is our contention that the development proposals fall some significant distance short of "less than substantial harm"; indeed, we contend that, given the relationship between them – intervening development (existing farm structures and operational farm) and the proposed additional of new landscaping - there is no material harm at all to the significance of the heritage assets; and that the proposed development would preserve both their character and setting. Notwithstanding, if the Council were to conclude 'less than substantial harm', then it is clear that the public benefits of the proposal carry significant merit in any 'weighing' exercise in this regard.

Archaeology

4.57 An Archaeological Desk-based Assessment was undertaken by Wardell Armstrong, and accompanies the application. It covers the areas of the AD plant site and the two proposed storage lagoons. Based on the known evidence, the three sites generally have only a low archaeological potential for all periods, with no evidence to suggest that any of the sites has been developed. The Northern Lagoon Site has a moderate potential for further Roman artefactual evidence consistent with existing metal detecting finds from the surrounding areas. The AD Plant has a moderate potential for medieval artefactual evidence. The West Lagoon Site has a moderate potential for early modern remains associated with the small farm complex, which is depicted on the 1841 tithe map and Ordnance Survey maps dating to 1884 and 1905.

4.58 The application proposals therefore accord in full with the relevant provisions of the NPPF and policies of the Development Plan, insofar as they concern the protection and conservation of the historic environment (including designated heritage assets and archaeology).

Ecology and Biodiversity

4.59 There are a range of policy documents that seek to ensure adequate protection of ecology and biodiversity in considering development proposals. Relevant policies include the NPPF, JCS Policy 1 (Addressing Climate Change and Protecting Environmental Assets), and Development Management Policies (DMP) Plan policies DM1.4 (Environmental Quality and Local Distinctiveness), DM3.8 (Design Principles applying to all development), and DM4.1 (Renewable Energy).

4.60 An Ecological Impact Assessment accompanies the application. It concludes as follows:

- The purpose of this report is to provide biodiversity information identifying ecological features, confirmed impacts/effect, and proportionate avoidance/mitigation/compensation strategies, followed by enhancements. This information will support the planning application and assist the Planning Officer in making an informed decision.
- The following key ecological features and associated recommendations have been identified:
    - Waveney and Little Ouse Valley Fens SAC, Redgrave and South Lopham Fens Ramsar and SSSI, Shelfanger Meadows SSSI and Impact Risk Zone (within zone of influence of designated sites) – Further Air Quality and Nutrient Neutrality assessments undertaken to identify potential significant impacts to statutory designated sites and associated ecological features [see above]. Detailed assessment presented in separate Habitat Regulations Assessment Stage 1 Screening report [see below];
    - Bats (suitable habitats in surrounding area) – Sensitive lighting strategy;
    - Water Vole (record in area, limited potential within adjacent pond) – Appropriate buffer around pond;
    - Breeding Birds (limited suitable nesting habitats) – Clearance outside nesting period r check by Ecological Clerk of Works (ECoW);
    - Priority Species (limited suitable habitats) – Clearance under supervision of ECoW.
- Suitable mitigation measures can be incorporated into the proposed application to avoid/mitigate/compensate any potential impacts to ecological features and to demonstrate 'no biodiversity net loss' in accordance with NPPF and local planning policy;

- As such, no significant residual impact can be expected which would prevent determination of a planning application;
- Additionally, the site re-development allows the opportunity to provide local biodiversity enhancements to demonstrate a 'biodiversity net gain' through:
    - 2x traditional wooden bird nesting boxes (or similar product) will be installed upon mature trees alongside the pond. These will be located at least 6ft from ground level, on an east/north facing aspect, and situated away from human/noise/lighting disturbance. They will provide additional nesting opportunities for common bird species in the local area;
    - Additional hedgerows and trees will be/were historically planted throughout surrounding habitats to provide additional green infrastructure connection. A screening bund will also be created along the southern and eastern boundaries. These will also provide additional nesting opportunities/ cover for birds and priority species.

- The Assessment report concludes that, if the outlined mitigation measures are implemented in full, then no significant residual impact could be expected, and the proposed application (AD plant and lagoons) will result in 'no net loss in biodiversity' whilst providing opportunities for 'biodiversity net gain' in accordance with NPPF and Local Planning Policy.

4.61 In response to advice offered by Natural England during the course of the previous application, the current application is also supported by Habitat Regulations Assessment Stage 1 Screening/Stage 2 Appropriate Assessment. It concludes:

- Two European designated sites have been identified within a potential zone of influence of the proposed development and all qualifying features have been assessed. Through assessment of the technical information available, the Stage 1 Screening identified likely significant effects in relation to air quality;
- Subsequently, Stage 2 AA information has been provided which demonstrates that appropriate avoidance and mitigation measures can be incorporated resulting in no significant residual effect;
- It is anticipated that the provided information is sufficient to demonstrate that the requirements of Regulations 63 and 64 of the Habitats Regulations have been fully considered. Through implementation and installation of the proposed air quality emission mitigation measures, it is concluded that there will be no adverse impacts on the qualifying features of the protected European designated sites, and no requirement to progress to Stage 3 of the Habitat Regulations Assessment (i.e., Derogations: 3 legal tests). The information and assessment presented will allow the competent authority to undertake an HRA Screening and Appropriate Assessment exercise and reach the same conclusion as detailed in the report.

4.62 In March 2022, Natural England issued advice to all Councils in Norfolk about the wider impact of phosphates and nitrates on water quality within the catchment areas of the River Wensum and The Broads (Special Areas of Conservation – SAC). In summary, the advice requires that development proposals demonstrate that they would not add phosphates/nitrates such that the SACs are not adversely affected. The application site sits outside the catchment area but – for completeness – the application is supported by a Nutrient Neutrality Note prepared by Enzygo Environmental Consultants, which concludes that there is no hydrological or hydrogeological pathway for any nutrient emitted to ground from the proposed development to designated sites of concern to Natural England, and thus no Likely Significant Effect.

4.63 Consequently, the development proposals accord with the relevant provisions of the NPPF and policies of the Development Plan insofar as they relate to ecological protection

and biodiversity (including net gain, which amounts to 34.03% (see accompanying Ecological Impact Assessment and Biometric).

Employment and Agricultural Diversification

4.64 Key relevant policies on employment and agricultural diversification are set out in: the NPPF, JCS policy 5 (The Economy) and Development Management Policies (DMP) Plan policies DM2.1 (Employment and Business Development) and DM4.1 (Renewable Energy)

4.65 The NPPF states that planning policies and decisions should enable (inter alia); *"the sustainable growth and expansion of all types of businesses in rural areas…." and "the development and diversification of agricultural and other land-based rural businesses."* (Paragraph 84). The application proposes rural/agricultural diversification through the development of renewable energy, enhancing the rural economy and agricultural viability. The AD plant would not be operated by the farmer/s but the viability of the farm enterprise would be supported by direct capital investment and facilitating the sustainable use of purpose grown crops and the disposal of agricultural waste, and the creation of renewable energy therefrom. The proposed development would create direct and indirect employment opportunities, short term and long term, as well as providing for sustainable agricultural diversification.

