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**PLANNING STATEMENT
FOR THE ERECTION OF A BIOGAS PLANT AT
SUTTON LODGE FARM, SAPCOTE**

On behalf of

CLAD

Prepared by

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ABBREVIATIONS

AD	Anaerobic Digestion
AOD	Above Ordinance Datum
CHP	Combined Heat and Power
CO₂	Carbon Dioxide
C & I	Commercial and Industrial
Db	Decibels
DEFRA	Department of Environment, Food and Rural Affairs
DRMB	Design Manual for Roads and Bridges
EA	Environment Agency
EIA	Environmental Impact Assessment
EMDA	East Midlands Development Agency
ES	Environmental Statement
GHGs	Greenhouse Gases
HRT	Hydraulic Retention Time
HTD	Highways Transportation and Development
LCC	Leicestershire County Council
LWMS	Leicestershire Municipal Waste Management Strategy
LPA	Local Planning Authority
MWe	Megawatt Electric
MWMS	Municipal Waste Management Strategy
LDF	Local Development Framework
LLP	Limited Liability Partnership
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
RSS	Regional Spatial Strategy
TA	Transport Assessment
Tpa	Tonnes per Annum
UNFCCC	United Nations Framework Convention on Climate Change
WDF	Waste Development Framework

1.0 INTRODUCTION

- 1.1 Climate change and global warming are key issues that have the potential to cause great economic and environmental damage in the short – term and long – term future. International Governments are seeking a significant reduction in greenhouse gases through initiatives such as reducing the need to travel, prevention of waste and green energy solutions. It is widely recognised that national and local energy from waste schemes will play a major role in meeting international targets set under the Kyoto Agreement for both green energy production and a reduction in greenhouse gases. The UK government seeks to adopt policies to counter climate change and this is reflected through current planning policies supporting the development of renewable energy solutions.

Background

- 1.2 In 2006 Leicestershire County Council (LCC) undertook research into the benefits of reducing and recycling farm wastes (Anaerobic digestion – a renewable energy source by Hetel Patel). The report documents the benefits of using anaerobic digestion plants for the recycling of agricultural waste in terms of reducing landfill, reducing greenhouse gases, reducing transportation and supporting local communities and creating rural jobs. Following this report an independent feasibility report was commissioned by the Council. The report highlights there is 1.6million tonnes of agricultural waste being produced in the County with less than half being reused. The Councils aim is the reduction of farm wastes however the feasibility study comments that anaerobic digestion plants are not feasible when importing farm waste alone. To enable the concept to become viable, additional organic wastes need to be imported and community facilities need to be explored, through the collaboration of local farms and local waste producers.
- 1.3 Following the feasibility studies, LCC wrote to local farmers regarding the possibility of renewable energy solutions for waste production. In February 2008, a grant was made available to commission individual feasibility studies for farm based community anaerobic digestion plants. Mark Lovatt of Mark Lovatt Farms,(the applicant), a dairy farmer within Leicestershire accepted the grant and commissioned ENVITEC to undertake a feasibility study for an anaerobic digester to take all of his dairy waste. The feasibility study looked at potential waste streams and viability of the project. Reflecting the findings of the Council's initial feasibility report, additional wastes would need to be imported to ensure sufficient methane production.

- 1.4 Mark Lovatt belongs to the Tesco Sustainable Dairy Group (TSDG) and supplies all milk to Tesco through Arla Dairies. Further to discussions it was revealed that the additional requirement for green waste could be satisfied by existing local suppliers to Tesco and Arla Dairies diverting existing waste from landfill to the site. This would reduce waste to landfill, reduce HGV movements and allow for the sustainable production of energy from waste. The newly formed consortium of Tesco, Arla, Mark Lovatt Farms and local farmers supplying and accepting waste is known as CLAD. (Community Leicestershire Anaerobic Digester)
- 1.5 Various systems for energy production have been investigated in Europe through visits made by both LCC, and the CLAD stakeholders. An anaerobic digestion system has been chosen that includes proven technology that could not only efficiently digest farm waste, but could de package surplus supermarket and other food waste to release biogas, principally methane and CO² for electricity generation.
- 1.6 Based on the initial feasibility study and support from the LCC, this application provides details of the proposed biogas plant located at Sutton Lodge Farm, to the east of Fosse Way, Sapcote. The applicant, Mark Lovatt is working with his suppliers to obtain local food waste from within Leicestershire and to add to his slurry. The by product, biofertiliser, will be used by him and his neighbouring farmers to grow their crops, replacing synthetic fertilisers.
- 1.7 Screening and Scoping Opinions were submitted by Enviro Consulting and Fisher German LLP to establish the need for an EIA. An Environmental Statement (ES) covering flood risk, landscape and transport accompanies this planning application.

