

Design and Access Statement



Lodge Farm, Holt, Wrexham. LL13 9TE.

Prepared by



environmental business development ltd

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1. Introduction

An initial application to develop anaerobic digestion at Lodge Farm, Holt, received positive determination on 30th May 2008 (P2008-0177). Consent to develop a digester and associated pre and post storage was awarded on 5th June 2009 (P2009-0476). Subsequently, amendment was made to the Conditions by P2010-181, 5th July 2010.

The farm currently operates with a nitrogen fertiliser input below the limit for an Organic status farm. This deficit could be made up by processing additional materials within the AD plant and subsequent application of the resultant digestate product to the land.

Significant quantities of industrial wastes, sewage sludge and slurries from intensive farming are applied routinely and widespread to land in the area and can be applied direct to land at Lodge Farm. Importing up to 2,000m³ of materials would meet the nutrient requirement of the farm and double the renewable energy generated. PAS110 can be achieved by processing agricultural wastes and energy crops before any waste materials are imported. Digestate applied to land will therefore always be of product status and waste will not be applied to land.

The plant was designed of sufficient capacity to process the arisings of slurry that occur during the winter months when cattle are housed. During the summer months, when the cattle graze, there is a reduced arising of slurry leaving the digester operating below capacity. Therefore a deficit arises in the capability of the plant to fulfill its energy generating potential which is imposed by P2010-181 Conditions 1 & 2, banning the importation of other materials

PhD studentship research at Lodge Farm to quantify the benefit of digestate, undertaken by the University of Bangor, has demonstrated significant performance benefits and greenhouse gas reductions by using digestate as a fertiliser in comparison to undigested materials.

As a supplier of nutrient to an Organic farm, a digester has to be able to trace the origin of its feedstock materials. Therefore, the Lodge Farm plant is only able to process organic compliant feedstock. Use by the farm of digestate from centralised plants is unlikely due to the risk of non-conforming (GM) materials.

The farm is located only a few miles from Wrexham Industrial Estate where significant arisings of food wastes occur. Processing wastes in the plant conforms with the proximity principle defined in the UDP sec 11.14 *"The proximity principle (the treatment of waste at or near to its source) aims to ensure that waste management problems are not exported from one area or region to another."*

Positive determination will allow;

- Farm diversification to take place by introduction of an alternative farm income and for farm practice modernisation to reach its full potential. The farm will act as a model demonstrator of best practice to farming throughout Wales and the UK.
- The current Conditions have restricted the economic performance of the site which has in turn led to postponement of the work to implement best practice and construct covered digestate storage tanks.
- Immediately, a full time job will be created as a site manager.
- Doubling of renewable energy production

2. Application Proposal

Conditions attached to the determination P2010-181 effectively sterilise the potential of the plant to generate further renewable energy, contrary to UDP 2.6 “Activities associated with energy supply should be consistent with protecting the local and global environment. Any environmental damage or loss of amenity caused by energy supply or ancillary activities should be minimised and unnecessary sterilisation of energy resources prevented.”, and from recycling further inputs into ‘Organic’ certification & PAS 110 compliant fertiliser in order to meet the nutrient requirements of the farm.

This application requests the amendment of the existing Conditions 1&2 associated with application P/2010/0181 to permit the import of up to 2000m³ pa additional feedstocks. A low clay containment bund will be constructed and the generator exhaust stack located external to the buildings. The site development area has been redrawn to account for using the existing site access as requested in previous application and incorporating the proposed containment area .

It is requested to amend Condition 1 as follows;

“The digester, associated storage tanks and reception building hereby approved shall be used to receive, digest and store (i) the cow slurry farm yard muck and arable waste generated by Lodge Farm and Lower Park Farm and any other farms under the stewardship of the Tomlinsons (ii) not more than 2,000 cubic metres in any calendar year of waste arisings from land outside those lands, only, and no other slurry, food waste or any other waste or any other materials shall be imported into the site for digestion / storage in connection with any part of the development hereby approved.”

Condition 1 to be amended as it prevents the direct generation of renewable energy from materials that are otherwise currently wasted and spread direct to land. Additional benefit will occur by further reduction in greenhouse effect contributing emissions resulting from improved fertiliser performance compared to unprocessed materials as well as reduced health and environmental risk currently arising through fugitive emissions to land, water and air. Processing materials through on-farm anaerobic digestion will generate renewable energy and represents Best Available Technology endorsed by WG and the Environment Agency. It dramatically improves the low-tech procedure currently widespread throughout the borough.

It is also requested to amend Condition 2 as follows;

~~*“The slurry and all other materials, with the exception of farm yard muck and arable waste only, as detailed in condition 1 above to be used in connection with the development hereby approved shall be moved by means of retractable umbilical pipe only and shall at no time be transported to the digester or associated storage tanks and reception building by means of the external surrounding road network which includes ‘Park Lane’, ‘Rossett Road’, ‘Hoseley Lane’ and ‘Borras Road’.”*~~

Condition 2 to be varied to apply the restriction to cow slurry only as the Condition excludes benefits from using energy crop or spoilt feed, does not represent best practice and currently results in farm arisings being applied directly to land with the same negative consequences as above.

Application P2008-0177 contained the statement “The proposed development is supported by TAN6, which seeks to encourage small on-farm operations such as renewable energy, and by TAN21, which advises that agricultural waste facilities, such as anaerobic digestion, should be considered to be complimentary to Regional Waste Plans. As confirmed within the North Wales Regional Waste Plan, small scale anaerobic digestion plants may be appropriately located on farms, where they are close to the source of the waste arisings.”

The Lodge Farm development is a renewable energy facility regulated by OFGEM. OFGEM classifies a facility of output <250kW as micro and a facility of <500kW scale as small.

The plant capacity of 1,000m³ is well within the limit of an Environmental Permit Exemption T24 of 1,250m³. The Environment Agency “Briefing Note on Anaerobic Digestion, April 2010” describes Permitting for such a facility “The exemptions are for very low risk small scale operations and are limited by quantity of waste (T24 has a limit of 1,250 cubic metres of waste for storage and treatment) and the appliance must have a net rated thermal input of less than 0.4 MW.”

Further, the same document clearly states, “**Digestion of agricultural manures and slurries** We consider manure and slurry used as feedstock materials for AD to be wastes.”.

The conclusion therefore is that permission has already been granted for the facility to process wastes on three occasions in relation to P2008-0177 and P2009-0476, and also P2010-181 on the 5th July 2010 which varied the restrictive conditions imposed on the previous determinations.

2.1 Proposed Conditions

The applicant is willing to enter into voluntary Conditions to restrict the extent of operation of the facility:

- (a) Requiring that no digestate product should be spread otherwise than on land under the farming stewardship of the Tomlinsons,
- (b) Requiring that all of the farm slurry collected in the buildings on the farming land under the stewardship of the Tomlinsons should be processed in the digester
- (c) Requiring that the volume of arisings brought onto the site from outside the land under the stewardship of the Tomlinsons should not exceed 2,000 cubic metres per calendar year
- (d) Requiring that the records of waste arisings brought onto the site from outside the land under the stewardship of the Tomlinsons under Environmental Permitting arrangements (including the waste transfer note, the time and date of the delivery, the point of origin of the arisings, the vehicle registration number and type of the transporting vehicle, and the quantity of the individual load) should be retained by the operators of the site and that they should permit the Council planning officer to inspect those records at any time in normal business hours on 24 hours notice for up to 12 months after the end of a calendar year

The purpose of these conditions would be to ensure that the permission remains true to the basic proposition, that it should operate as a farm scaled facility primarily using waste from the farm, and be used to produce fertiliser to meet the organic nutrient requirement of the farm only.

2.2 Site Alterations

A 1m tall site containment bund will be introduced. On three sides, this will be a low earth bund constructed from clay won on site. The separation between the tanked area and reception building will be a concrete wall.

The tower mounted separator will be moved into the building.

The generator exhaust stack will be moved.

3. Pre-Application Discussion

A letter in from the applicants solicitor in response to the latest pre-application discussion with Wrexham planning officers, David Williams and Sharon Holman, is included within Appendix 1. A number of detailed pre-application presentations have been made over the course of the development history. This addressed all previous reasons for refusal.

A pre-application discussion has also been undertaken with Hannah Parish, Senior Minerals and Waste Officer, on behalf of the North Wales Minerals and Waste Planning Service, 4th October 2011. Further information in response to queries in the letter is included within the Appendix 4.

3.1 Community Consultation

The applicants have held two public consultation events including a public event at Kenyon Hall, Holt, Jan 9th 2008, attended by Cllr Michael Morris and Lesley Griffiths AM. At the event, it was clearly stated in presentation that it is the ambition of the plant to process food wastes, presentation attached, Appendix 5. At the event, Cllr Morris took the opportunity to communicate the nature of legislative compliance required for food wastes processing to the attendees. An exit poll had only one objection from the 100+ attendance.

The developers have also addressed the neighbouring Rossett Parish Council.

A subsequent public event took place at Lodge Farm after construction had been completed and the plant was operational.

The site has been used as an educational demonstrator tool by Farming Connect and the Environment Agency. The Countryside Council for Wales has assessed the technology to act as a mechanism to reduce the carbon footprint of cutting reed wastes from nature reserves.

The applicants have sponsored a PhD studentship with Bangor University and also have research relationships with Glamorgan, Southampton and Birmingham Universities.

When the applicants became aware of noise becoming audible during night time, they undertook prompt measures to rectify the issue. Subsequently, the applicant has re-designed the generator in order to replace a cooling fan with a quieter, more efficient water cooling system.

The most recent community engagement event was at Holt Lodge, 24th August 2011, by invitation of Farming Connect and the Wales Climate Centre (Appendix 14). This event highlighted the continued intent of the developers to process food wastes at the facility.

4. Development Context

The application of the technology of anaerobic digestion, although widespread in the UK as a water treatment process, is generally unfamiliar and developing in regard to the optimisation of the process itself and the policy that governs it.

Anaerobic digestion is a fundamental within the Welsh Assembly Government's revised overarching waste strategy document for Wales - 'Towards Zero Waste'.

"In particular, diverting food waste to anaerobic digestion."

"Priority Materials" • Diverting food waste from landfill to anaerobic digestion plants "

4.1 Optimised Performance

Recent DEFRA funded projects, "Optimising inputs and outputs from anaerobic digestion processes", Defra Project code WR0212, March 2009 and "Optimising Processes for the Stable Operation of Food Waste Digestion", Defra Project code WR1208, August 2010 have demonstrated that co-digestion of small amounts of food wastes with cattle slurry is the most productive method of methane generation and allows economic process location close to the largest arisings of waste materials, farms. This reduces the requirement for double handling of food wastes and digestate. The former study concluded *"With respect to food waste digestion, the **successful co-substrates capable of improving the performance were cattle slurry and card packaging. Addition of cattle slurry provides buffering capacity and essential elements, as well as a continuous inoculum of anaerobic micro-organisms.**"*

The UK produces in excess of 88 million tonnes of agricultural slurry every year¹ plus 18-20 M tonnes food waste² resulting in a total 110 million tonnes of organic waste a year.

This ratio lends itself to the 5:1 ratio of slurry to food waste intended to be processed at Lodge Farm.

There is a technological advantage in the co-digestion of cattle slurry and food wastes. The undertaking of such is supported by the revised Planning Policy Wales which has set out to maximise the efficiency of development opportunity to combat climate change.

This concurs with the WAG Practice Guidance Note 'Planning Implications of Renewable and Low Carbon Energy' 5.1.4 *AD is most likely to be part of an integrated farm waste management system. However as outlined above, larger-scale centralised anaerobic digesters (CADs) also exist which use feedstocks imported from a number of sources. **CADs are suited to farms.***

Rural CAD infrastructure presents significant benefit, where large areas of land for spreading digestate exist and fertiliser can be used effectively without unnecessary transport using unsuitable slow moving agricultural vehicles in urban areas.

¹ Assessment of Methane Management and Recovery Options for Livestock Manures and Slurries : Report for: Sustainable Agriculture Strategy Division, DEFRA,. 2007

² WRAP, 2010. Total food waste in the UK is around 18 - 20 million tonnes, food manufacturers produce around about 4.1 million tonnes,

The research work undertaken by Bangor University at the Lodge site has demonstrated that the benefits of digestate as a fertiliser are greater than previously assumed.

A statement on the benefits of AD has been provided by the University of Glamorgan (Appendix 12).

4.2 Organic Status

Most importantly, as a supplier of nutrient to an Organic farm, the digester has to be able to trace the origin of its feedstock materials. Use by the farm of digestate from centralised plants is unlikely due to the risk of non-conforming feedstocks used at the plant, or simply the centralised plants inability to prove that all materials were conforming.

The development is relating to a plant that will provide the nutrient requirement to one organic farm. An Organic farm has a lower maximum nitrogen application rate 170 kgN/Ha, than a conventional farm, 250kgN/Ha. Traffic associated with the development cannot exceed that required to import nutrient beyond that governed by the Organic compliance process.

The plant will be supplied by the existing Permitted landspreading contractors, located in the area. This will allow a choice of feedstocks that are organic compliant.

Stock are grazed in the central land area of the farm accessible by umbilical pipeline from the digester. Fodder crops are grown in outlying areas. Grass has a requirement mainly for nitrogen (N) fertilisation whereas crops have requirement for Phosphorus and Potassium (P&K). Separating digestate into liquid and solids results in the solid product holding the majority of the P&K nutrient. The solid digestate fertiliser is used specifically to fertilise the outlying fields growing fodder crops.

4.3 Facility Design

An independent assessment of farm slurry arisings and storage requirement has been undertaken by WAG accredited, Kite Agricultural Consultants. This details an annual production figure of approximately 11,000m³.

The Lodge Farm digester capacity is 1000m³.

An Environmental Permit Exemption T24 requires a minimum retention time of 28 days.

Therefore, maximum capability for processing imported materials =

$1000\text{m}^3 \times 365 \text{ days} / 28 \text{ day retention} = 13,000 \text{ m}^3 \text{ materials processed pa.}$

Total processing capacity – slurry arisings = capacity available for imported materials

$13,000 - 11,000 = 2,000\text{m}^3$

Therefore, maximum capability for processing imported materials = 2,000m³

This calculation has been endorsed by Dr Sandra Esteves, University of Glamorgan, Director of the Wales AD Centre of Excellence, funded by WAG as a provider of planning advice on anaerobic digestion developments (Appendix 6).

The facility had initially been designed of a capacity to meet the requirements of the slurry processing. It has become apparent during the university research studentship that the farm is failing to maximise the potential of the digester as a tool for the farm nutrient management. Nitrogen is the limiting factor in relation to legislation governing application rates.