5. The Planning Balance

5.1 At the heart of the planning balance is Section 38(6) of the Planning and Compulsory Purchase Act 2004; which requires that, if regard is to be had to the Development Plan for the purpose of any determination to be made under the Planning Acts, determination must be made in accordance with the Plan unless material considerations indicate otherwise.

5.2 Policy DM 4.1 (Renewable Energy) states that renewable energy generating development will be supported and considered in the context of sustainable development and climate change, taking account of the wide environmental, social and economic benefits (public benefits) of renewable energy gain. In essence, Policy DM4.1 recognises the balance to be struck in assessing such renewable energy proposals: the environmental benefit of the proposal must be balanced against the environmental harm that it would cause. (Paragraph 18a-020-20140306 of the Planning Practice Guidance elaborates on what is meant by 'public benefits' in this context).

5.3 National policy on renewable energy is set out in the NPPF. The NPPF supports the provision of renewable energy if the impacts are, or can be made, acceptable. In terms of environmental benefits, the proposed AD plant would produce up to 39,000MWh of renewable energy (biomethane) from local biomass, sufficient energy based on an average household consumption of 12 MWh/annum) to serve around 3,250 homes. Total CO_2 emissions saved (based upon a CO^2 output from burning gas of 0.185 kg/kWh) would be 7,215,000 kg/CO_2 per annum. The scheme would remove the need locally for heaps and field clamps that are known to be the main source of agricultural diffuse pollution (by relocating them on to the sealed drained surfaces of the AD Plant). The scheme would remove the equivalent of 13,800,000 road car miles in carbon capture each year. The scheme would replace nearly all of RG Aves' reliance of imported chemical fertilisers. The scheme would produce renewable CO2 for industrial use (agriculture, construction, food processing, etc.). The proposed renewable energy development would also contribute to farm diversification, and soil conditioning, and would create direct and indirect economic benefits to the locality during the construction

phase. Significant local benefits will be created to support the local rural economy, in line with the provisions of the NPPF (paragraph 84).

5.4 In terms of environmental harm the proposed AD plant would, given its location in the countryside, have some noticeable visual impact upon the local landscape from some perspectives, and this is evidenced in the accompanying Landscape and Visual Appraisals. However, the proposed development on the main AD plant site part - whilst visually imposing - is deemed to be of a similar character to the scheme approved in 2015, which itself would have been a feature in the landscape for the same reasons. Landscape mitigation, involving field and roadside trees and hedgerow planting, will provide longer-term landscape structure and ameliorate the impact of the proposals. The lagoon proposals will have some limited impact in landscape terms, but effective landscaping - as proposed – will mitigate this and in time positively enhance the local landscape structure.

5.5 The proposed AD plant would result in no harm to the setting and significance of designated heritage assets. Considerable weight and importance are given to the duty imposed by Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990, and therefore to the strong presumption in favour of the desirability of the preservation of heritage assets.

5.6 The balancing exercise to be conducted requires planning judgement to be exercised. Setting aside other considerations, the environmental benefits of the AD plant development, and therefore of exploiting renewable resources in the national interest, demonstrably outweighs harm that would be caused to the character of the landscape. Policy DM 4.1 (Renewable Energy) states that that permission will be granted "where there are no significant adverse effects or where any adverse effects are outweighed by the benefits." In light of all the above, the applicants contend that the 'benchmark of "significant adverse effects" is not reached by these proposals, and that in any event the proposed mitigation will address some of the visual impacts, and which can be controlled by condition. The planning balance is therefore in favour of the proposed AD plant development, which thus accords with Local Plan Policy DM 4.1, and other relevant policies of the Development Plan.

5.7 In any event, even if it was considered contrary to the assessment above in this planning statement and that there was a conflict with the Development Plan, the benefits of the proposals quite clearly outweigh such conflict, given the environmental and economic benefits of this development.

6. Summary and Conclusions

6.1 The application is submitted on behalf of Deal Farm Biogas Ltd. in support of a planning application for the construction of an Anaerobic Digestion facility (part retrospective), comprising: the construction of an Anaerobic Digestion facility (part retrospective), comprising: 1 no. digester tank and 1 no. secondary digester/digestate storage tank, silage clamps; liquid and dry feed system; digestate separation, handling and pasteurization; biogas upgrading and mains gas-grid connection; carbon capture; CHP; agricultural building; office buildings; weighbridge; 2 no. covered digestate storage lagoons; and associated plant, vehicular accesses, roads and landscaping (including earth bunds) on land at Deal Farm, Kenninghall Road, Bressingham.

6.2 The proposed facility will convert locally sourced biomass (crops and farm waste) into biogas, which will be injected directly into the gas grid. In addition, an odourless organic biofertiliser and soil improver will be produced from the digestion process, which will be returned to local farms as a replacement for artificial fertilisers and to improve soil

quality. The site has been granted planning permission on three separate occasions; the principle of development is therefore established on the main site.

6.3 The development is proposed within the context of Government policy in respect of the need to address the increasingly urgent problem of climate change, the promotion of renewable energy, and the growth and diversification of the rural economy. The site location and development proposals have been carefully considered (having regard to the planning history of the main site, and the need to develop a different form of AD plant together with additional digestate storage lagoons), having regard to the constraints, characteristics and opportunities presented by this site and its context, including those issues addressed above, together with the various supporting assessments and findings which accompany the application. The proposals would not give rise to any significant, adverse effects (and those adverse effects arising are outweighed by benefits) and thus accords with the relevant Development Plan, and national planning and renewable energy policies.