Content of Statement

- 1.8 This statement supports the submission of the planning application and provides a profile of the site, a description of the proposed development and process, an overview of the relevant planning policy and a consideration of the key issues.
- 1.9 This planning statement should be read in connection with other supporting information supplied with this planning application which includes:

- Design and Access Statement
- Environmental Impact Assessment
- Contamination report
- Archaeology survey
- Protected species surveys
- Acoustic survey
- Tree assessment

1.10 The report concludes that the proposed development is suitably located and the environmental impacts are minimal. The scheme produces electricity from a renewable source with a viable fertiliser by product for use on local farms. The proposals comply with both national and regional guidance and will have an overall positive impact on waste reduction and recycling within Leicestershire.

2.0 SITE AND SURROUNDING AREA

- 2.1 The proposed site is located approximately 1.3km east of Sapcote, 1.3km from Broughton Astley and 2.2km from Sharnford at Sutton Lodge Farm. The land is classed as Grade 3 agricultural and is currently used for grazing. The predominant surrounding land use is also agricultural.
- 2.2 Access to the site is off the B4114 (Coventry Road) and Fosse Way. The B4114 joins with the M1 to the north east and the A5 to the south west and is a designated HGV route. The farm access is a track off Fosse Way which leads to Sutton Lodge Farm and neighbouring residential barn conversions located to the east. From Sutton Lodge Farm the track continues to and joins Frolesworth Road to the south east. Vehicular access from Sutton Lodge to Frolesworth Road is exclusively for Sutton Lodge. A bridleway also joins the access track off Fosse Way and continues through to Frolesworth Road.
- 2.3 To the north lies a tributary to the River Soar. The Environment Agency's (EA) flood maps indicate the land on the northern boundary of the site lies within a 1:1000 year flood plain (Flood Zone 2) and land to the east lies within a 1:100 year flood plain (Flood Zone 1).
- 2.4 There is a gentle fall across the land from east to west with a typical level on the eastern boundary being 80 metres AOD and 74 metres on the western boundary. Beyond the western boundary the land continues to fall to the River Soar before rising again to Sapcote to the west of Coventry Road. To the east the land continues to rise to a high point at Sutton Lodge (100 metres AOD), approximately 700 metres to the east. To the south the land gently falls before rising again to Frolesworth. To the northeast the land gently falls to a shallow valley before rising to Primethorpe.
- 2.5 To the north west of the site, bordering the tributary, lie mature trees and hedging. Field boundaries to the north east and south are predominantly low level hedging interspersed with mature trees.

3.0 PROPOSED DEVELOPMENT

3.1 The proposals include the installation of a biogas plant with associated access and landscaping. The proposed facility plant will be designed to generate 1.5MW of electricity continuously (10,643MWh/yr). This is enough electricity to supply around 2,365 households. The facility will process around 55,000 tonnes/yr of agricultural manures, residues from the food processing industry and potentially municipal waste from Leicestershire if a contract with the council is obtained. The facility will be designed and licensed to accept all of this material. It will also produce around 47,000 tonnes per year of liquid digestate that can be used to replace artificial fertiliser on farms. Approximately 1000 tonnes of overwrapping and packaging will be redistributed to landfill or recycling facilities once food wastes are extracted.

3.2 Data obtained from NISP and Biogen together with local research undertaken by CLAD has revealed potential for in excess of 55,000 tonnes of organic matter within the locality. To ensure efficient running of the digestion process it is anticipated the following quantities will be acquired;

- Over 10,000 tonnes/yr of slurries from 1000+ head of dairy cows and poultry flocks;
- 10,000 tonnes of silage
- 35,000 tonnes/yr of food processing wastes

3.3 The plant cannot run from farm waste alone and for an optimal mix for the production of energy, other organic matter must be added. The most efficient mixes include food wastes. The figures quoted are estimations at this stage for an optimal mix and may be subject to change, depending on the quantities available of food wastes and slurries available on a daily basis.

3.4 The plant will contain the following:

3.5 **Waste Reception and Control Building;** (labelled 1 on site layout plan),

- Reception/Control Building (labelled 1 on site layout plan), width 40m, length 50m, height 15m to ridge, comprising base, M&E services and odour control systems. Walls and roof clad in steel profile sheeting coloured dark green (RAL 6028 pine green or RAL 6002 leaf green); and
- Solids Feedstock Processing & Feeder System (inside reception building), comprising a de-packaging unit, shredders, macerators, and solid feeder systems.