The purpose of varying the Conditions, is to broaden the scope of the input. It is *not* to replace the input. The intention is that the input would continue to include all the collected slurry from the farm but would also include other, potentially waste, products.

The overall scale of the operation and in particular its input, is dictated by the output. There is no intention that the output digestate should be taken outside the lands which are within the stewardship of the Tomlinson farm holdings. The current overall acreage utilised by the Tomlinsons is 1100 acres or 445 hectares.

The farm is under organic management. The object is to become self sufficient in terms of fertiliser produced in this manner, because of the obvious financial benefits, and because by this means, the organic status of the farm is secured. A farm under organic management is regulated to a maximum nutrient loading for the holding based on a figure of 170 kilograms of nitrogen per hectare. The 445 hectare holding can therefore only receive a maximum of 75,650 kilograms of nitrogen.

The 11,000 tonnes of slurry input from the farm comprises approximately 0.5% nitrogen equating to 55 tonnes of nitrogen in the digestate output, (55,000 kg). The digester cannot produce sufficient output for the farm holding unless its input is supplemented.

Importation of materials is therefore governed by two factors;

1. The finite processing capacity of the digester
2. The maximum N loading rate for the farm

As such, this development meets only the requirement of the farm, is farm scale and represents a sustainable farm diversification in its entirety, providing rural employment and retaining the traditional agricultural character of the locality.

The design fulfills directly the recommendations of DEFRA projects WR0212 and WR1208 recommending co-digestion of food wastes and cattle slurries on-farm.

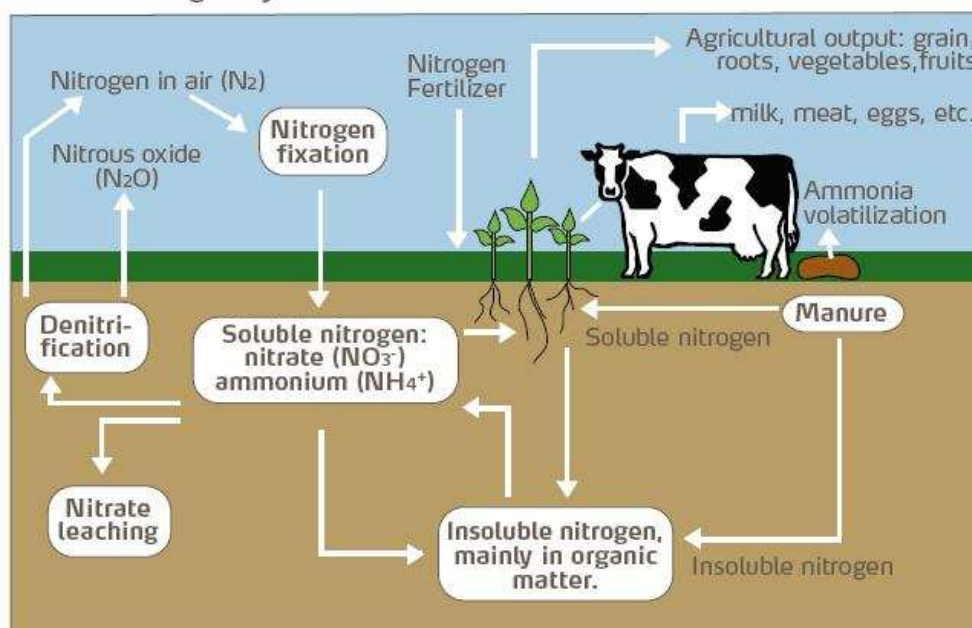
Permission has already been granted for a covered reception building. All solid input materials would be loaded onto the concrete floor within the closed reception building. All imported liquid materials would be loaded from tanker directly into the process.

A negative pressure environment will be maintained within the reception building by supplying the air to the generator. Any odorous substances would then be burnt. Emissions are regulated by the Environmental Permitting process.

There is no intention to process 'municipal wastes' collected from the kerbside. These materials have significant physical contaminants which require removal and disposal. Materials to be processed would be uncontaminated industrial wastes, energy crops and farm slurries and wastes. The volume of spare processing capacity does not warrant investment in equipment to remove contaminants from feedstocks.

The import of materials to the farm represent the 'Nitrogen Fertiliser' element of the nitrogen cycle illustrated below.

The soil nitrogen cycle



4.3.1 Clay Bund

A low clay bund will be built around the perimeter of the development area. The bund will be constructed of clay from a win pit on site. The win pit will then provide a depression for storm rainwater collection. The clay has been tested, and surpasses the requirements of EA impermeability levels (Appendix 13).

The bund will be grassed and provide visual mitigation to the base of buildings and also additional noise attenuation by absorbing and deflecting ground level noise.

The volume of the bunded area conforms with EA Permitting requirements. Rainwater will be introduced into the process as necessary. There is no requirement for off site drainage.

Please refer to drawings P1 and P01.

4.3.2 Exhaust Stack

The generator exhaust stack (7m*10cm diam) will be relocated to allow access for emissions monitoring.

4.4 Facility Scale

An amount of conjecture has surrounded the development classifying the plant as of “regional” scale. An opinion has been sought from the Wales AD Centre of Excellence (Appendix 7) and EA (Appendix 11) on this issue .

As indicated in the facility design description (previous), the digester system is scaled to fit the requirements of the farm. The farm exports nutrient as milk. Subsequently a nutrient deficit arises. This deficit is currently met by nutrient imported as feed. As the farm is a low intensity ‘Organic’ farm, the digestate is the primary source of fertiliser. All digester inputs are recycled through the process to use on the farm.

Conversely, conventionally intensive dairy farms, using concentrated feeds and chemical fertilisers do not require the importation of farm wastes to manage farm nutrient. In practice, the opposite situation exists where farms need to export slurry to reduce nutrient loading.

Merely the fact that materials are imported, and that the digester may be interpreted as a Centralised AD, does not dictate that the system is large. The plant capacity, volume of input and generation capacity dictate plant scale. Tripling the current output of the Lodge digester would still lead to an OFGEM scale classification of <250kW, “small”.

The development area is below the threshold suggested in TAN 18 as requiring a traffic assessment, industrial site > 5,000m² gross floor area.

In consideration of site scale, information has been requested from the Environment Agency to detail the current extent of disposal of untreated wastes to land (Appendix 8). This indicated 11 operations registered in Wrexham County Borough, of which 4 are allowed an unlimited number of deployments. Included is confirmation from one Wrexham based operator that it handles over 400,000 tonnes of waste to land each year (Appendix 9). The current stock levels at the farm allow for approximately 2,000 m³ pa of additional imported feedstock. This is equivalent to 0.5% of the wastes spread to land by just one of 4 contractors.

Planning Policy Wales Edition 4 - February 2011 - Chapter 12 Infrastructure and Services states, *“For planning purposes the following scales are considered:*

Figure 12.3 - Renewable and low carbon energy scales for planning purposes

Scale of development	Threshold (electricity and heat)
Strategic	Over 25MW for onshore wind and over 50MW for all other technologies
Local Authority-wide	Between 5MW and 25MW for onshore wind and between 5MW and 50MW for all other technologies
Sub Local Authority	Between 50kW and 5MW
Micro	Below 50kW

The Lodge Farm digester falls into the “Sub Local Authority” scale and it is recommended that development of these scale of facilities are supported.

12.8.19 Feed-in Tariffs provide financial support for projects in the sub-local authority scale category. There is potential for small businesses to invest in ownership of renewable energy projects. **Local planning authorities should ensure that development plan policies are supportive of projects benefitting from, or eligible for, Feed-in Tariffs.**

WAG Practice Guidance Note ‘Planning Implications of Renewable and Low Carbon Energy’ (July 2010) states;

Scale of application

5.1.4 AD is most likely to be part of an integrated farm waste management system. However as outlined above, larger-scale centralised anaerobic digesters (CADs) also exist which use feedstocks imported from a number of sources. CADs are ***suited both to farms*** and to areas allocated for business use and traditional commercial/industrial urban areas, and are compatible with more intensive Class B1/B2 uses.

5.1.5 An anaerobic digestion plant typically comprises a digester tank, buildings to house ancillary equipment such as a generator, a biogas storage tank, a flare stack (3-10m in height) and associated pipework. Plants can vary in scale from:

- A small scheme treating the waste from an individual farm (e.g. 150kWe).
- A medium-sized centralised facility dealing with wastes from several farms (potentially supplemented by crops such as maize grown specifically to feed the digester).
- A sizeable industrial CAD plant handling large quantities of MSW (e.g. 2.1MWe).

The Lodge digester is used as an integrated nutrient management system. Importation of materials leading to the facility acting as a medium-sized Centralised Anaerobic Digester is suitable for location on farms. The Lodge farm digester at present capacity of 80kW, doubled to 160kW, still falls into the 5.1.5 classification of “small”.

For perspective, the figure suggested as an example of an industrial CAD plant, 2.1MW or 2,100 kW, is 26 times the size of the current output at Lodge Farm. The example of the Holsworthy plant within the document, 2.7MW, is 34 times larger.

As such, in observance of sections 5.14, and 5.15, the Lodge Farm digester is suited to location on farm.

5. The Proximity Principle and Self-Sufficiency

There are two chicken farms within 2 miles of Lodge Farm as well as a hatchery at Borrass. The plant will be supplied any wastes by local permitted contractors that will be able to use the site as an alternative to direct land spreading for locally produced materials.

The proximity principle does not apply to the processing of energy crops.

TAN 8, Renewable Energy, Fuel Crops

3.11 There is likely to be a close locational relationship between the energy generation plant and the growing of crops specifically for fuel in rural areas. The growing of the fuel crop is an issue that lies outside of planning control; the planning process can only directly influence the development of plant and associated infrastructure.

Planning Policy Wales Edition 4 - Chapter 12 Infrastructure and Services

12.9.6 The sustainability of the sources of biomass fuel is not a planning consideration.

The concepts of proximity and self-sufficiency have been introduced into TAN 21 Waste policy by action of the Directive 99/31/EC on the Landfill of Waste and previous Directives. TAN 21 is subject to review in order to align with more recent Directive 2008/98/EC of The European Parliament and of the Council of 19 November 2008 on Waste introduced into Wales through The Waste (England and Wales) Regulations 2011. Most notably, this Directive amends the waste hierarchy and introduces Article (22) specifically regarding Bio-waste. Emerging policy to incorporate these principles will amend Planning Policy Wales.

Directive 2008/98/EC, (6) The first objective of any waste policy should be to minimise the negative effects of the generation and management of waste on human health and the environment. Waste policy should also aim at reducing the use of resources, and favour the practical application of the waste hierarchy.

Article 4

Waste hierarchy

1. The following waste hierarchy shall apply as a priority order in waste prevention and management legislation and policy:

- (a) prevention;
- (b) preparing for re-use;
- (c) recycling;
- (d) other recovery, e.g. energy recovery; and
- (e) disposal.

2. When applying the waste hierarchy referred to in paragraph 1, Member States shall take measures to encourage the options that deliver the best overall environmental outcome. This may require specific waste streams departing from the hierarchy where this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste. Member States shall ensure that the development of waste legislation and policy is a fully transparent process, observing existing national rules about the consultation and involvement of citizens and stakeholders.

Member States shall take into account the general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of

resources as well as the overall environmental, human health, economic and social impacts, in accordance with Articles 1 and 13.

Article 16

Principles of self-sufficiency and proximity

3. The network shall enable waste to be recovered in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health.

Article 22

Bio-waste

Member States shall take measures, as appropriate, and in accordance with Articles 4 and 13, to encourage:

- (a) separate collection of bio-waste with a view to the composting and digestion of bio-waste;
- (b) treatment of bio-waste in a way that fulfils a high level of environmental protection;
- (c) use of environmentally safe materials produced from bio-waste.

The Lodge Farm facility is the only facility in the area capable of fulfilling the objectives of the waste hierarchy, therefore allowing compliance with Directive 2008/98/EC. This has been the case for over 18 months. Failure to utilise the facility represents failure by the planning authority to meet its requirements to comply with Directive in regard to the waste hierarchy, the proximity and sustainability principle and Bio-waste, Articles 4,16 and 22. Article 16 refers to 'most appropriate' methods.

TAN 21 defines the proximity principle in regard to a number of concepts relating to transport distance, responsibility and providing a network of facilities so that there is accessibility to adequate and suitable processing facilities. A small scale farm based AD plant represents the 'most appropriate' method of disposal for many waste materials. Particularly in regard to commercial wastes, competition may not necessarily mean that closest is most appropriate for certain "quantities and types of arising".

Welsh Assembly Government, Technical Advice Note 21: Waste

Proximity and Self-Sufficiency.

3.1 The Proximity Principle states that waste should be treated and or disposed of as near to the source of origin as possible because transporting waste itself has an environmental impact. This principle recognises the need for us all to take responsibility for our own waste arisings and not be content with distributing it to other locations for disposal, even if there has always been a tradition of doing so. In order to deal with all local waste arisings wherever practicable, the principle also reinforces the need for an integrated network of facilities.

3.2 Local authorities must therefore take into account this principle when considering the requirements for, and location of, waste management facilities and regional self-sufficiency. Clearly, however, the treatment and or disposal of waste as near to the source as possible depends on the quantities and types of arising on the local and regional level, and local authorities should not attempt to restrict waste management developments within their boundaries to deal with arisings in their areas. The need for dialogue and cross-boundary partnerships will inevitably be essential.

3.3 The Self Sufficiency Principle also sets out that as far as practically possible, waste should be treated or disposed of within a sensibly defined region (see section 2) where it is

produced. Therefore, each region should aim, as far as is practicable, to provide for facilities with sufficient capacity to manage the predicted quantity and nature of waste arisings from that area for at least a ten year period, and preferably longer.

3.4 Local planning authorities have a duty to use these principles as set out in the various Directives in their strategic planning, and development control. This will ensure a holistic, forward looking and sustainable approach to waste planning in Wales.

The Lodge Farm facility complies directly with TAN 21 requirements of Proximity and Self-Sufficiency and contributes directly towards the obligations of the local authority to provide suitable facilities within its area, 3.1 *“the principle also reinforces the need for an integrated network of facilities”*. Specifically the Lodge Farm facility also complies with 3.1 *“that waste should be treated and or disposed of as near to the source of origin as possible”* as Lodge Farm is the only, and by default closest, facility in the region able to recycle liquid bio-wastes. This follows that Lodge Farm then complies with 3.3 *“The Self Sufficiency Principle also sets out that as far as practically possible, waste should be treated or disposed of within a sensibly defined region where it is produced. Therefore, each region should aim, as far as is practicable, to provide for facilities with sufficient capacity to manage the predicted quantity and nature of waste arisings from that area”*.