Appendices

Appendix A: Site Location Plan

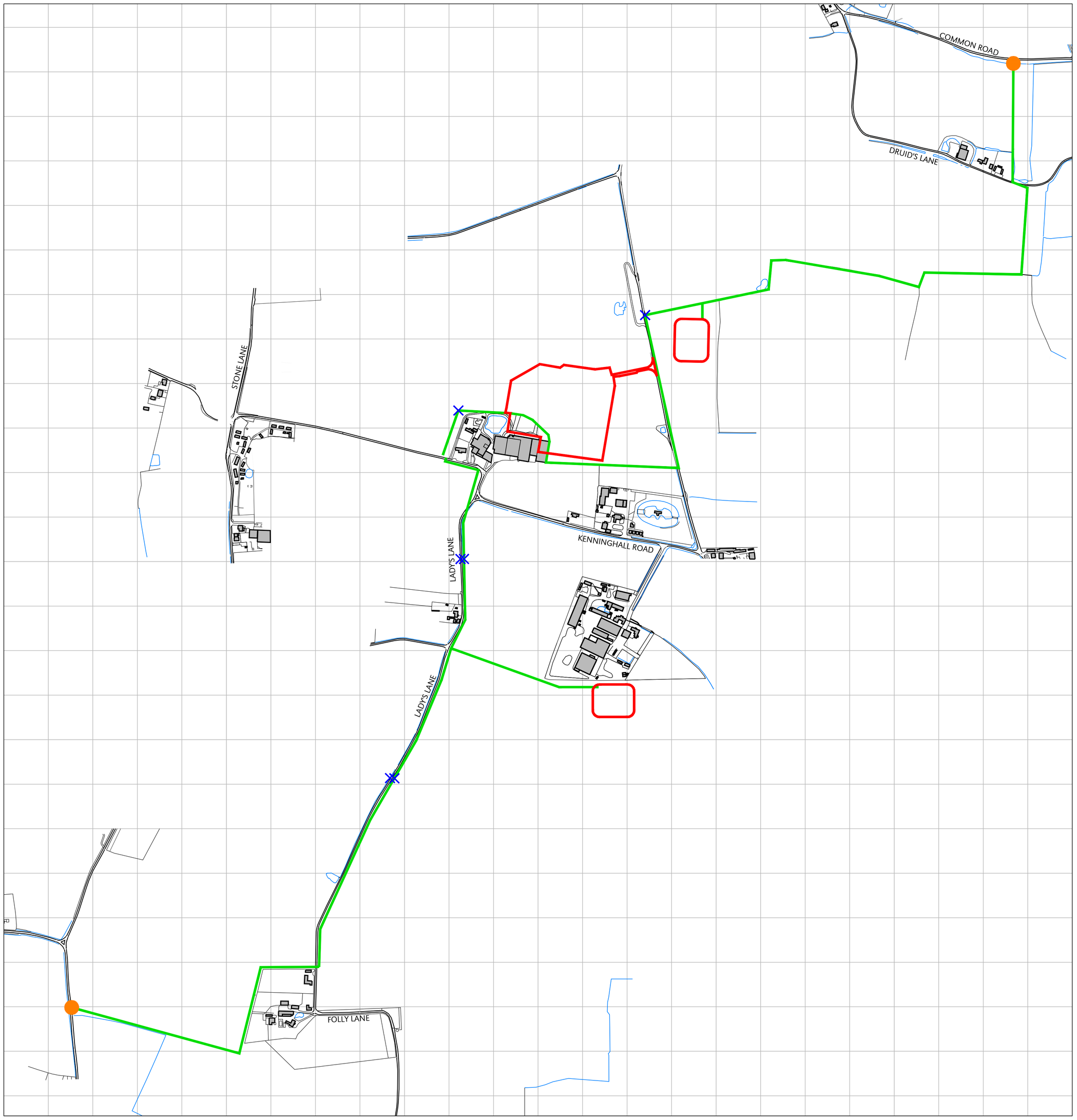
Appendix B: Economic and Operational Context

Appendix C: Landscape Mitigation Proposals (main AD site)

Appendix D: Assessment of relevant policies of the adopted Minerals and Waste Core Strategy

APPENDIX A

Site Location Plan



FOR PLANNING

Rev	Date	Rev By	Chkd	Description
G	10-06-22	OAJ	OAJ	Redline Boundary Amended
F	09-06-22	OAJ	OAJ	Updated for Planning Issue
E	17-05-22	OAJ	OAJ	Updated for Planning Issue
D	05-05-22	JLB	OAJ	Southern Lagoon Removed
C	21-01-22	JLB	OAJ	Paper Size and Scale Changed
B	21-12-21	OAJ	OAJ	Paper Size and Scale Changed
A	21-12-21	JLB	OAJ	Amended Following Comments
0	20-12-21	-	OAJ	First Issue

Legend:

- AD Plant and Lagoon Redline Boundaries
- Proposed Digestate Pipework Routes
- Tanker Offtake Points for Transport to Additional Land Area.
- Field Offtake Points for Direct Spreading to Field

GENERAL NOTES:

1. All dimensions noted are in millimetres unless stated otherwise.
2. All levels to be above Ordnance Survey Datum defined levels (A.O.Dm) unless noted otherwise.
3. Do not scale from this drawing, if dimensions are not clear ask.
4. This document has been created in accordance with Plandescil Ltd. Terms & Conditions along with the scope of works provided by the client to Plandescil Ltd. Any use of this document other than for its original purpose is prohibited, Plandescil Ltd. accept no liability for any third party uses of this document.
5. Plandescil Ltd. to be immediately notified of any suspected omissions or discrepancies.
6. This drawing is to be read in conjunction with all other relevant documents relating to the project.

1:5000 - DRAWING SCALE REFERENCE (m)

200 100 50 0 100 200 300 400 500

plandescil
consulting engineers

Connaught Road Attleborough Norfolk NR17 2BW
Telephone: (01953) 452001 Fax: (01953) 456955
E-mail: pdc@plandescil.co.uk www.plandescil.co.uk