Most pertinent in relation to this application is the statement in relation to the proximity and self-sustainability principle, that it should not be used as a barrier to development, 3.2 ***“local authorities should not attempt to restrict waste management developments within their boundaries to deal with arisings in their areas”***. Centralising facilities will result in greater distances being travelled for certain types of arisings or materials arising outside the direct area.

Lodge Farm, as it is focussing in simple, uncontaminated feedstocks, may well provide a more economical and suitable alternative to other options *“within reasonable distance”* particularly for example, when avoiding unnecessary double handling.

2.2 Adopting a waste facilities network in Wales will mean that local planning authorities will be able to look outside their own area for facilities and capacity if necessary. Welsh Office Circular 26/9412 provides guidance on the issue of a **‘reasonable distance’** when looking outside the local planning authority boundary for certain capacities. **The adequacy of facilities within a reasonable distance will depend on the type of waste concerned, the quantity arising in the area, and the particular geographical circumstances.** Welsh local authorities should develop and formalise their cross boundary liaison and co-operative arrangements. This is especially important in the case of wastes that arise only periodically, or in dispersed locations.

Locating AD plants on-farm is compatible with other waste related uses as volumes of farm slurry arisings are considerably greater than any other form of organic waste. Liquid wastes are currently spread to land directly, farm slurries are transported between farms for application to land and centrally processed digestion results in a digestate that ultimately has to be transported to farm land resulting in double handling the material.

Proximity

4.7 This principle recognises that the transport of waste can generate significant impacts on the environment. **The overall objective is to locate facilities as close as practicable to the sources of waste and to other compatible waste related uses** and therefore to limit transport requirements.

Within the UDP, 11.14, it is stated simply that;

“The proximity principle (the treatment of waste at or near to its source) aims to ensure that waste management problems are not exported from one area or region to another”.

By ensuring that wastes may be treated within the area, the removal of Conditions restricting the operation of the only digester in the area will allow the local authority to comply with this aim. Centralised digesters, resulting in double handling of materials may result in export of wastes to cheaper on-farm facilities out of the area.

The Lodge Farm digester complies with the proximity and sustainability principles by virtue of offering treatment at the point of disposal stopping unnecessary transport involved in double handling to and from centrally located facilities. The Lodge Farm digester will contribute towards the “network” of facilities as prescribed by TAN 21.

Lodge Farm is only 3.5 miles from the nearest large industrial estate, which is a “reasonable distance”. Local chicken farms are significantly closer. Transporting wastes from chicken farms to an industrial estate located CAD and back would be contrary to TAN 21 and the proximity principle.

6. Traffic

The development area is below the threshold suggested in TAN 18 as requiring a traffic assessment, industrial site > 5,000m² gross floor area, agriculture has no threshold.

A traffic count was taken on Buck Road between Wrexham Road and Borrass Road on Wednesday 24th October 2007 by Landform Traffic Consultants.

In the 12 hours between 07.00 and 19.00 there was a 2 way flow of 575 vehicles of which 54 were HGV's.

It is the opinion of Landform Traffic Consultants "The proposal will generate one additional HGV a day resulting in only 2 trips a day along this route which doesn't represent a material change. I therefore don't believe that a Traffic Statement is necessary." (Appendix 10)

6.1 Site Access

It is acknowledged that the site visibility splay can be improved in order to comply with guidance as described in the policy document TAN 18.

Drawings have been included to demonstrate how this will be achieved.

The Traffic Officers report of 21st September 2010 did not highlight any further concerns about traffic related to the development.

Normal site operating hours are 7am to 7pm.

6.2 Vehicle Movements

The farm has a requirement to fertilise its land. This requires importing fertiliser materials. As the farm is Organic, artificial chemical fertilisers are not used. A common fertiliser is chicken litter. Currently, animal feeds are imported and the remaining nutrient is spread onto the farm as slurry. Lower Park Farm is currently investigating importing compost from outside of the area. Alternatively, food wastes can be processed in the digester and the nutrient used to grow more grass.

Supply of additional nutrient to the farm through the digester will result in additional grass growth and a reduction in the direct importation of nutrient as cattle feeds.

Suitable inputs are available locally and result in a significant reduction of medium and long distance transport of feeds.

Locating a digester on a farm, proximal to point of use of the digestate fertiliser, results in a significant reduction in transport.

By transporting materials to a digester for processing and then spreading digestate directly to land via an umbilical connection, larger delivery vehicles may be used as there is no

requirement to use tractors to access fields to spread materials directly. Therefore there is the opportunity to use HGV with trailers of capacity in excess of 20m³ rather than tractor hauled trailers that are typically 10m³. This leads to a reduction in vehicle movement and a decrease in slow moving agricultural vehicles on roads.

Recent DEFRA funded projects, "Optimising inputs and outputs from anaerobic digestion processes", Defra Project code WR0212, March 2009 and "Optimising Processes for the Stable Operation of Food Waste Digestion", Defra Project code WR1208, August 2010 have demonstrated that co-digestion of small amounts of food wastes with cattle slurry is the most productive method of methane generation and allows economic process location close to the largest arisings of waste materials, farms. Transporting slurry to urban digesters in order to improve efficiency will result in greater transport.

Locating digesters close to point of use of the digestate is more important in reducing transport than locating a digester centrally. Centralised digesters lead to doubling vehicle movements as the feedstock is transported to the digester and the digestate is transported from the digester to the farm. Digestate transportation to farm from CADs is usually carried out when applying direct to field and done so by tractor.

A number of traffic scenarios are illustrated comparing haulage implications of transferring materials to Lodge Farm directly as opposed to via a centralised facility. The examples use a site adjacent to the Five Fords sewage works where a scenario is envisaged that the sewage digester is expanded to process additional materials. Arisings are assumed as originating from a large cereals manufacturer on nearby Wrexham Industrial Estate, only 3.5 miles from Lodge farm.

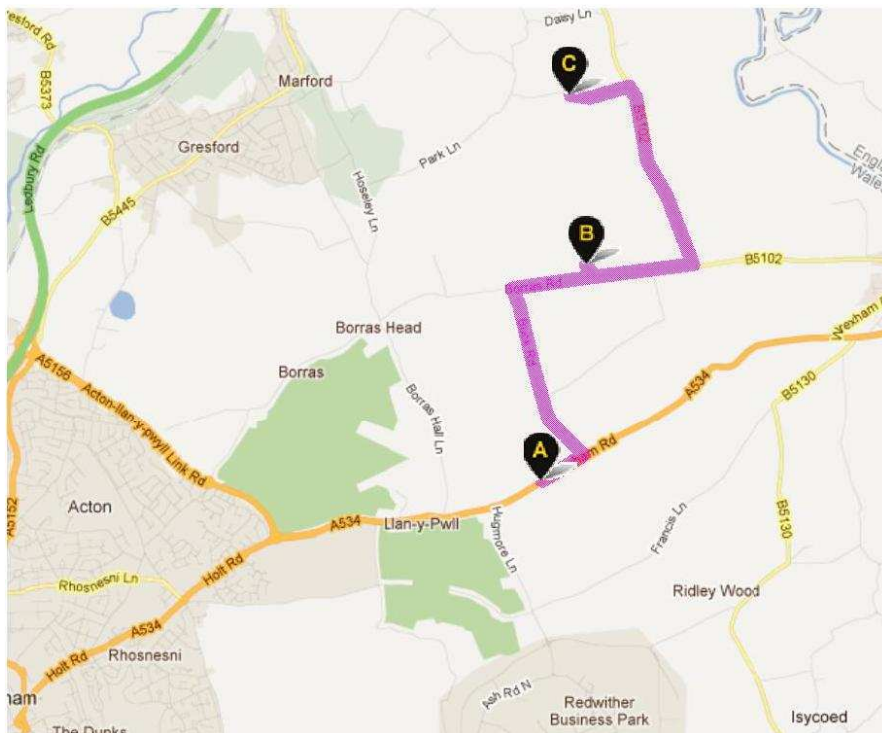
Digestate transport of the solid fraction to outlying fields used for growing fodder crops will replace solid FYM and midden compost that is currently used. Please refer to Appendix 15 which identifies the land under the stewardship of the Tomlinsons. Areas 1 & 2 are grazed and fertilised by liquid digestate by umbilical pipeline directly from site. Areas 3-6 are cereal fodder crops predominantly fertilised by solid digestate.

6.2.1 Scenario 1 – Current situation

Transport of feeds to Lower Park Farm.

Material	Movement	Volume (m ³)	Vehicle Type	Vehicle Volume (m3)	Vehicle movements	Distance per movement (miles)	Total distance (inc return)
Cow slurry	From farm to Lodge digester	11,000	-	10	0	0	0
Digestate	From Lodge digester to farm	10,000	-	10	0	0	0
Cattle Feeds (solid)	National to farm	700	HGV	20	35	100	7000
Cattle Feeds (liquid)	Local to farm	1,000	Agricultural trailer	10	100	19	3800
Total					135		10800

Map 1 - Current route of vehicles from A534 to Lower Park Farm



Current vehicle movements to the Lodge Farm / Lower Park Farm developments are as indicated above. Route from A 534 to Lower Park Farm is 3.5 miles. The distance from Lower Park Farm to Lodge Farm, is 1.9 miles.

Cow slurry is pumped from the dairy farm at Lower Park Farm to the digester pre-store at Lodge Farm resulting in no vehicle movements.

The digestate is spread from the digester directly by umbilical pipeline to fertilise the fields.

Additional nutrient is imported to the farm as animal feed. This is in liquid and solid forms which have to be 'Organic' compliant.

The solid feeds are a commodity product that may be produced from local, national or even international sources (eg peanuts).

Liquid feeds do not have the feed concentration to warrant long distance transport and so are sourced as locally as possible. The current primary source is from a cheese manufacturer in Shropshire.

The majority of the farms transport impact arises from the transport of feeds.

Transporting nutrient materials to the Lodge Farm digester for subsequent application by umbilical to land results in reduced additional transport of feeds to Lower Park Farm.

Supply of additional nutrient to the farm through the digester will result in additional grass growth and a reduction in the direct importation of nutrient as cattle feeds.

Suitable inputs are available locally and result in a significant reduction of medium and long distance transport of feeds.

Locating a digester on a farm, proximal to point of use of the digestate fertiliser, results in a significant reduction in transport.

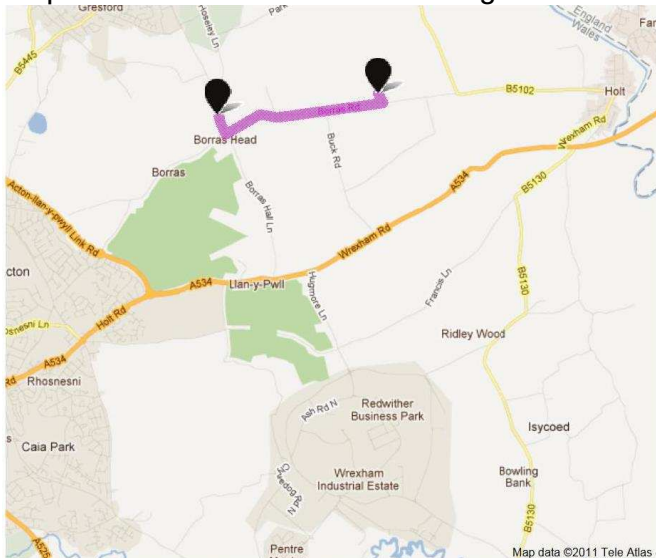
6.2.2 Scenario 2 – Supplementing farm input with local chicken litter.

Chicken litter is available from the neighbouring farm to Lodge. Transporting the litter to the Lodge site rather than to a central digester is shorter and does not require a second transport of digestate from the digester back to farm.

Material	Movement	Volume (m ³)	Vehicle Type	Vehicle Volume (m3)	Vehicle movements	Distance per movement (miles)	Total distance (inc return)
Cow slurry	From farm to Lodge digester	11,000	-	10	0	0	0
Chicken litter/Energy crop	From farm to Lodge digester	2000	Agricultural trailer	10	200	1.4	560
Digestate	From digester to farm	12,000	-	10	0	0	0
Cattle Feeds (solid)	National to farm	350	HGV	20	18	100	3600
Cattle Feeds (liquid)	Local to farm	0	Agricultural trailer	10	0	19	0
Total					218		4160

Transport of litter to Lodge Farm leads to a significant reduction in road miles and does not result in placing agricultural vehicles on main routes.

Map 2 – Local chicken farm to Lodge Farm



From LL13 9TH, Borrass to LL13 9TE, Holt
Distance: 1.3 miles | Time: 0 hr 5 min

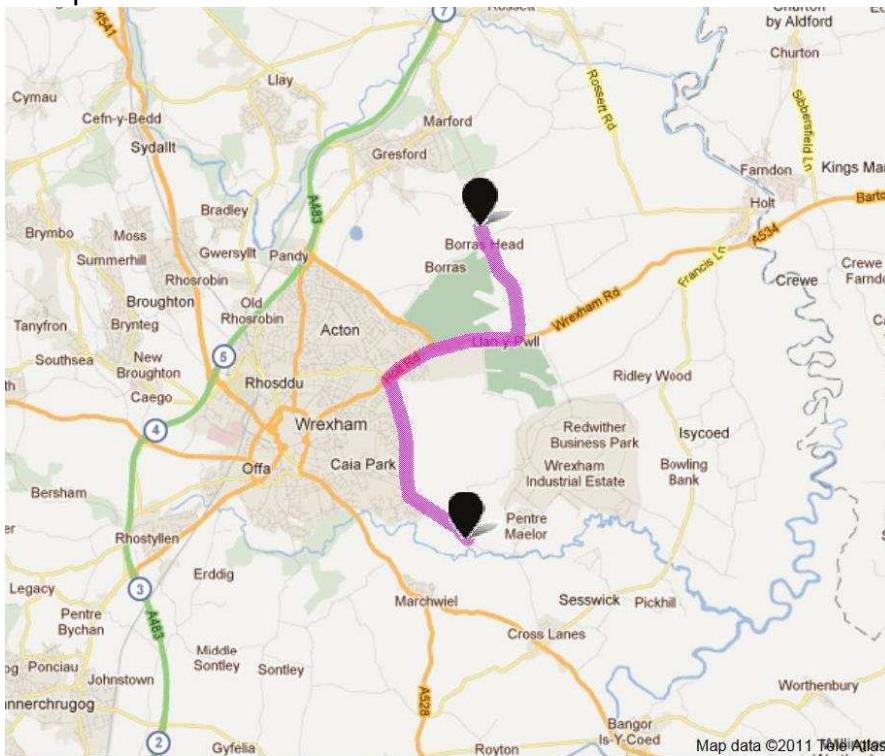
Road	Distance (miles)	Directions	Total (miles)
	0.00	Start out on Hoseley Lane	0.00
	0.15	Turn left onto Borrass Road	0.15
	1.12	Turn left	1.27

6.2.3 Scenario 3 – Transporting farm arisings as feedstock to a centralised digester.

An alternative scenario to a farm based digester is a centralised digester, importing materials from a number of sources and then exporting digestate to a farm as fertiliser. A Centralised Digester facility based at Wrexham Industrial Estate in proximity of Five Fords sewage works with local chicken litter/energy crop would create the following traffic profile.

Material	Movement	Volume (m ³)	Vehicle Type	Vehicle Volume (m ³)	Vehicle movements	Distance per movement (miles)	Total distance (inc return)
Cow slurry	From farm to industrial estate digester	11,000	Agricultural trailer	10	1100	5.2	11440
Chicken litter/Energy crop	From farm to industrial estate digester	2000	Agricultural trailer	10	200	4.2	1680
Digestate	From industrial estate digester to farm	12,000	Agricultural trailer	10	1200	5.2	12480
Cattle Feeds (solid)	National to farm	350	HGV	20	18	100	3600
Total					2518		29200

Map 3 – Local chicken Farm to Five Fords



From LL13 9TH, Borrass to LL13 0PA, Wrexham
Distance: 4.6 miles | Time: 0 hr 16 min

Slurry, transported from farms to industrial estates by tractor and agricultural tanker will result in significant vehicles movements.

Application of digestate to farm is usually undertaken by tractor tankers hauled direct to the field. HGVs are not suitable for this application.

These figures represent a small digester as at Lodge Farm. These inputs would be multiplied if a large centralised digester were located on an industrial estate for agricultural wastes from a number of farms.

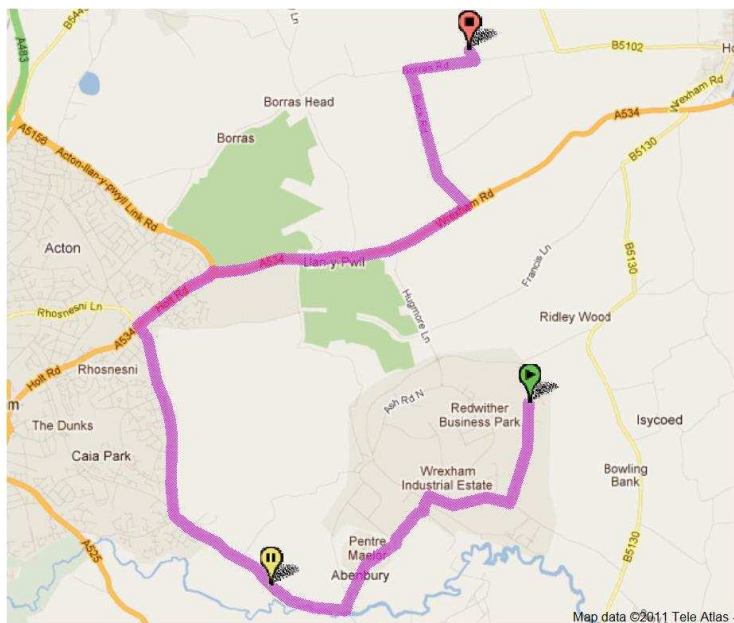
6.2.4 Scenario 4 – Transporting local food industry wastes to a centralised digester

A Centralised Digester facility based at Wrexham Industrial Estate in proximity of Five Fords sewage works, supplied with local food sludge, would create the largest traffic impact as it results in transporting across the industrial estate and then exporting the digestate to farm by smaller tractor trailer. This results in significant tractor traffic on main routes.

Material	Movement	Volume (m ³)	Vehicle Type	Vehicle Volume (m ³)	Vehicle movements	Distance per movement (miles)	Total distance (inc return)
Cow slurry	From farm to industrial estate digester	11,000	Agricultural trailer	10	1100	5.2	11440
Food factory sludge	From factory to industrial estate digester	2000	HGV	20	100	2.9	580
Digestate	From digester to farm	12,000	Agricultural trailer	10	1200	5.2	12480
Cattle Feeds (solid)	National to farm	350	HGV	20	18	100	3600
Total					2418		28100

Transporting industrial food wastes to a digester rather than direct to field allows HGVs to be used as there is no direct access to field required. This results in reduced transport in comparison to direct application of the wastes to land. However, the digestate still has to be transported from a centralised digester to field by tractor and trailer.

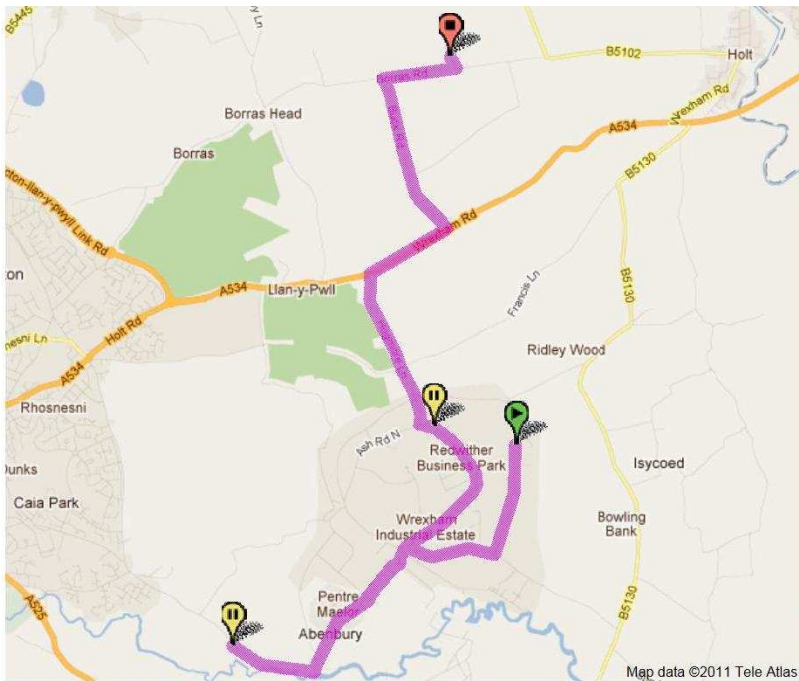
Map 4 – Wrexham Industrial Estate to Lodge Farm via Five Fords



From LL13 9UT, Wrexham Industrial Estate via LL13 0PA, Wrexham to LL13 9TE, Holt
Distance: 8.2 miles | Time: 0 hr 29 min

Transporting industrial materials to a centralised digester rather than direct to point of use at a farm results in double handling.

Map 5 – Wrexham Industrial Estate to Lodge Farm via Five Fords and Industrial Estate



From LL13 9UT, Wrexham Industrial Estate via LL13 0PA, Wrexham via LL13 9UA, Wrexham Industrial Estate to LL13 9TE, Holt
Distance: 7.9 miles | Time: 0 hr 32 min

The shorter route from the industrial estate to Lodge Farm would result in agricultural traffic on the estate itself.

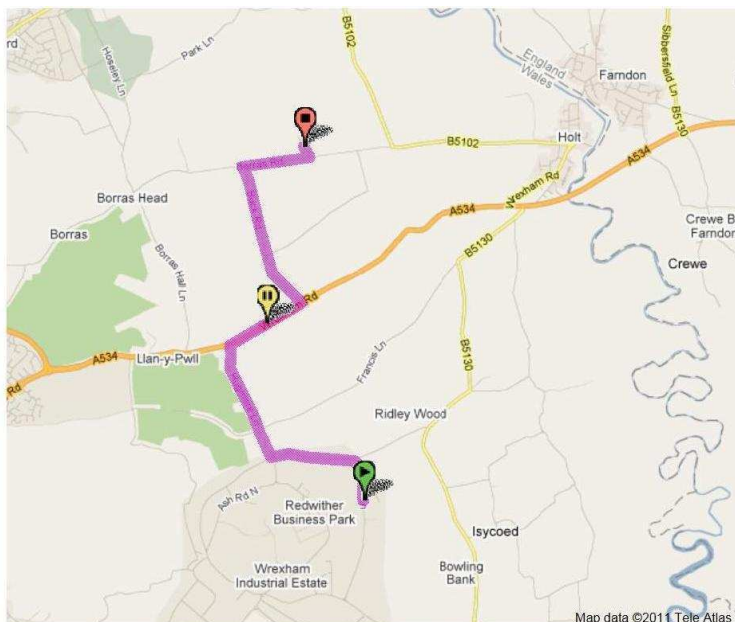
6.2.5 Scenario 5 – Transporting local food wastes to Lodge Farm

A digester facility based at Lodge Farm with local food sludge from Wrexham Ind Est, served by HGV results in a reduced transport requirement. There is a considerably reduced traffic impact in comparison to using a centralised digester.

Material	Movement	Volume (m ³)	Vehicle Type	Vehicle Volume (m3)	Vehicle movements	Distance per movement (miles)	Total distance (inc return)
Cow slurry	From farm to Lodge digester	11,000	-	10	0	0	0
Food factory sludge	From factory to Lodge digester	2000	HGV trailer	20	100	3.5	700
Digestate	From digester to farm	12,000	-	10	0	0	0
Cattle Feeds (solid)	National to farm	350	HGV	20	18	100	3600
Total					118		4300

As the farm is restricted to Organic cattle feeds it is currently required to haul eligible materials from distance.

Map 6 – Route from Wrexham Industrial Estate to Lodge Farm



From LL13 9UT, Wrexham Industrial Estate via LL13 9SH, Holt to LL13 9TE, Holt
Distance: 3.5 miles | Time: 0 hr 13 min

Using food wastes to feed the digester and produce nutrient to grow more grass will reduce the import requirement for low strength feeds (eg cheese whey).

It is demonstrated that transporting wastes to the Lodge digester will lead to traffic reduction rather than traffic increase. All materials that are used as a feedstock to the digester will already be transported by road in any case.

Specifically to Lodge Farm, digestate from a central digester will likely be non-compliant to its Organic status.

The transport distance from a large food producer on Wrexham Industrial Estate to Lodge Farm is a similar distance to a route from one side of the industrial estate to the other.

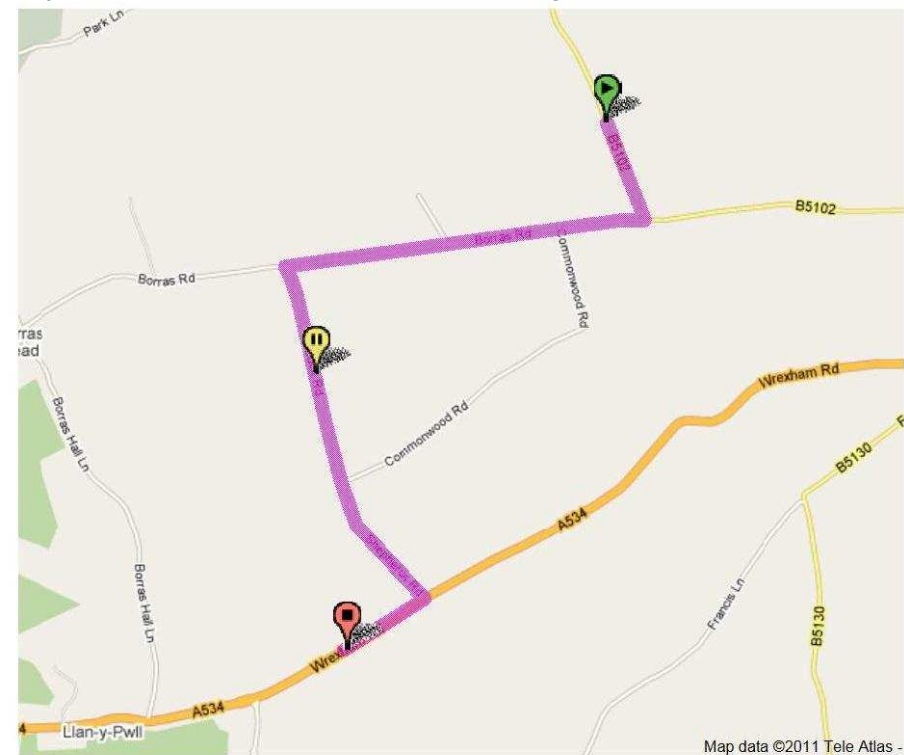
6.3 Local Traffic Character

An HGV haulage business R F Bellis Haulage Ltd has operated from, Brook Lawn, Common Wood, Holt, Wrexham, LL13 9SY for a number of years. Vehicles adopt a route along Borrás Road, past the entrance to Lodge Farm, turning on to Buck Road en-route to access the A534.

Wrexham Landmap Supplementary Planning Guidance, Landscape Character Area 13c - Dee Terraces, specifies the land area surrounding Holt as “Horticultural and intensive farming uses”. It specifies the cultural character of the area as “Easily accessible area strongly affected by transport routes”.

Therefore, HGV traffic is characteristic of the road network local to Lodge Farm.

Map 7 – Access route from Bellis Haulage to A534



From LL13 9SY, Holt via Buck Road, Holt to LL13 9SH, Holt
Distance: 2.4 miles | Time: 0 hr 8 min

Road	Distance (miles)	Directions	Total (miles)
B5102	0.00	Start out on Rossett Road	0.00
	0.26	Turn right onto Borrás Road	0.26
	0.92	Turn left onto Buck Road	1.18

As an area characteristic of agriculture and strongly affected by transport routes with a history of hosting HGV movements, it is considered that a small number of vehicle movements in support of a farm diversification into renewable energy, wholly consistent with the existing character of road traffic in the area.