civil / structural / environmental / surveying

Client

BioWatt Site Services Ltd

Project

Proposed Digestate Lagoon
Land Off Common Road,
Bressingham, Diss

Drawing Title

Proposed Lagoon
Pipework Routes

Scale U.N.O.	Date	Drawn By
1:5000 (A1)	December 2021	JLB

Drawing No.	Rev
27402/SK06	G

APPENDIX B

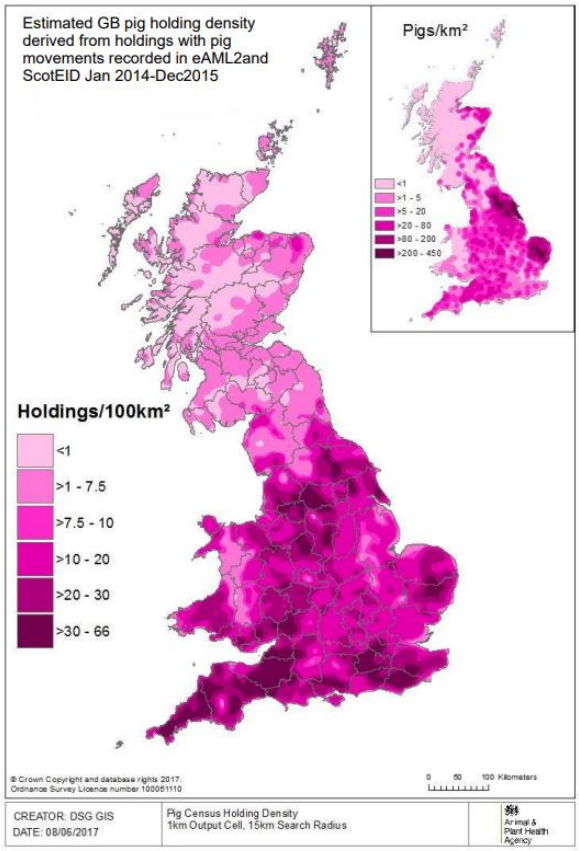
Economic and Operational Context

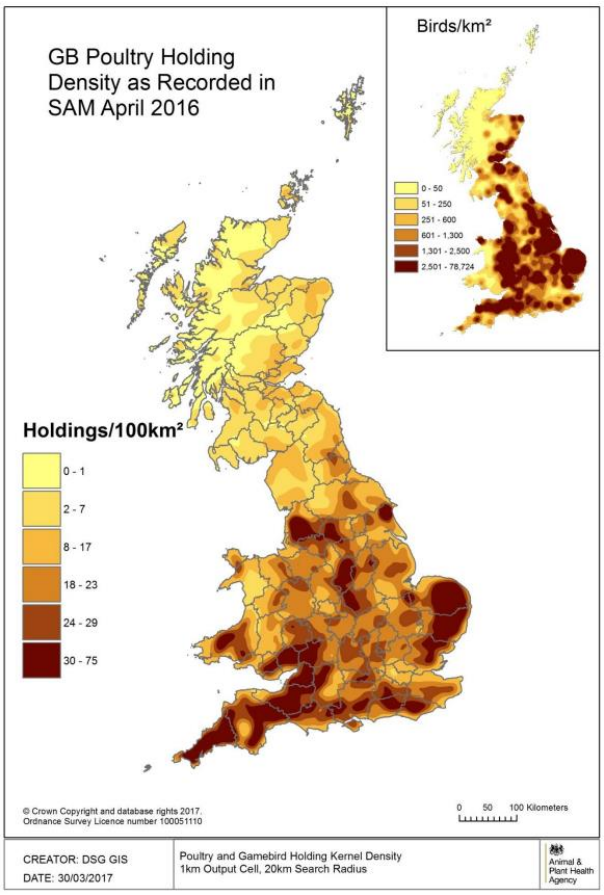
ECONOMIC AND OPERATIONAL CONTEXT

South Norfolk is a heavily agricultural area both for arable (crops) farming and especially livestock; and investment in better environmental controls for diffuse agricultural pollution have not kept pace with the increase in farming activity in the area. Deal Farm Biogas would provide the only such facility in the whole of South Norfolk District Council for the safe treatment and recycling of crops, manures and farming by-products into renewable fertilisers and green biomethane into the gas grid.

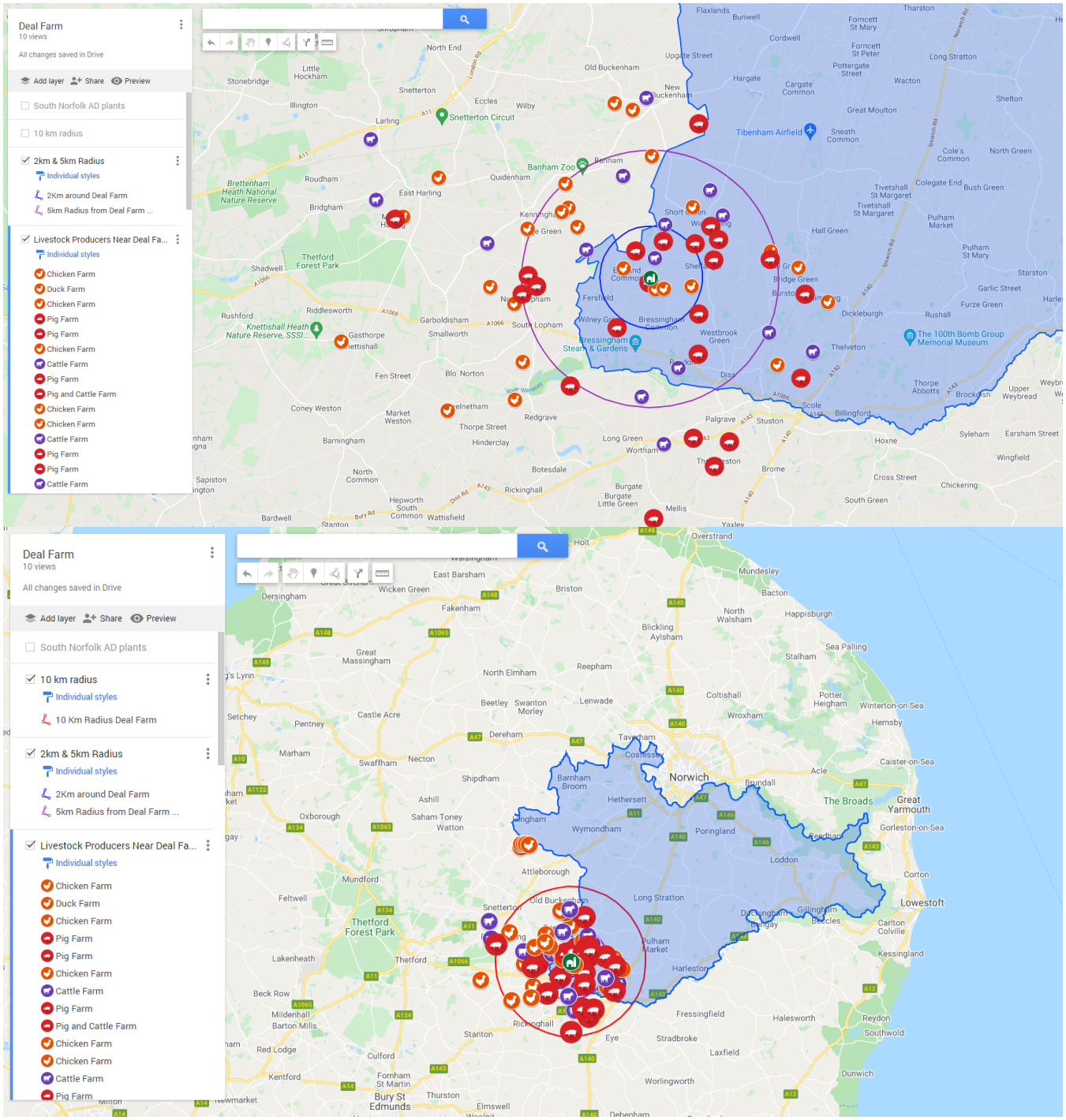
LIVESTOCK FARMING NEED

Figure 2: Pig holding density





In 2017 the Eastern Daily Press reported that Norfolk was home to 10% of the UK's large-scale livestock units (defined as such by requiring an IPPC permit) and that 30 of these were in South Norfolk. Based on our limited investigation into the availability of farmyard manures for the AD plant, we have identified roughly 40 livestock farms within 5km and over 60 within 10km of the proposed AD site.



There are currently no AD/ biogas plants within 10km of the site that receive farmyard manures.

In short, South Norfolk has a manure problem.