6.4 Traffic Routing Plan

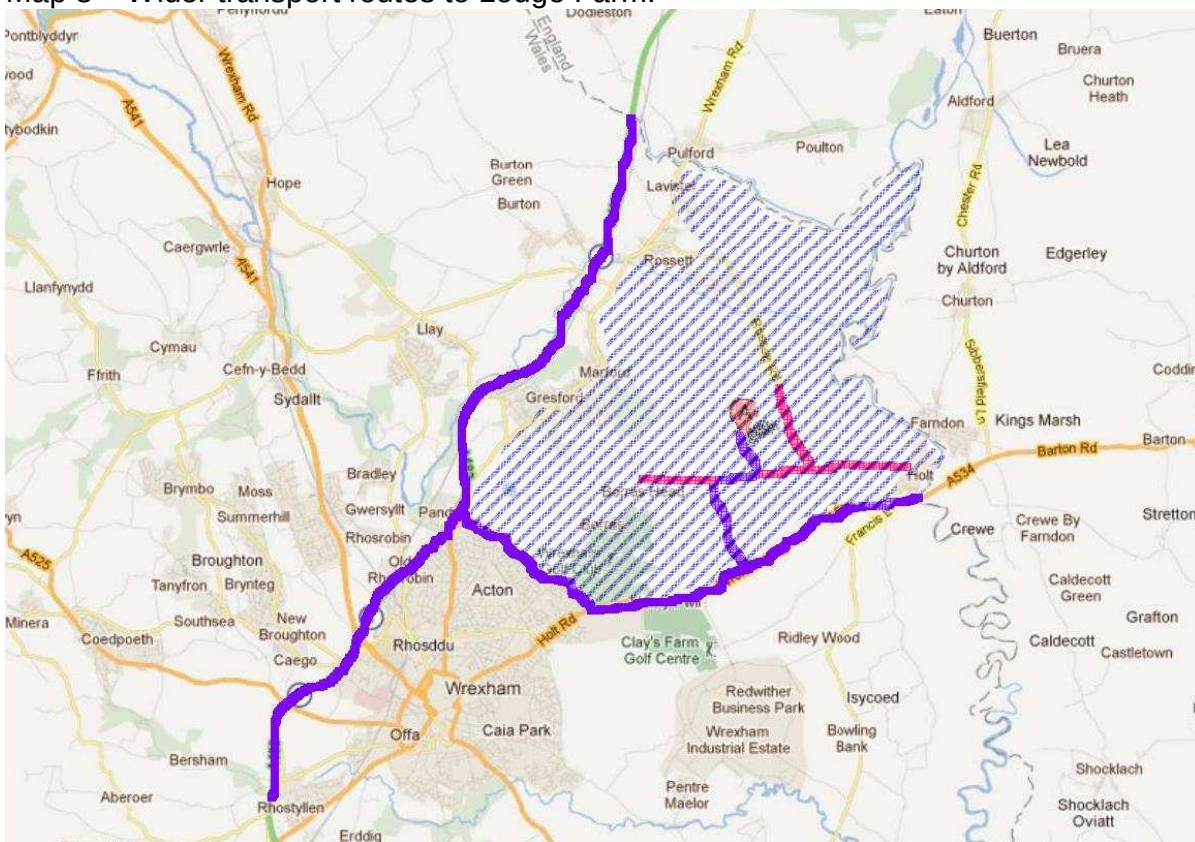
Due to concern that occasional heavy traffic may pass through Holt village centre, a traffic routing plan will be adopted, as described in the letter of N Blackie, 1st September 2011.

HGVs will approach site from the A534 via Buck road and Borrás Road. On exit, HGVs will turn right onto Borrás Road and access the A534 trunk road by turning left onto Buck Road.

This route is the shortest and easiest access to the A534.

The nature of control is suggested as in the letter of the 1st September 2011 provided following pre-application discussion.

Map 8 – Wider transport routes to Lodge Farm.



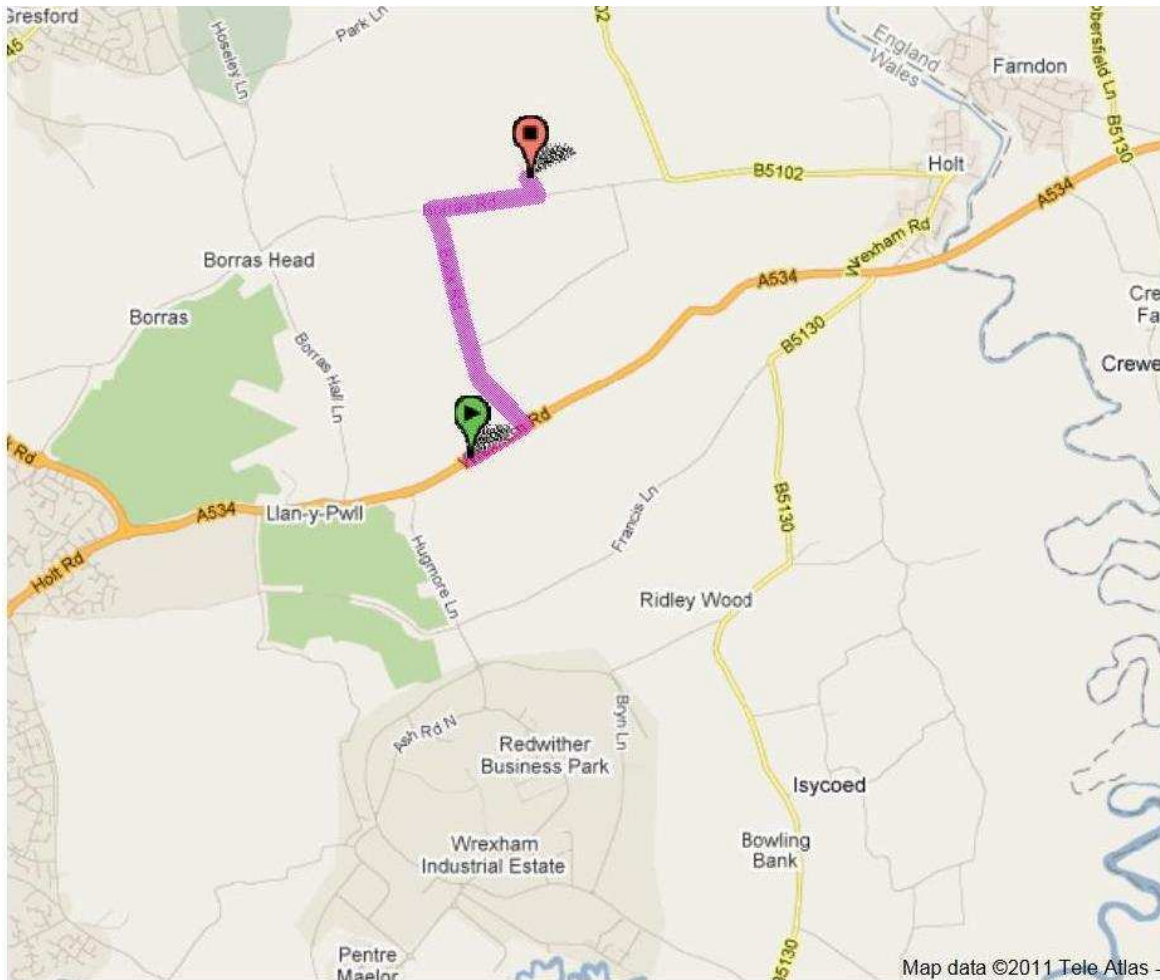
Access to the site by HGV traffic will be via the routes marked in blue.

Routes marked in red will not be used for HGV traffic. Visitors to site will be made aware in advance that the route that should be adopted to and from site.

The hatched area reflects land that is so close to the site that it is in effect accessible only by the routes that are barred to traffic coming from further afield. Thus if coming from Burton, traffic would be obliged to use the required route: but if coming from Borrás, traffic would take the shortest route. The hatched area follows the "inner" edges of the various settlements that are inside the trunk route A483, so traffic from them would still follow the preferred route.

Map 9 – Lodge Farm to A534

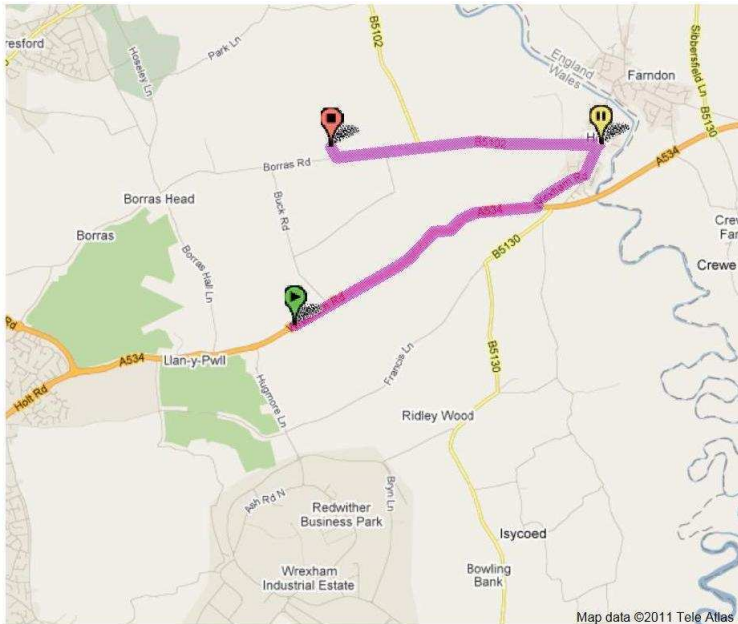
Desired route avoiding sharp bends, congestion and traffic calming measures in Holt village.



From LL13 9SH, Holt **to** LL13 9TE, Holt
Distance: 1.7 miles | **Time:** 0 hr 6 min

This is the existing route used for traffic to Lodge and Lower Park Farms and that used by traffic from Bellis Haulage, Commonwood.

Undesirable route.

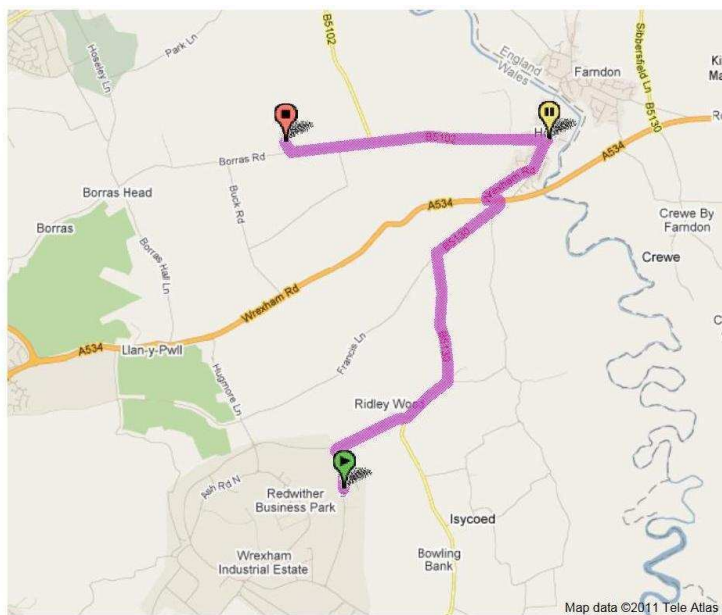


From LL13 9SH, Holt **via** Holt, Wrexham **to** LL13 9TE, Holt
Distance: 4.0 miles | **Time:** 0 hr 10 min

The route to Wrexham via Holt is 1 mile longer, requires negotiating numerous sharp bends, traffic calming measures and has greater traffic.

Map 11 – Wrexham food producer to Lodge Farm via Holt.

Undesirable Route.



From LL13 9UT, Wrexham Industrial Estate **via** Holt, Wrexham **to** LL13 9TE, Holt
Distance: 4.8 miles | **Time:** 0 hr 14 min

The route to Lodge Farm through Holt is 1.3 miles further requires negotiating numerous sharp bends, traffic calming measures and has greater traffic.

This route would not be followed and is suggested as restricted to suppliers to the Lodge Farm site.

7. Additional Environmental Impacts

Noise, odour, dust, vibration, light levels produced by the plant can only be those pertaining to the specification of the plant as has already been granted by previous determination.

The plant operates within the constraints of the Environmental Permitting Scheme regulated by the Environment Agency and operates a complaints procedure.

7.1 Noise & Vibration

WAG Practice Guidance - Planning Implications of Renewable and Low Carbon Energy 5.4.3 "*The AD process is not inherently noisy*". Appropriate site layout and design was undertaken particularly in locating the most noisy item, the generator equipment, and incorporating noise attenuation features within the roof and walls of buildings to reduce noise break-out. The whole site is located away from sensitive receptors. The nearest dwelling is 500m.

The generators have a manufacturer specified noise output of 78-80dBA @ 1m and 63-65dBA @ 7m in free field conditions. Adding a second generator will increase the levels by 3dBA to a maximum of 83 dBA @ 1m and 68 dBA @ 7m. Applying the rule of a 6dB attenuation over each doubling of distance results in a noise level of 30dB @500m, the distance of the nearest receptors. TAN 11 equates 30 dB(A) to the background noise level in a living room. Completion of the permitted developments would reduce current noise levels.

The application is for a maximum of an additional 2,000m³ of input per annum. This represents an increase of only 18% of input material. Pumps for system agitation would operate as currently as the digester tank remains full at all times, irrespective of throughput rate. The operation of the pump for the gas store pressurisation would also remain unaffected.

Input pumps would operate for the additional 18% in direct relation to volume. These pumps, currently external, would now be located within the reception building.

Using input materials such as energy crop and chicken litter that are high dry matter, and digest significantly, would result in an additional digestate output of less than 10%. Separator operation would increase to approximately 99 seconds every six minutes instead of 90.

A back-up generator has historically been installed at Lodge Farm. This is no longer required as the AD plant provides back-up generation in the event of a network failure resulting in a replacement of existing noise.

Completion of the outstanding Permitted construction on site will result in further noise shielding as will landscape planting.

When the applicants became aware of noise becoming audible during night time, measures were undertaken promptly to rectify the issue. Subsequently, the applicant has re-designed the generator in order to replace a cooling fan with a quieter, more efficient water cooling system.

It is intended to construct a small clay bund, approximately 1m in height which will be grassed and provide further noise attenuation and deflection.

7.2 Dust

Materials fed to the digester are liquids transferred by pipe or solids deposited within a building. Therefore opportunities for dust are limited. There are a very small number of vehicles and each will be sprayed down before exiting the building to remove wheel debris.

The solid digestate is damp and not prone to produce dust emission during separation or in transport.

7.3 Lighting

The facility will not be lit outside of operating hours of 7am to 7pm other than in the event of maintenance activity.

7.4 Odour

Anaerobic digestion is an effective odour abatement technology³. Currently, digestate is stored in an open lagoon and inputs stored in open bays. No complaints have arisen during 18 months operation of the plant. The nearest receptor is 500m from the plant.

Potential impacts from odour will be further reduced by completing the development of the covered stores and enclosed reception building. The reception building will have a negative pressure environment preventing the escape of odours.

As the site is only capable of processing an additional 2,000 m³ per annum, there will be an average of the reception building doors opening only once a day. The 2,000 m³ pa of additional input represents only 15% of the process total. The majority of these materials will be liquid industrial sludges delivered by tanker. This is transferred by pipeline straight into the enclosed digester system. Therefore there is no opportunity for increased odour.

Solid feedstocks potentially entering the plant will be energy crop, surplus or soiled crops, poultry litter or industrial food wastes. Many of these are currently spread direct to land untreated as there is no facility in the region with the capability to process the materials. Environmental impacts from this continued practice are considerably greater than result from treatment in an AD plant. It is typical for materials that decompose uncontrolled in fields, in heaps or when applied direct to the soil to release methane and nitrogen compounds to the atmosphere. Chicken litter is a material high in ammonia which is released during application to land and highly odorous. Digestion converts the volatile ammonia into a stable nitrate. The 2,000 tonnes of additional processing capacity is approximately equal to the litter arising from one large chicken farm each year which will currently be stored in open heaps and release uncontrolled emissions of methane and nitrogen compounds to air and surface water.

³ Ubeda Y.; Neyrinck R.; Calvet S.; et al. SEP 22-24, 2010. Odour evaluation of a dairy farm with anaerobic digestion. Ed: DelRosso R. Conference: 3rd Biannual International Conference on Environmental Odour Monitoring and Control (NOSE 2010)

Energy crop and litter would be stored for a few days within the reception building in walled bays. These materials will currently be stored in open heaps, open buildings or silage clamps. Industrial food wastes will be loaded directly into the system immediately upon arrival. The reception building will operate under negative pressure with 2 building volume changes per hour. The air will be used as supply to the generator and burnt.

There will be a maximum average of 1 vehicle movement per day. Even if all deliveries were solid industrial food wastes, the doors would open an average of once a day. In operation, the majority of deliveries will be liquids delivered by tanker.

The digestate separator is currently operating in open air. The consents have the separator located outside the building. This will be brought into the building to contain odour and particle release.

8. Development Compliance

8.1 Fundamental Planning Policy

A core aim of the revised Planning Policy Wales Edition 4 - Chapter 12 Infrastructure and Services is the development of measures to tackle the causes of climate change. This aim is met directly resulting from the removal of Conditions restricting the potential of the Lodge Farm digester to contribute to its full potential.

- to promote the generation and use of energy from renewable and low carbon energy sources at all scales and promote energy efficiency, especially as a means to secure zero or low carbon developments and to tackle the causes of climate change;

It is noted within the introduction to the Wrexham UDP 1.3 *“Factors affecting the relevance and performance of the Plan's policies and underlying objectives are continuously monitored. Within the Plan period there is bound to be uncertainty in the availability of resources to carry out policies. Trends in population, housing and employment might also change.”*

During the decade since the current UDP was adopted, issues relating to climate change, resource efficiency, fuel security, economic development, environmental protection and food poverty have all become highly prominent.

On-farm anaerobic digestion is a sui-generis development that represents best practice in sustainable development across a range of indicators additional to waste management.

In consideration of this, AD is deemed suitable for location on farm within the subsequently developed Regional Waste Plan.

North Wales Regional Waste Plan November 2003 – 2013

Anaerobic Digestion

20.6 Smaller scale facilities could be located on farms

23.5 The need to plan for facilities to deal with our waste goes beyond the waste collected by Waste Authorities, as household waste represents approximately only 20% of the total waste generated in the Region. The remainder is mainly waste generated by industries and businesses in the Private Sector. This Plan deals with all controlled waste and therefore it is important to note that “Wise About Waste” also contains non-statutory targets which relate to encouraging businesses in the private and community sector to reduce the amount of waste they generate and to increase recycling.

8.2 Planning Policy Wales - Infrastructure and Services

Planning Policy Wales highlights the need for new approaches to planning for facilities required to combat the consequences of climate change. The scale and nature of operation of the Lodge Farm demonstrator is such a development in need of support.

Planning Policy Wales Edition 4 - Chapter 12 Infrastructure and Services

12.1.4 The Assembly Government aims to secure the environmental and telecommunications infrastructure necessary to achieve sustainable development objectives, while minimising adverse impacts on the environment, health and communities. **New approaches to infrastructure will be needed in light of the consequences of climate change.** The objectives are:

- **to ensure that appropriate facilities are established to reduce, re-use, recover** and, where necessary, safely dispose of waste, so as to meet the Assembly Government's objectives for waste management;
- **to promote the generation and use of energy from renewable and low carbon energy sources at all scales** and promote energy efficiency, especially as a means to secure zero or low carbon developments and to tackle the causes of climate change;

12.1.5 The planning system has an important part to play in ensuring that the infrastructure on which communities and businesses depend is adequate to accommodate proposed development so as to minimise risk to human health and the environment and prevent pollution at source. **This includes minimising the impacts associated with climate change.**

Currently, there is no infrastructure in the Region to process liquid food wastes in line with the waste hierarchy and Towards Zero Waste. This should be considered when determining the application for Lodge Farm to use a small part of its capacity in a most efficient manner.

12.1.6 **The capacity of existing infrastructure, and the need for additional facilities, should be taken into account in the preparation of development plans and the consideration of planning applications.** In general, local planning authorities should seek to **maximise the use of existing infrastructure** and should **consider how the provision of different types of infrastructure can be co-ordinated.**

The Lodge Farm digester is not only a processing facility in its own right but also a technology demonstrator contributing towards the strengthening scale and mix of renewable energy production in Wales and the UK. At farm scale, this also contributes towards the overarching aims of sustainable development.

12.8.6 **The Assembly Government's aim is to secure an appropriate mix of energy provision for Wales,** whilst avoiding, and where possible minimising environmental, social and economic impacts. This will be achieved through action on energy efficiency and **strengthening renewable energy production.** This forms part of the Assembly Government's aim to secure the strongest economic development policies to underpin growth and prosperity in Wales recognising the importance of clean energy and the efficient use of natural resources, both as an economic driver and a **commitment to sustainable development.**

Lodge Farm is a CHP operation. The heat used in the farm buildings effectively doubles the efficiency of the process in comparison to electricity only plants.

12.8.8 The Assembly Government is committed to using the planning system to:

- **optimise renewable energy generation;** - **optimise low carbon energy generation;**
- **facilitate combined heat and power systems (and combined cooling, heat and power) where feasible; and**
- **recognise that the benefits of renewable energy are part of the overall commitment to tackle climate change by reducing greenhouse gas emissions as well as increasing energy security.**

The Lodge Farm extension is directly supported by 12.8.9 which provides direct guidance to planning authorities to support such developments.

12.8.9 Local planning authorities should facilitate the development of all forms of renewable and low carbon energy to move towards a low carbon economy to help to tackle the causes of climate change.

Specifically, they should make positive provision by:

- **considering the contribution that their area can make towards developing and facilitating renewable and low carbon energy, and ensuring that development plan policies enable this contribution to be delivered;**
- ensuring that development control decisions are consistent with national and international climate change obligations, including contributions to renewable energy targets and aspirations;
- recognising the environmental, economic and social opportunities that the use of renewable energy resources can make to planning for sustainability

12.9 Development plans and renewable and low carbon energy

12.9.1 Local planning authorities should plan positively for all forms of renewable and low energy development using up to date and appropriate evidence.

12.9.2 Local planning authorities should guide appropriate renewable and low carbon energy development by undertaking an assessment of the potential of all renewable energy resources and renewable and low carbon energy opportunities within their area, and include appropriate policies in development plans.

12.9.6 Other than onshore wind projects, the most likely form of renewable energy installations to be considered through the planning system will be strategic scale biomass projects. The sustainability of the sources of biomass fuel is not a planning consideration.

Lodge Farm is directly supported by 12.10 as a contributor to national and international targets in regard to greenhouse gas reductions, the wider environmental, social and economic benefits, embedded generation, minimising impacts on local communities with minimal impact on the transport network.

12.10 Development control and renewable and low carbon energy

12.10.1 In determining applications for renewable and low carbon energy development and associated infrastructure local planning authorities should take into account:

- the contribution a proposal will play in meeting identified national, UK and European targets and potential for renewable energy, including the contribution to cutting greenhouse gas emissions;
- the wider environmental, social and economic benefits and opportunities from renewable and low carbon energy development;
- the need to minimise impacts on local communities, to safeguard quality of life for existing and future generations;
- ways to avoid, mitigate or compensate identified adverse impacts;
- the impacts of climate change on the location, design, build and operation of renewable and low carbon energy development. In doing so consider whether measures to adapt to climate change impacts give rise to additional impacts;
- grid connection issues where renewable (electricity) energy developments are proposed; and
- the capacity of, and effects on, the transportation network relating to the construction and operation of the proposal.

The scale of the CHP (encouraged by 12.10.2) development at Lodge Farm is directly in keeping with the agricultural nature of the site and scaled to fit the requirement of farm nutrient. Importing materials results in improved climate change performance and should be supported. Conditions have been suggested to ensure that the nature of the development is retained.

12.10.2 There may be opportunities to promote Combined Heat and Power (CHP) schemes and the Welsh Assembly Government encourages these projects as part of the imperative to reduce carbon emissions.

12.10.3 Developers for renewable and low carbon energy developments should seek to avoid, or where possible minimise adverse impacts through careful consideration of location, scale, design and other measures.

There are no other similar renewable energy generators in the Region upon which to impact.

12.10.4 Local planning authorities should, where relevant, consider the likely impact of proposed renewable and low carbon energy development on existing or other proposed renewable and low carbon energy developments and sources. In such cases they should consider amendments so as to render them acceptable.

Currently, Conditions rendered are prohibitive rather than constructive towards securing the benefits and opportunities of the renewable energy development proposal.

12.10.6 Local authorities should use planning conditions or obligations to mitigate impacts, and secure the benefits and opportunities arising from a renewable or low carbon energy development proposal.

8.3 Wider Planning Policy of Sustainability and Economic Development

The overall activity of the development is supported extensively by national and local planning policy in respect to generation of renewable energy, farm diversification, rural economic development, employment, sustainable development, bio-diversity, maintaining traditional local character and waste management. This is embodied within the concept of Sustainable Development, adopted by the Government of Wales Act 1998.

Specifically, the latest edition of Planning Policy Wales is focused on tackling climate change.

Speaking about Planning Policy Wales (8th June 2010), the Environment Minister, Jane Davidson said:

“The main driver for this consolidated version of Planning Policy Wales is to further embed the need to tackle climate change into the planning system. Climate change is one of the most serious global threats facing us today. As a society we must take action to minimise the causes of global climate change as well as understand and deal with the consequences of inevitable change.

“Climate change will have potentially profound environmental, economic and social justice implications and failure to address it will make planning for sustainable development impossible. As a small industrialised nation, Wales has the opportunity to lead the way in tackling climate change, and the planning system must play its part.”

The Lodge Farm proposal is supported by the following elements of Planning Policy Wales.

Planning Policy Wales Edition 4 - February 2011 - Chapter 4 Planning for Sustainability

4.1.2 Sustainable development in Wales means enhancing the economic, social and environmental well-being of people and communities, achieving a better quality of life for our own and future generations in ways which:

- promote social justice and **equality of opportunity**; and
- **enhance the natural and cultural environment and respect its limits - using only our fair share of the earth’s resources and sustaining our cultural legacy.**

4.1.3 This commitment is based upon a duty under Section 79 of the Government of Wales Act 2006. Welsh Ministers are required to make, keep under review, and revise a sustainable development scheme setting out how they propose to promote sustainable development in the exercise of their functions. This duty was first introduced by Section 121 of the Government of Wales Act 1998. One Wales: One Planet : The Sustainable Development Scheme of the Welsh Assembly Government (2009) outlines the commitments the Assembly Government will make towards sustainable development, the principles it will observe and some of the processes it will apply in promoting sustainable development in all its work. The Sustainable Development Action Plan details how the Welsh Assembly Government will implement the commitments in the scheme.

4.1.5 The Welsh Assembly Government, alongside the UK Government, the Scottish Government and Northern Ireland Administration have agreed on a set of shared UK principles that will help us achieve our sustainable development purpose:

- **living within environmental limits:** by setting out a pathway to using only our fair share of the earth’s resources and becoming a One Planet nation within the lifetime of a generation;

- ensuring a strong, healthy and just society: our focus on how a sustainable approach will improve the quality of life and well-being of the people of Wales and especially those in our less well-off communities;
- **achieve a sustainable economy:** by setting out how we want to transform our economy so that it is low carbon, low waste;
- promoting good governance: through confirming sustainable development as the central organising principle of the Welsh Assembly Government and through encouraging and enabling others to embrace sustainable development as their central organising principle; and
- **using sound science responsibly:** through the use of our sustainable development principles as part of our evidence-based approach to policy making.

4.1.6 The planning system has a fundamental role in delivering sustainable development in Wales. It must help in the process of balancing and integrating these objectives in order to meet current development needs while safeguarding those of the future. **In particular the planning system, through both development plans and the development control process, must provide for homes, infrastructure, investment and jobs in a way which is consistent with sustainability principles and the urgent need to tackle climate change.**

4.1.7 The Assembly Government's Environment Strategy and Action Plan set out the long term strategy for the Welsh environment. The five main themes of the Strategy are:

- **addressing climate change;**
- **sustainable resource use;**
- **distinctive biodiversity, landscapes and seascapes;**
- **the local environment; and**
- **environmental hazards.**

The Action Plan contains details of specific additional actions, including changes to planning policy, to be taken to deliver the outcomes in the Environment Strategy.

4.2 Planning for climate change

4.2.1 Tackling climate change is a fundamental part of delivering sustainable development. Climate change is one of the most important challenges facing the world and the Assembly Government has made a commitment to tackling climate change, resolving that the Government and people of Wales will play the fullest possible part in reducing its carbon footprint

4.2.7 Planning to minimise the causes of climate change means taking decisive action to move towards a low carbon economy by proactively reducing the demand for energy, facilitating the delivery of new and more sustainable forms of energy provision at all scales and minimising the emissions of greenhouse gases to the atmosphere.

4.2.8 Planning for the consequences of climate change means recognising that changes to our climate over the next 30 or 40 years caused by past emissions are largely unavoidable. Failure to prepare for the inevitable impacts through adaptation measures will lead to further vulnerability for communities through damage to property, infrastructure and the economy. We need to plan for these impacts, reducing the vulnerability of our natural environment and built environment to climate change.

4.2.10 Planning for climate change must be carried out in a way that is consistent with sustainability principles, and in a way which does not prejudice future action to tackle climate change, by integrating solutions to tackle the causes and consequences of climate change. This will require close co-operation across all sectors and communities.

The request to maximise the efficiency of the Lodge farm digester fulfils key policy objectives related to combating climate change, diversity and greening of economic opportunity, sustainable use of materials, best practice environmental management. Policy states this should be encouraged.