Current practice in the area is to contain slurries and manures in open & unregulated tanks, lagoons and on "muck pads" or field heaps – before being spread "raw" onto land. The breakdown of these materials (in the open) results in the uncontrolled release of harmful (polluting and greenhouse gas) emissions to air and water. By permitting the facility at Deal Farm, the Local Planning Authority would be making provision for 10,000 tonnes (or cubic metres) of treatment capacity for these materials – to be stored in gas tight tanks and converted into renewable gases and fertiliser that will displace the import of chemicals to the area.

Since the 2015 application and granting of permission, there have been two key pieces of regulation/ legislation impacting on farmers in South Norfolk:

1. Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018[1] - also known as the Farmers Rules for Water

   These regulations and the ending of the deferment period (ending in February 2022) were implemented as a direct result of the pollution caused by current manure/ slurry management practices and will place significant additional controls on the use of liquids (slurries and manures) on land. When taken in conjunction with the banning of neo-nicotinoid pesticides (which has all but ended the growing of rapeseed – an autumn crop), this has the effect of reducing the "spreading window" for liquids to 3-4 months of the year at most. To meet this requirement, farmers will need substantially more storage capacity than present.

   By permitting this AD plant and associated fully enclosed/ covered lagoons, the management of these materials will be brought more firmly under the regulation of the Environment Agency and (through appropriate planning controls) the Local Authority – in way that is currently not possible. The plant will also provide a local, better alternative to current manure/ slurry management.

2. Clean Air Strategy (2019)

   The Clean Air Strategy was introduced in 2019 to control the release of key polluting emissions. Agriculture is highlighted as one of biggest emitters of ammonia (from livestock production, storage of livestock manures, application of them to land and use of fertilisers such as Urea). The storage and treatment of these materials in enclosed gastight tanks will significantly reduce the impact of manures under the Strategy and result in the production of organic fertiliser in the form of digestate that will reduce the local reliance on imported urea.

   Whilst the Strategy recognises that AD is also a producer of ammonia from digestate application, it goes on to clarify that if stored with covered lagoons (as are proposed here) and applied correctly via injection or trailing shoe (BAT) big reductions in Ammonia emissions are found.

By approving the AD facility at Deal Farm, the LPA will be making a significant provision for local farmers in South Norfolk to be able to meet these new legislative and regulatory requirements.

ARABLE FARMING NEED

In addition to livestock – South Norfolk is a large producer of arable crops. In particular, over the past few decades, sugar beet for sugar manufacture at the British Sugar plants in Wissington and Bury St Edmunds (requiring transport out of the local area).

Sugar Beet in particular is an intensively grown crop, yielding some 80 tonnes per hectare – therefore an area within 5km of the proposed AD plant at Deal Farm might, in theory, easily produce over 500,000 tonnes per annum if given over to its production.

Deal and Oak Farm have traditionally grown large quantities of Beet – which, while economically positive, have negative impact on soils and roads (being that harvest can be all through the Autumn and Winter – even into January when soils are heavy and prone to damage and compaction if large vehicles are used on them).

In recent years, the beet harvest has become more variable through the banning of neonicotinoid pesticides and resulting impact of beet yellow virus – resulting in the UK Government allowing their use for beet only. This represents a risk to both the beet growers (who may find the pesticide banned again) and the environment – through its impact on bee colonies.

Photo taken on lanes within 1km of the proposed plant this year on 17th December. The intention is to replace Beet growing with maize, grass and wholecrop cereals on rotation – which are all harvested between May and October.

By working with Oak/ Deal Farm and surrounding farms, the plant will:

- reduce reliance on sugar beet as a commercial crop
- reduce "food miles" as crops will stay within 5 km of production (unlike Wissington – 36 miles – or Bury St Edmunds – 25 miles). Effectively the crops can stay north of the A1066 instead of passing through villages to get down to it
- provide a stable, consistently priced market for locally grown arable produce
- provide organic fertiliser reducing dependency on imported chemical fertiliser

Did you know New Holland have brought out (at full commercial scale and availability) a tractor fuelled by Biomethane?

Of the crop input to the plant only about 25% will be maize (no more than 5,000 tonnes a year), with the remainder being grass, wholecrop rye and other grasses and cereals. Energy crops like above use a fraction of the agrochemical (sprays) compared to crops such as Wheat, Oilseed rape and sugar beet do. For example, you will spray a grass ley for the AD plant 1 time in 2 years, you would spray a wheat crop 10-11 times each season.

ECONOMIC NEED

In recent times agriculture has been subject to an extremely high degree of volatility owing to:

- shortage of European labour post-Brexit
- economic uncertainty over the replacement of the Basic Payment Scheme

- rampant inflation – fuel and gas prices have driven up costs
- fertiliser inflation – Nitrogen fertiliser has risen from £300 per tonne to £800 per tonne in the past 12 months alone
- CO2 shortages – along with labour shortages, impacting on slaughter houses – leaving farmers with stock they cannot sell
- COVID-19 – further impacting on manpower availability – as agriculture is a peak demand industry (requiring significant seasonal labour volumes to meet harvest, picking and other seasons)

And that is in addition to the usual vagaries of the weather, pests and disease.

In addition to its numerous environmental and energy benefits, the AD plant at Deal Farm is a significant economic benefit to the local economy of Bressingham and South Norfolk:

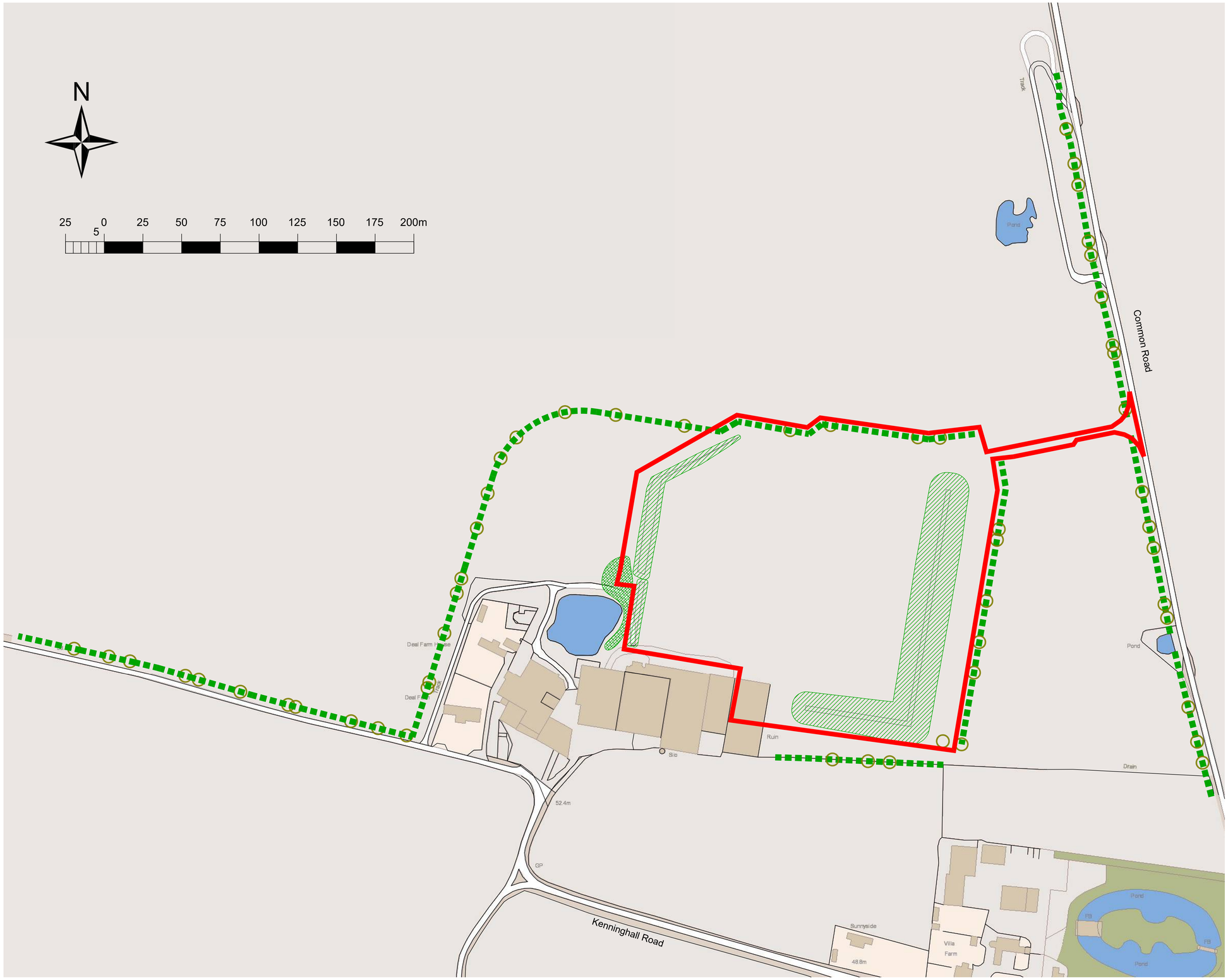
- It will create 3 full time local jobs (operators must live close to the plant in order to be onsite at short notice)
- It will create a number of additional specialist jobs associated with the ongoing maintenance and technical/ biological support of the plant (e.g. CHP/ Gas Upgrader/ Plant/ Mobile Plant/ Site maintenance, biological support/expertise, laboratory testing of samples – feed/ digester/ digestate – and so on)
- It will safeguard numerous agricultural jobs associated with the growing of crops, rearing of livestock and logistics of such
- It will provide much needed economic stability by offering long term inflation linked prices for crops, straw and other by-products
- It will offset the cost of compliance with Farmer Rules for Water Regs and the Clean Air Strategy by offering value to farmers for their manures and slurries (relative to the amount of gas they produce)
- It will reduce the massive impact of fertiliser cost increases by offering a local, organic alternative to NPK fertiliser in the form of both liquid and solid digestates – at hugely reduced prices
- It will reduce the cost and impact of haulage by reducing miles on as materials are currently sent much longer distances to market.
- Finally – the plant will pay substantial amounts in Business Rates that will be invested locally in improving local services and infrastructure

While the cost of purchasing the gas by the network will be spread over every gas bill in the UK (something that would not impact financially on locals not currently or choosing to stay off the gas grid) – the economic and environmental benefits will be concentrated in Bressingham and South Norfolk.

In short – unlike other “renewables”, Anaerobic Digestion provides a myriad of benefits that go far beyond just renewable gas, integrating seamlessly with local farming processes and adding economic and environmental benefit at every stage of the supply chain.

APPENDIX C

Landscape Mitigation Proposals



Standard hedgerow mix

Following species planted in double staggered rows, 500mm between rows and 500mm between plants in the rows. Protected with mulch mats and 75cm Tubex tree shelters. All to be 45-60cm bare-rooted 2-year transplants, except for the Ilex which should be 3L pot-grown specimens.

50%	3000no.	Crataegus monogyna	Hawthorn
7.5%	450no.	Prunus spinosa	Blackthorn
15%	900no.	Acer campestre	Field Maple
10%	400no.	Corylus avellana	Hazel
5%	300no.	Ilex aquifolium	Holly
7.5%	450no.	Malus sylvestris	Wild Apple
5%	300no.	Euonymus europeaus	Spindle

Hedgerow trees

Trees planted within the hedgerow at average 25 metre spacing, and allowed to grow untrimmed above the hedgerow. To be 60-90m whips, protected with Tubex tree shelters

33 no. Quercus robur	English Oak
20 no. Sorbus torminalis	Wild Service Tree

Instructions

Carry out work between 1 November and 31 March.

Prepare the ground along a 1.5m wide strip to provide good soil conditions and as little competition from other vegetation as possible.

Apply any herbicide to the 1.5m strip in the August or September prior to planting only.

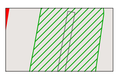
Plants must be kept clear of weeds until they are established.

Remove individual guards and tree shelters once the plants are established.

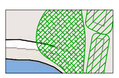
Replace all failures in the following planting season.

Trim the newly planted hedge in at least the first 2 years to encourage bushy growth, allowing the hedge to become taller and wider at each cut.

Prevent livestock and grazing animals from damaging the hedge by setting fencing at least 1.2m from the centre of the hedge, or, if there is a bank, as close to the base of the bank as possible



Native Meadow Mixture for Clay Soils on new bunding, using locally-occurring species



Infill planting where space allows to provide some screening between listed Deal Farmhouse and new development.

Trees to be feathered bare-rooted specimens, 175-200cm height, staked and tied and fitted with 1x1m mulch mat and rabbit guard. Excavated tree pit to be 600 x 600 x 600mm. Fork over the bottom of feathered tree pits to a depth of 150mm and other tree pits to a depth of 225mm and leave slightly domed to assist drainage. Roughen any smooth sides to pits. Topsoil excavated from planting pits is to be mixed with compost and used for backfilling.