4.4 Key policy objectives

4.4.2 Planning policies and proposals should:

- **Support the need to tackle the causes of climate change by moving towards a low carbon economy. This includes facilitating development that reduces emissions of greenhouse gases in a sustainable manner, provides for renewable and low carbon energy sources at all scales and facilitates low and zero carbon developments**
- **Maximise the use of renewable resources, including sustainable materials. The use of renewable resources and of sustainably produced materials from local sources should be encouraged.**
- **Encourage opportunities to reduce waste and all forms of pollution and promote good environmental management and best environmental practice**
- ***Support initiative and innovation and avoid placing unnecessary burdens on enterprises (especially small and medium sized firms) so as to enhance the economic success of both urban and rural areas, helping businesses to maximise their competitiveness.***
- **Promote quality, lasting, environmentally-sound and flexible employment opportunities**
- **Respect and encourage diversity in the local economy.**
- **Promote a greener economy and social enterprises**

Within the rural environment, the Lodge Farm digester provides a innovative technology economic diversification complementary to the standard farming complex which is one of the core WAG economic priority sectors .

4.5 Priorities for urban and rural areas

4.5.3 Priorities for rural areas are to secure:

- **a thriving and diverse local economy where agriculture-related activities are complemented by sustainable tourism and other forms of employment in a working countryside;**

4.7.16 The construction of new buildings in a Green Belt or in a locally designated green wedge is inappropriate development unless it is for the following purposes:

- **justified agricultural and forestry needs;**
- **small scale diversification within farm complexes where this is run as part of the farm business.**

The Lodge Farm digester, apart from fulfilling a direct role in combating climate change is also a demonstrator for patented technology, directly fulfilling The Assembly Government's objectives for economic development

7.1.5

- **enhance the economic success of both urban areas and the countryside, helping businesses to maximise their competitiveness;**
- **support initiative and avoid placing unnecessary burdens on enterprise;**
- **respect and encourage diversity in the local economy, for example in rural areas encouraging farm diversification;**
- **promote the exploitation of new technologies which can provide new opportunities**
- **ensure that development for enterprise and employment uses is in line with sustainability principles and respects the environment in its location, scale and design, especially so as to address climate change.**

The Lodge Farm digester is an innovative, farm diversification directly in agreement with the objectives of Planning Policy Wales to promote diversification in the rural economy.

7.3 Promoting diversification in the rural economy

7.3.1 In rural areas local authorities should prepare an integrated rural development strategy to facilitate diversification of the rural economy, seeking to accommodate both traditional rural industries and new enterprises. Many commercial and light manufacturing activities (for example the processing of agricultural products and woodland products) can be located in rural areas without causing unacceptable disturbance or other adverse effects. Small-scale enterprises have a vital role in promoting healthy economic activity in rural areas, which can contribute to both local and national competitiveness. New businesses in rural areas are essential to sustain and improve rural communities.

7.3.2 While some employment can be created in rural locations by the re-use of existing buildings, new development will be required in many parts of rural Wales. New development sites are likely to be small and, with the exception of farm diversification and agricultural development to which separate criteria apply. The expansion of existing businesses located in the open countryside should be supported provided there are no unacceptable impacts on local amenity.

7.3.3 Local planning authorities should adopt a positive approach to development associated with farm diversification in rural areas. While initial consideration should be given to adapting existing farm buildings, the provision of a sensitively designed new building on a working farm within existing farm complexes may be appropriate where a conversion opportunity does not exist.

7.4 Promoting the green economy, business and technology clusters and social enterprises

7.4.2 Local planning authorities should also seek to support the development of innovative business and technology clusters.

8.4 Facility Location

The digester is located only a few miles from Wrexham Industrial Estate and less than a mile from the A534, listed within the Wrexham UDP as a "Primary Highway Network". The site location therefore complies with the description promoted as a County Borough attribute within the UDP, Plan Area 1.4 "Strategically situated in a "gateway" to North Wales, the County Borough is readily accessible from the main commercial centres of the north west and midlands of England."

As the facility is a few miles from one of the largest concentrations of food industry in the country, it is well placed to provide resource in support of this primary economic activity.

The digester, located centrally within a farm landblock, is able to create traffic savings by spreading the resultant digestate direct to land by umbilical pipeline. The digester is located within a traditionally agricultural area with access to agricultural wastes, surplus crops etc. It is within 2 miles of 2 chicken sheds which currently spread chicken litter to land untreated for example.

Therefore the location of the development complies with UDP policies;

THE BROAD LOCATION OF DEVELOPMENT

Policy PS2 Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment.

Policy PS4 Development should maintain the existing settlement pattern and character and be integrated with the existing transport network to help reduce the overall need to travel.

8.5 Local Landscape Character

The character of the development site is one of agricultural land under pressure from residential development, resulting in the loss of the highest quality agricultural land and the traditional farming culture of the area. It is recognised that transport links are a key characteristic of the area.

Minor changes in a single farm traffic profile will not materially affect the character of the area. The benefits of retaining a viable organic farm contribute considerably more towards the Key characteristics of landscape, ecological, visual, and cultural character, mitigating the sensitivity of the core Supplementary Guidance advice to maintain traditional farming.

As such, the local Supplementary Guidance is in support of the application.

Wrexham Landmap Supplementary Planning Guidance : Landscape Character Area 13c – Dee Terraces

Key characteristics

Visual character:

- Uniformly low-lying flat open farmland with long views where hedgerows permit
- Field pattern is medium to large scale, with fields regular and semi regular in shape
- Dispersed pattern of attractive villages, hamlets and farms, traditionally of red brick
- Rural villages - Rossett and Holt, both under development pressure weakening character

Ecological character:

- Much of area is agriculturally improved grassland, intensively farmed with some arable cultivation, of little biodiversity interest apart from green network of hedges and mature hedgerow trees

Dee Terraces summary

- Field ponds, roadside and field ditches common
- Abundant hedges and hedgerow trees
- Dispersed farms, hamlets and villages, often built in red brick
- Horticultural and intensive farming uses surround Holt on grade 1 farmland
- Rural character under pressure

Cultural character:

- Attractive rural villages of Rossett and Holt, popular with commuters
- Part of wider Welsh Maelor cultural area, with declining role of traditional agricultural land uses and increasing commuter influence
- Easily accessible area strongly affected by transport routes

Landscape sensitivity:

The integrity of the Dee Terraces landscape is highly vulnerable to continuing development and recreational pressures, and to economic changes which threaten traditional farming.

In summary, it is concluded that the digester is well located a close distance to an industrial area, with links to the strategic trunk roads identified in WCBC policy within an area noted for its traffic links but with the rural character under pressure.

Maintaining the economic viability of the farm maintains the key characteristics of the area.

8.6 Transport Policy

Wrexham UDP states;

10.1 The movement of people and goods cannot be considered in isolation from other aspects of land use development.

Policy T6 The design of road improvement schemes; the implementation of traffic management proposals; and the control of development adjacent to the primary and core highway network **will have regard to the need to ensure the free and safe flow of traffic**. Routes forming the primary and core network will take precedence over other routes and there will be limitations on access, parking, crossing and turning movements.

Primary Highway Network

A534 Holt (Cheshire Boundary) to Llanypwll (A5156)

The location of large industrial scale anaerobic digesters (which according to DEFRA research benefit from addition of cattle slurry) and importing slurry and energy crop, on industrial estates, will lead to a significant increase in slow moving agricultural vehicle traffic on primary routes. Export of digestate from a central digester to farms would also result in this. This would impact on the free and safe flow of traffic on the Primary Highway Network A534. This is contrary to UDP Policy T6 and also;

TAN 18

8.3 Planning authorities should use development plan policies and development control decisions to reduce the need to use trunk roads and other through routes for short local journeys,

8.12 Development which attracts substantial movements of freight (including large scale warehousing, distribution and manufacturing which uses bulky raw materials or produces bulky products) should be located away from congested inner areas and residential neighbourhoods. Development plans should identify and allocate sites for distribution, warehousing and bulk-consuming/ producing manufacturing which have direct access to the rail network and/or to the local distributor road network, trunk or principal road network. Smaller scale freight movements, particularly those serving developments near residential areas or in town centres, need to strike a balance between the need to protect the vitality of the local economy, and the overall quality of life for local residents.

3.11 Development in rural locations should embody sustainability principles, balancing the need to support the rural economy, whilst maintaining and enhancing the environmental, social and cultural quality of rural areas.

In line with TAN 18, **9.13**, the applicant have chosen to submit a traffic plan within this document and are prepared to enter into an agreement to govern its implementation.

8.7 General Considerations and Planning Strategy

The development contributes towards fulfilling the core, general guidance of the Wrexham UDP, maintaining the economic viability and employment potential within the rural community, and providing capacity for complying with future sustainability targets.

2.1 The Plan reflects the Council's corporate vision for the County Borough's future based on:-

- **rural revitalised** distinct towns and villages and an attractive **viable hinterland**.
- a **modern robust economy across all sectors including ... manufacturing industries**.
- an improving quality of life for its residents with an emphasis on **supporting access to a variety of education and employment opportunities**; providing a decent place to live; **conserving the environment; balancing rural and urban needs**;

Full account has been taken of national and regional planning guidance; the policies of neighbouring authorities; social, economic, and environmental considerations; and the likely realistic level of future resource availability.

Policy PS2 : Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment.

Policy PS4 : Development should maintain the existing settlement pattern and character and be integrated with the existing transport network to help reduce the overall need to travel and encourage the use of alternatives to the car.

Particularly, given the sustainability credentials of the development, the development fulfills the requirement to comply with National Planning Guidance. The project provides direct benefit in rural opportunity, resource efficiency, generation of renewable energy, economic diversification, maintaining the character of a traditional agricultural area and its community, sustainable waste management and the proximity principle.

2.3 The Welsh Assembly Government states in Planning Policy Wales (March 2002) that **the key role of the planning system is to achieve sustainable development**, now and for future generations, between economic development to secure rising living standards and to protect and enhancement of the environment.

2.5 National guidance (Planning Policy Wales) also **promotes economic diversification in the countryside if it benefits the rural economy and maintains or enhances the environment**. The countryside should be protected for its visual, ecological, historical, recreational, and agricultural value;

2.6 Activities associated with energy supply should be consistent with protecting the local and global environment. Any environmental damage or loss of amenity caused by energy supply or ancillary activities should be minimised and **unnecessary sterilisation of energy resources prevented. Renewable energy generation sources (e.g. wind, waste, water, sun, and wood) are preferred**. Central government policy on waste management is based on a hierarchy of reduction, re-use, recovery (including material recycling, energy recovery, and composting), and safe disposal as close as possible to the point of generation. Development should be located so as to reduce the risk from natural or man-made hazards.

Failure to support the project by way of refusal to allow the facility to fulfill its energy generation potential is in contradiction to the advice in section 2.6, “unnecessary sterilisation of energy resources prevented”.

In order to provide consistent opportunity within the Borough and its Neighbouring authorities, consistent policy needs to be implemented in order to, UDP 2.7 “encourage rural economic diversification”. Neighbouring authorities are granting applications for AD plants located on farms in rural environments that are of a greater scale and permit importing food wastes and larger quantities of materials from greater distances. Powys has had permission granted for 2 plants, plus one within the Brecon Beacons National Park, Flintshire has granted permission for a similarly sized plant within the Clwydian Range AONB and Shropshire has granted permission for 5 plants, including 3, 20-25,000T per annum plants in the past year with a further 2 currently in consideration plus an additional facility granted by Telford and Wrekin Council.

Policies of Neighbouring Authorities

2.7 The County Borough is bordered by the Welsh unitary authorities of Flintshire, Denbighshire and Powys, to the north and east by Chester City in Cheshire, and to the south and east by North Shropshire District and Oswestry Borough in Shropshire. The remaining borders of the County Borough are rural areas of low development pressures **where policies protect the countryside and encourage rural economic diversification**. The Council works closely with neighbouring authorities through a series of regional and sub-regional fora to ensure **that planning policies and strategies are consistently applied**.

2.10 The late 1980's and early 1990's witnessed significant economic diversification and job creation in the County Borough. However, fundamental weaknesses remain, one of the most significant being the County Borough's over-dependence on manufacturing. The County Borough will not benefit from EU structural funds under Objective 1 and 2 and the loss of Assisted Area status makes it more difficult to diversify further into new high-tech growth sectors. This is essential if the local economy is to remain buoyant. The Plan provides for a significant amount of employment land at a variety of locations to ensure sufficient potential for inward investment, service sector diversification and the expansion/relocation of existing businesses. Its employment policies, together with other policies, which seek to maximise access to local facilities, are consistent with the Council's aims of reducing poverty and unemployment and promoting equal opportunities. The importance of tourism in the local economy is also recognised.

In order to allow WCBC to comply with core planning strategy for sustainability, countryside, landscape and biodiversity, the project should be supported as it directly contributes towards these aims. The farm environment supports healthy populations of Great Crested Newt and declining farmland birds such as Lapwing, Curlew and Barn Owl.

The farm is one of the leading Welsh Organic Dairy farms, supporting the development fulfils direction in UDP 3.3, both operationally through improved nutrient management and economically through increased revenue generation, allowing the farm to thrive and therefore maintaining the productive capacity of high quality agricultural areas.

Sustainable Development

3.1 The planning strategy applies the sustainable development principles contained in national planning policy guidance. It seeks to integrate economic, social and environmental goals and accords with the Council's Local Agenda 21 action programme.

Countryside, Landscape and Biodiversity

3.2 In parallel with the need to provide for future built development, the strategy seeks to safeguard the County Borough's natural environment and particularly those landscapes, individual sites and habitats which have been identified as having specific visual or ecological importance.

3.3 The County Borough contains extensive areas of **high quality agricultural land**. The **strategy recognises the importance of maintaining the productive capacity of these areas ...**

The Lodge Farm digester is currently the only digester in the Wrexham Borough capable of treating liquid source segregated food waste into high quality digestate fertiliser. It is noted that there are waste water digesters, however digestate produced from such plants cannot meet Organic compliance or quality protocols such as PAS 110.

By efficiently recycling nutrient, the project reduces resource consumption and provides waste minimisation, the project is the only facility capable of recycling liquid food wastes in the region, energy is generated from carbon that would otherwise dissipate to the atmosphere through natural decomposition. The digester is located adjacent to the farm arisings and at point of use of the digestate. At only 3.5 miles from Wrexham Industrial Estate, the site has to comply with the proximity principle and Best Practicable Environmental Option as it is the only facility within the area or region capable of doing so and therefore complies with PS10 *"waste will be managed at, or as near as practicable, to the location where it is initially produced."* Failure to use the facility to its full potential will fail to comply with PS10.

WASTE

Policy PS10 : Priority in waste management will be given to minimising the volume of waste generated, followed by maximising the re-use and recycling as much waste as possible. Energy recovery from waste will be favoured where re-use and recycling is not feasible, and waste will be managed at, or as near as practicable, to the location where it is initially produced.

The farm is a low intensity organic farm that supports strong biodiversity benefits. Maintaining the economic viability of the farm complies with PS11.

BIODIVERSITY

Policy PS11 : Encouragement will be given to proposals which improve the biodiversity value of sites and to the establishment of local nature reserves where the nature conservation and landscape interest of the land will be protected and enhanced.

Policy PS 12 is supported as the by-products of the process to renewable energy are sustainable resource efficiency, reduced traffic impact in comparison to alternatives and improvement on current practice. Any minor detrimental impacts arising from the minor traffic amendments do not outweigh the generation of renewable energy.

RENEWABLE ENERGY

Policy PS12 : Proposals for the generation of energy from renewable sources will be supported provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development (including any electricity transmission facilities needed) on the landscape, public safety, and the local environment.

The development complies with core General Development Principle 1 directly, particularly elements, c and k.

Policy GDP1 All new development should:-

- c) Make the best use of design techniques, siting and orientation in order to conserve energy and water resources.
- k) Secure the development of sustainable communities, through the promotion of the economic, social and environmental well-being of the area.

8.8 Environment and Conservation

Supporting the project complies with environment and conservation policy aims in 5.1 and 5.3 as it retains the economic viability of a low intensity Organic farm rather than potentially forcing a decision to be made to return to a conventional intensive regime. Any minor impacts that may be considered as a result of changes in traffic are outweighed by the benefits of the project.

5.1 The local environment is one of the County Borough's greatest resources, being an essential component in residents' quality of life and in the successful development of local industrial and tourism initiatives. Environmental quality is under threat from many directions, including intensive farming methods, the destruction of natural habitats,

5.3 The County Borough contains large tracts of high quality agricultural land generally concentrated around Wrexham, Gresford/Marford, Rossett/Burton, Holt and along the River Dee flood plain. Generally, the incidence of high quality agricultural land coincides with locations where development pressures are greatest.

In considering development affecting agricultural land, the agricultural implications will be considered together with environmental and economic aspects.

In consideration that development was permitted for the digester plant and buildings and compliant with EC3, failure to support the project must be contrary to this policy as it does not follow direction in section 5.4 which highlights most pertinently that "Farm businesses need to change and grow in response to market forces and legislation if they are to survive." The project is rather modest in size, smaller than those permitted in Shropshire for example. Nevertheless, the council has the opportunity to allow operation of the existing plant as a tool in scale with the requirement of the farm by use of limiting rather than restrictive conditions.

Policy EC3

The construction of new agricultural buildings will be permitted unless the development is materially detrimental in terms of its impact on the environment or surrounding landscape. The development should form part of an existing farm complex and take advantage of topography and other landscape features for screening. Isolated buildings will only be permitted in exceptional circumstances where there is an essential agricultural need, and no reasonable alternative location for the development.

5.4 The Council is aware of the need for continuing investment in modern farm buildings, slurry stores and equipment. **Farm businesses need to change and grow in response to market forces and legislation if they are to survive.** Problems can arise due to proposals which are unusually large or in sensitive locations. Where this is the case then planning conditions may be necessary to lessen the impact, although consideration will be given to functional requirements and cost implications. The farm complex is defined as the curtilage of the usable farm buildings usually centred around the farmhouse.

The scale of the agricultural, small-scale farm based, rural enterprise farming diversification development is such that its impact will be to maintain the traditional use of the farm in a Special Landscape Area and does not warrant strict control.

Policy EC5 Within Special Landscape Areas, priority will be given to the conservation and enhancement of the landscape. Development, **other than for agriculture, small-scale farm-**

based and other rural enterprises, and essential operational development by utility service providers, will be strictly controlled.

Permitting the facility to fulfill its potential will assist in the farm retaining its organic status and maintaining its biodiversity interest. Failing to do so will result in risk of the farm returning to an intensive conventional system and reducing biodiversity interest.

Policy EC6 Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.

8.9 Employment

Supporting the applicant will result in immediate direct employment of a member of staff in support of Policy E5 and meet direction in 7.11 in maintaining a viable and balanced economy with positive effect on agriculture.

Employment in the Countryside

7.11 New development in the countryside which would result in a loss of visual quality and landscape character and adversely affect agriculture will be resisted. However, in some rural areas there is a need to provide employment, prevent the loss of services, and maintain a viable and balanced community. Small businesses, often start-ups, which are financially constrained, can operate from low cost accommodation thereby providing employment opportunities for local rural communities.

The development that has been permitted in support of E6, however continued restriction to its economic operation is contrary as advised in 7.12. The development conforms with key characteristics of the Wrexham Landmap Supplementary Planning Guidance : Landscape Character Area 13c - Dee Terraces.

Small Farm-Based or Related Employment Operations

7.12 The changing structure of the farming industry and the increasing pressure on farm incomes are together increasing the need for farm diversification. In a draft Technical Advice Note on Agriculture and Rural Development issued in September 1998, the Government stated that small on-farm operations such as food processing and packing, together with services to other farms, such as workshop facilities, and equipment hire and maintenance, should be encouraged. It is important however that any such development does not detrimentally affect the rural landscape. Policy E6 allows in carefully defined circumstances, the erection of new buildings for employment purposes run as part of the farm business.

8.10 Waste Management

Restriction of the facility by application of excessive Condition is contrary to Policy advice 11.13 and fails to support Policy MW12. The facility is the only one of its type in the region and therefore represents the only opportunity for businesses to comply with Best Practice and BAT. Restricting its operation carte-blanche to exclude importing of any materials is contrary to advice in 11.13 on all points.

Waste Management

11.13 Waste Management in Wrexham has traditionally focused on landfilling. However, sites suitable for landfilling are becoming scarcer and the costs imposed by the landfill tax are likely to make this form of waste management less attractive in any event. A more sustainable approach towards waste management is also required in order to conform with the relevant European Directives and with the National Waste Strategy for Wales. Accordingly there is now a need to take a more comprehensive view of waste management with the following objectives in mind:

1. To provide a planning framework which enables **adequate provision to be made for waste management facilities to meet the needs of society for the re-use, recovery and disposal of waste**, taking into account the potential for waste minimisation and the particular needs in respect of hazardous **and other wastes which require special treatment**.
2. To help **meet the needs of business and encourage competitiveness**.
3. **To encourage sensitive waste management practices in order to preserve or enhance the overall quality of the environment and avoid risks to human health.**
4. To have regard to the need to protect areas of designated landscape and nature conservation value from inappropriate development.
5. **To minimise adverse environmental impacts resulting from the handling, processing, transport and disposal of waste.**
6. **To consider what new facilities may be needed, in the light of wastes forecast to arise.**

The Lodge digester is the only facility in the region and therefore the only opportunity for businesses or organisations disposing of liquid organic wastes to comply with MW12 a), BPEO and the b) waste hierarchy. Should a business aspire to do so, it will be forced to export wastes out of the region resulting in non-compliance with c), the proximity principle. Increased haulage distance is contrary to all national and local policy in regard to supporting the cross cutting themes of sustainable development. Business competitiveness of Wrexham food manufacturers is compromised and regional self sufficiency d) is not progressed in any manner.

With cattle slurry as the predominant feedstock for the plant, the farm fulfils the proximity principle (11.14, the treatment of waste at or near to its source). It also fulfils the proximity principle in regard to point of use. The location of Lodge Farm, 3.5 miles from Wrexham Industrial Estate complies with the proximity principle as defined in 11.14 as near to its source.

Notwithstanding, the **definition of the proximity principle** presented in advice 11.14 is that the policy *“aims to ensure that waste management problems are not exported from one area or region to another”*. Therefore, policy MW12 is not contravened as materials are transported within an area or region.

Should an AD plant be located at a food manufacturer or located remotely on an industrial estate for processing municipal wastes, the digestate will have to travel further to reach its end point of use. Only a small proportion of the input will be imported materials, some of which may be food waste.

The imposition of MW12 as a restriction to the use of energy crop in the facility is flawed. Energy crop is not a waste.

Although MW12 refers to the fact that waste facilities will be permitted within sites on general industrial estates it does not exclude permitting of facilities on other sites. AD is now treated widely as of a similar or reduced environmental impact to open windrow composting and could be determined accordingly in consideration of the fact that the UDP is now 10 years old and pursuant of advice in UDP section 1.3. Further, advice 11.15 states "Certain types of waste management facilities are unsuited to an industrial estate location by reason of space requirements (e.g. windrow composting), incompatibility with adjoining uses (e.g. landfilling) and inconvenience to communities (e.g. small-scale collection and recycling points. Sites for these facilities will therefore be permitted outside industrial estates, although compliance with the criteria set out in Policy MW12 will still be required. Windrow composting is more suitable on farms as part of farm diversification."

In consideration of DEFRA research promoting co-digestion of wastes and animal slurries, this advice is pertinent to anaerobic digestion, its incompatibility with adjoining sites, space requirement, inconvenience through slow moving transport, etc. Windrow composting is only suggested as an example for consideration under this advice not an exhaustive list.

Policy MW12

Waste management facilities will be located having regard to:-

- a) the best practicable environmental option;
- b) the waste hierarchy;
- c) the proximity principle.
- d) regional self-sufficiency.

With the exception of landfilling, windrow composting or small-scale collection and recycling points, facilities for sorting, transferring and processing of waste will be permitted within sites on general industrial estates.

Policy MW13

The disposal of wastes will take place:-

- c) at purpose-built treatment and disposal facilities which comply with the principles set out in Policy MW12;

At the time of development of the UDP, AD was poorly understood and not promoted as a priority technology. National Policy has changed on many levels resulting in DEFRA producing numerous national policies for England. Wales will amend TAN 21 with regard to AD within the year as the Wrexham Planning department is aware and should take this into consideration (Personal comment, Ms J Smith, Planning Policy, Welsh Assembly Government.) The wider implications of evolving strategy were recently presented by Dr Andy Rees, Head of Waste Strategy, Waste & Resource Efficiency Division Department for Environment and Sustainable Development, Welsh Government, "Achieving the goal of a resource efficient economy - the policies & plans for Wales waste infrastructure", (Wales CIWM, Llandudno, 7 October 2011 "Waste Infrastructure: State of our Nation").

11.14 The County Borough Council supports the Government's aim of achieving a more integrated and sustainable approach to waste management, including waste minimisation. With this in mind, this policy defines the key principles to which the Council expects developers to adhere. The best practicable environmental option in that which provides the most benefits or the least damage to the environment as a whole at acceptable cost in the long term as well as the short term. The waste hierarchy consists of: reduction (reducing the generation of waste at source and the use of natural resources); re-use: (products and materials may be re-used again for the same or a different purpose); recovery: composting and recycling (value can be recovered from waste through recycling and composting); recovery: energy from waste (value can be recovered from energy generation); safe disposal: (landfill or incineration without energy recovery). ***The proximity principle*** (the treatment of waste at or near to its source) ***aims to ensure that waste management problems are not exported from one area or region to another*** and recognises that the transportation of waste can have a significant environmental impact on itself. ***Regional self sufficiency requires that most waste should be treated or disposed of within the region where it is generated.*** The implementation of Policy MW12 will follow closely Planning Policy Wales Technical Advice Note (Wales) 21 : Waste published in November 2001. ***Further contexts will be provided by guidance and policies set out in the Regional Waste Plan and in the detail of Waste Strategies that will be prepared.***

11.15 The new waste management facilities needed to comply with Regional Waste Plan targets will largely be provided by the private sector. In the absence of detailed site requirements, no specific allocations have therefore been made in the Unitary Development Plan. However the scale, complexity, and operational characteristics of modern waste management facilities are substantially the same as that of manufacturing industry. Accordingly, the most appropriate location for sorting, transferring and processing wastes, including in-vessel composting, are on those industrial estates which are suitable for general employment development. These locations would include the sites allocated for employment purposes under Policy E1 but exclude those safeguarded for high quality employment under Policy E2. Certain types of waste management facilities are unsuited to an industrial estate location by reason of space requirements (e.g. windrow composting), incompatibility with adjoining uses (e.g. landfilling) and inconvenience to communities (e.g. small-scale collection and recycling points). Sites for these facilities will therefore be permitted outside industrial estates, although compliance with the criteria set out in Policy MW12 will still be required. Windrow composting is more suitable on farms as part of farm diversification.

The existing Conditions on the site are contrary to the advice in 11.16 which states that “optimum use be made of existing ... improved methods of waste treatment”. A Condition that excludes waste altogether does not support this.

11.16 In order to conserve good countryside, maintain environmental quality standards, and minimise pollution, ***optimum use must be made of existing waste disposal landfill sites and improved methods of waste treatment.***

9. Summary

The application to remove restrictive Conditions allows the plant to fulfill its potential and generate further renewable energy. In so doing the plant will conform with many elements of the UDP in relation to the provision of sustainable development, rural employment, maintaining rural character, farm diversification and modernisation of agriculture, contributing towards biodiversity quality and business competitiveness.

The plant aims to utilize best technical practice as described by DEFRA research to optimise plant efficiency by co-digestion, only facilitated by the removal of the restrictive Conditions.

The plant complies with the WCBC definition of the proximity principle and all relevant aspects of MW12 and MW13.

There is no requirement for vehicle movements to enter into local village centres. The applicant will enter into a voluntary agreement with the local authority on this issue.

The plant contributes positively towards the aims of Wrexham Landmap Supplementary Planning Guidance : Landscape Character Area 13c – Dee Terraces.

As an integral component of an organic farm, the plant is restricted to GM free organic compliant inputs. These requirements cannot be satisfied by generic centralised digesters.

The scale of the facility is limited in regard to its processing capacity at 2,000m³ pa.

In order to reconcile concerns that the plant is capable of deviating from its primary purpose as a farm scale digester, the applicant suggests the following conditions are applied;

- Requiring that no digestate product should be spread otherwise than on land under the farming stewardship of the Tomlinsons,
- Requiring that all of the farm slurry collected in the buildings on the farming land under the stewardship of the Tomlinsons should be processed in the digester
- Requiring that the volume of arisings brought onto the site from outside the land under the stewardship of the Tomlinsons should not exceed 2,000 cubic metres per calendar year
- Requiring that the records of waste arisings brought onto the site from outside the land under the stewardship of the Tomlinsons under Environmental Permitting arrangements (including the waste transfer note, the time and date of the delivery, the point of origin of the arisings, the vehicle registration number and type of the transporting vehicle, and the quantity of the individual load) should be retained by the operators of the site and that they should permit the Council planning officer to inspect those records at any time in normal business hours on 24 hours notice for up to 12 months after the end of a calendar year