10 no. Quercus robur
10 no. Prunus padus
10 no. Tilia cordata
10 no. Acer campestre

AD Plant, Deal Farm, Bressingham

Landscape Proposals

Client Burden Bros
Date December 2021

Drawing no. 2021-413-005
Revision G

Drawn by LBL
Checked by

Scale 1:1250 @ A1

Eden Cottage
Hunt's Corner
Banham
NR16 2HL
01953 887656

BROOM LYNNE
PLANNING
DESIGN
LANDSCAPE
www.broom-lynne.com
luke@broom-lynne.com

APPENDIX D

Assessment of Relevant policies of the adopted Norfolk Minerals and Waste Core Strategy

Deal Farm, Bressingham – AD Plan & Lagoons
Assessment of relevant polices in the adopted Minerals and Waste Core Strategy (as requested by Norfolk CC)

Relevant Policies of the Norfolk Minerals and Waste Core Strategy & Development Management Policies DPD (2011)	Planning Policy Requirement	Assessment
Policy CS3 – Waste Management Capacity to be provided	The strategy for waste management is to provide sufficient waste management capacity to meet the expected arisings of municipal and commercial & industrial waste, and also to ensure that appropriate capacity is provided for inert waste recycling and disposal.	The application makes provision for 'near source' farm waste treatment/management (including the generation of renewable energy therefrom). After a period of deferment, the Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018 ("Farming Rules for Water Regs") come into full force in March 2022. This will require provision for substantial enclosed and sealed-surface storage of manures and slurries. This application makes provision for a substantial volume of such material from local livestock farmers.
Policy CS4 – New waste management capacity to be provided	By the end of 2026, there is a need to provide about 163,000 tonnes of new recycling, composting and source-segregated-anaerobic digestion capacity, about 703,000 tonnes of recovery infrastructure and about 2,060,000 tonnes of new inert landfill/quarry restoration voidspace. [This is to be delivered as set out in the policy.]	The application makes provision for 'near source' farm waste treatment/management (including the generation of renewable energy therefrom).
Policy CS5 – General Location of Waste Management Facilities	[Inter Alia] Agricultural waste treatment plants, windrow (open-air) composting plants, community composting plants, small scale local facilities (including "bring" sites for the collection of recyclables) will, due to their characteristics, be acceptable in locations more distant from the county's main settlements. Such proposals will still need to be in compliance with other relevant Core Strategy policies.	The application makes provision for 'near source' farm waste treatment/management and treatment (including the generation of renewable energy therefrom). Compliance with other Core Strategy Policies is demonstrated below. The facility is circa 2km from the nearest village.

Policy CS6 - General Waste Management Considerations	Waste sites should be developed in accordance with policy CS3 and will be acceptable provided that they would not cause unacceptable environmental impacts.	See above (Policy CS3) and below (Policy CS7). The application moves 'muck heaps' and 'field clamps' onto a purpose built, sealed-surface, drained facility where the materials are processed in gas tight vessels. The facility will make a significant positive impact on local water and air quality.
Policy CS7 - recycling, composting, anaerobic digestion, and waste transfer stations	The development of new AD facilities will be considered favourably, so long as they would not cause unacceptable environmental, amenity and/or highway impacts. [The preamble to the policy notes: ***Anaerobic digestion*** ***6.35*** *Anaerobic digestion (AD) is essentially an anaerobic equivalent of composting, converting biodegradable materials into a nutrient-rich digestate (which can be used as a fertiliser if produced from source-segregated biodegradable waste) and producing biogas (which can be combusted to produce energy). AD can operate at a range of scales, from the very small to the very large, from a range of feedstocks, and is thus a flexible technology.* ***6.36*** *The Government is keen to promote the benefits of AD. Defra's Anaerobic Digestion – Shared Goals (published in 2009) has a vision of AD diverting waste away from landfill, producing significant quantities of renewable energy, with the UK being a "world leader" in the technology. Defra's Accelerating the Uptake of Anaerobic Digestion in England: an Implementation Plan was published in 2010 and highlighted a series of key actions to deliver major growth in AD provision, including training for planners and councillors to address an apparent lack of expertise.* ***6.37*** *Alongside the use of other existing, emerging and yet-to-emerge technologies, the Waste Planning Authority will therefore support the use of AD, and will work closely with the Environment Agency and farmers/landowners/ developers to maximise the delivery of new AD plants.]*	The Plan supports the development of new AD facilities. The application (and information below) demonstrates that there would be no unacceptable environmental, amenity or highway impacts.

Policy CS13 - Climate change and renewable energy generation	All opportunities for new waste and minerals developments to generate renewable on-site energy will be welcomed.	The application proposals are for a 4MW biomass fuelled renewable energy facility. The plant will produce up to 35-39,000MWh of renewable energy (biomethane) from local biomass, sufficient energy (based on an average household consumption of 12 MWh/annum) to serve around 3,250 homes. Total CO_2 emissions saved (based upon a CO_2 output from burning gas of 0.185 kg/kWh) would be 7,215,000 kg/CO_2 per annum. The proposed CO_2 recovery plant (not part of the 2015 scheme) would also produce over 5,000 tonnes of CO_2 in liquid form; as a by-product of the anaerobic digestion process, carbon dioxide will now be captured, processed (liquified) and distributed to manufacturing industry (food, drink, cement, etc.).
Policy CS14 - Environmental Protection	Developments should ensure that there are no unacceptable adverse impacts upon: • Natural resources, including water, air and soil; • The character and quality of the landscape and townscape, including nationally designated landscapes (the Norfolk Coast Area of Outstanding Natural Beauty and the Norfolk and Suffolk Broads); • Biodiversity and geodiversity, including nationally and internationally designated sites and species, habitats and sites identified in Biodiversity and Geodiversity Action Plans; • Heritage assets and their setting, and cultural assets; and • Residential amenity e.g. noise, vibration, dust, lighting, and visual intrusion.	The application includes detailed assessments in relation to all those environmental and related issues identified by policy CS14. In terms of environmental harm the proposed AD plant would, given its location in the countryside, have some noticeable visual impact upon the local landscape from some perspectives, and this is evidenced in the accompanying Landscape and Visual Appraisals. However, the proposed development on the main AD plant site part - whilst visually imposing - is deemed to be of a similar character to the scheme approved in 2015, which itself would have been a feature in the landscape for the same reasons. Landscape mitigation, involving field and roadside trees and hedgerow planting, will provide longer-term landscape structure and ameliorate the impact of the proposals. The lagoon proposals will have some limited impact in landscape terms, but effective landscaping - as proposed – will mitigate this and in time positively enhance the local landscape structure. No other adverse environmental impacts are identified. In light of all the above, the applicants contend that the 'benchmark' of "unacceptable adverse impacts" is not reached by these proposals, and that in any event the proposed mitigation will address some of the visual

		impacts, and which can be controlled by condition. The planning balance is therefore in favour of the proposed AD plant development.
Policy CS15 - Transport	The County Council will consider minerals and waste development proposals to be satisfactory in terms of access where anticipated HGV movements, taking into account any mitigation measures proposed, do not generate (inter alia): a) Unacceptable risks to the safety of road users and pedestrians; b) Unacceptable impacts on the capacity and/or efficiency of the highway network (including the trunk road network).	The application and its Transport Statement demonstrate that the overall vehicle movements to/from the proposed facility would not be material in the context of existing vehicles on the local highway network, especially when considering that these vehicles already operate on that network through farming activity. It is considered that the proposed development is satisfactory from a traffic and highway viewpoint. The proposed development will have no material adverse impact upon the local highway system (movement of feedstocks, biofertiliser and CO2) or any increased highway dangers to road users or pedestrians.
Policy DM1 – Nature Conservation	Development that would harm: • Locally designated nature conservation and geodiversity sites; and/or • Habitats, species or features identified in UK and Norfolk biodiversity and geodiversity action plans; will only be permitted if it can be demonstrated that sufficient measures to mitigate harm to the site, habitat(s) and/or species can be put in place, preferably in advance of development.	The supporting Ecological Impact Assessment concludes that the development would create no material, adverse nature conservation impacts. Accordingly, the development proposals accord with the relevant provisions of the NPPF and policies of the Development Plan insofar as they relate to ecological protection and biodiversity (including net gain, which amounts to 14.12%). A Habitat Regulations Assessment Stage 1 Screening/Stage 2 Appropriate Assessment concludes that there would be no significant residual effect. The application site sits outside the catchment area but – for completeness – the application is supported by a Nutrient Neutrality Note prepared by Enzygo Environmental Consultants, which concludes that there is no hydrological or hydrogeological pathway for any nutrient emitted to ground from the proposed development to designated sites of concern to Natural England, and thus no Likely Significant Effect.
Policy DM3 – Groundwater and Surface Water	Applicants will need to give due regard to the policies within the Environment Agency's document 'Groundwater Protection: Policy and Practice (GP3)' and	A Flood Risk Assessment (FRA) has been prepared for the AD plant site, together with a Drainage Design Strategy and Philosophy Statement, and individual FRAs

	demonstrate that proposed developments would not adversely impact upon groundwater quality or resources and surface water quality or resources. A hydrological/hydrogeological risk assessment must be submitted, where applicable, to demonstrate this to the satisfaction of the County Planning Authority as advised by the Environment Agency.	for each of the proposed storage lagoons, submitted to support the application. These demonstrate that the proposed development is located in fluvial and tidal Flood Zone 1, and is at very low risk of flooding from surface water, and reservoirs. The lagoon sites are shown to be at low risk of groundwater flooding. The main AD plant site shows some risk of surface water flooding, but which can be mitigated. The main AD plant design incorporates detailed systems (for both clean and dirty areas of the site) and management/maintenance to meet Environmental Permitting requirements. Plandescil Consulting Engineers has designed the silage clamps, holding ponds and site drainage in accordance with CIRIA C736, CIRIA C759F, BS5502, SSAFO and DEFRA (March 2015) standards, where applicable.
Policy DM4 – Flood Risk	A Flood Risk Assessment is required for all development in Flood Zones 2 and 3, and for sites greater than 1 hectare. Through consultation with the Environment Agency, the County Planning Authority will expect developers, through site layout, design and access, to ensure flood risk is not increased as a result of all mineral extraction and waste management sites.	See above (against Policy DM3)
Policy DM8 – Design, local landscape and townscape character	Development will be permitted if it will not harm the conservation of, or prevent the enhancement of, key characteristics of its surroundings with regard to the character of the landscape and townscape, including consideration of its historic character and settlement pattern, taking into account any appropriate mitigation measures. Development will only be permitted where it would be within, or could affect the setting of, nationally or locally registered Historic Parks or Gardens, registered battlefields, conservation areas, listed buildings or the North Norfolk Heritage Coast, where the applicant can demonstrate that the development would not adversely impact on the historic form, character and/or setting of these locations, taking into account any mitigation measures.	The proposed AD plant would, given its location in the countryside, have some noticeable visual impact upon the local landscape from some perspectives, and this is evidenced in the accompanying Landscape and Visual Appraisals. However, the proposed development on the main AD plant site part - whilst visually imposing - is deemed to be of a similar character to the scheme approved in 2015, which itself would have been a feature in the landscape for the same reasons. The AD plant is also set against a back-drop and within the vista of a number of agricultural and industrial buildings of varying sizes, shapes, heights and designs (not in open countryside). Landscape mitigation, involving field and roadside trees and hedgerow planting, will provide longer-term landscape structure and ameliorate the impact of the proposals. The lagoon proposals will have some limited impact in landscape terms, but effective

		landscaping - as proposed – will mitigate this and in time positively enhance the local landscape structure. No other adverse environmental impacts (including in relation to heritage assets) are identified.
Policy DM9 – Archaeological Sites	Applicants whose proposals could potentially affect heritage assets, or which are in areas with high potential for archaeological interest, will be required to prepare and submit an appropriate desk-based assessment and, where necessary, a field evaluation with their application to the County Council. Development will only be permitted where it would not adversely affect the significance of heritage assets (and their settings) of national and/or regional importance, whether scheduled or not. Where proposals for mineral extraction or waste management facilities would affect Scheduled Monuments and/or other assets of national and/or regional importance (including their settings), there will be a presumption in favour of their preservation *in situ*. Following the results of a site evaluation, development which would potentially affect other heritage assets (not of national or regional importance) could be acceptable if subject to appropriate mitigation measures – such as physical preservation of the archaeology *in situ,* or preservation by record (including appropriate publication and archiving).	An Archaeological Desk-Based Assessment supports the application. It concludes: "Based on the known evidence, the four Sites generally have only a low archaeological potential for all periods, with no evidence to suggest that any of the four Sites has been developed. The Southern Lagoon and Northern Lagoon Sites have a moderate potential for further Roman artefactual evidence consistent with existing metal detecting finds from the surrounding areas. The AD Plant has a moderate potential for medieval artefactual evidence. In contrast, the Central Lagoon Site has a moderate potential for early modern remains associated with the small farm complex, which is depicted on the 1841 tithe map and Ordnance Survey maps dating to 1884 and 1905. Other potential remains within all four Sites are anticipated to be limited and of low potential. These would generally be regarded as being of low importance such that disturbance to them would not preclude development. Consequently, it is anticipated that no further work would be required within the boundary of the four Sites at this stage; planning consent could be granted on archaeological grounds in compliance with legislation and planning policy."
Policy DM10 - Transport	General transport/access considerations for mineral or waste developments.	See comments above (against Policy CS15)

Policy DM12 - Amenity	The protection of amenity for people in close proximity to waste management facilities will be a key consideration. Where appropriate, buffer zones, advanced planting and/or screening and other mitigation measures will be required. Development will be permitted only where it can be demonstrated that the scale, siting and design of a proposal is appropriate and that unacceptable impact to local amenity will not arise.	The application and supporting evidence (including in relation to noise, odour, air quality, design and transport) demonstrate that there would be no unacceptable impacts to local amenity as a result of the proposed development.
Policy DM13 – Air Quality	Applicants for planning permission will be required to submit information to demonstrate that proposals effectively minimise harmful emissions to air and would not impact negatively on existing Air Quality Management Areas, nor lead to the declaration of a new AQMA. Development will be permitted if adequate measures can be agreed through planning conditions to mitigate potentially harmful air quality impacts to human health.	See comments above (against Policy DM12)

02 June 2022