3.6 Biogas Holder;

- Raw Waste Storage Tank (labelled 2 on site layout plan), comprising an insulated roofed tank fabricated in glass-coated steel panels, diameter 12m, height 15m, capacity 1,500m³, complete with: gas mixing system; discharge pump & pipework; and gas outlet with pressure relief. The tank will be constructed using reinforced concrete panels clad using plasticol coated steel profile sheeting coloured dark green (RAL 6028 pine green or RAL 6002 leaf green).

3.7 Digestion Tanks;

- Primary Digester Tank (x2) (labelled 3 on site layout plan), comprising an insulated roofed tank fabricated in glass-coated steel panels, height 15m, capacity 3,800m³, complete with: gas mixing system; external concentric-tube heat exchanger, digestate circulation pump, water circulation pump & pipework; discharge pump & pipework; and gas outlet with pressure relief. The tank will be constructed using reinforced concrete panels clad using plasticol coated steel profile sheeting coloured dark green (RAL 6028 pine green or RAL 6002 leaf green); and
- Secondary Digester Tank (labelled 4 on site layout plan), comprising an insulated roofed tank fabricated in glass-coated steel panels, height 15m, capacity 3,800m³, complete with: gas mixing system; external concentric-tube heat exchanger, digestate circulation pump, water circulation pump & pipework; discharge pump & pipework; and gas outlet with pressure relief. The tank will be constructed using reinforced concrete panels clad using plasticol coated steel profile sheeting coloured dark green (RAL 6028 pine green or RAL 6002 leaf green); and
- Pasteurisation Tank (x2) (labelled 5 on site layout plan), comprising an insulated roofed tank fabricated in glass-coated steel panels, height 8m, capacity 250m³, complete with: gas mixing system; external concentric-tube heat exchanger, digestate circulation pump, water circulation pump & pipework; discharge pump & pipework; and gas outlet with pressure relief. The tank will be constructed using reinforced concrete panels clad using plasticol coated steel profile sheeting coloured dark green (RAL 6028 pine green or RAL 6002 leaf green).

3.8 CHP Plant Room and Digestate Separation;

- Gas Utilisation System, (labelled 7 on site plan) comprising: 1.5MWe CHP unit; standby biogas boiler for digester heating system; air-blast radiator; gas pipework, water

pipework, exhaust pipework and flue pipework. Length 8m, height 3m, width 2m. The housing will be coloured dark green (RAL 6028 pine green or RAL 6002 leaf green);

- Gas System, (labelled 9 and 10 on site plan) comprising double-membrane gas holder, capacity 3,000m³, height 11.5m, complete with: gas pipeline from all sealed process tanks to gas holder; gas pipeline from the holder to the gas compressors; and gas pipeline from the gas holder to the CHP unit, standby boiler and surplus gas burner; surplus gas burner and pipework. The holding tank will be coloured grey (RAL 9002)

3.9 **Digestate storage tanks;**

- Digestate Storage Tank (x3) (labelled 8 on site layout plan), fabricated in glass-coated steel panels with a floating cover, diameter 36m, height 11.5m, capacity 8,000m³, complete with mixing system and discharge pump & pipework. The tank will be coloured dark green (RAL 6028 pine green or RAL 6002 leaf green); and

3.10 The plant layout has been designed to minimise construction costs and maximise efficiency and safety. Due to the topography the site will be levelled at 78 AOD. The top and sub soils will be used to create the bunding to the north of the development.

3.11 Hardstanding to the west of the site allows for vehicular parking and turning.

3.12 Access to the site will be off the old Fosse Way via a newly constructed track measuring approximately 8m in width by 320m in length. A further emergency exit (as required by the EA) is located to the east of the site and will follow the existing farm track to Frolesworth Road in the south east. The site is enclosed with earth bunding approximately 2m in height for both environmental protection and visual impact. The bunding will be fully landscaped.

3.13 Further works will also be required in constructing an access road into the site and hardstanding, implementing a weighbridge, cabling works, implementing a drainage system and connection to required utilities.

3.14 Surface water run-off will be collected within the attenuation pond. In the unlikely event the pond fills, an underground drain has been provided to discharge into the River Soar. All discharge will adhere to EA regulations/consents to discharge.

3.15 Pipework measuring 6inch in diameter will run at ground level from the biogas plant to distribution points within neighbouring fields. Further negotiations are required with local

landowners as to the optimum positioning for pipework therefore matters of detailed pipe layout will be provided via condition once permission has been granted.

4.0 **PROCESS DESCRIPTION**

- 4.1 The anaerobic digestion (AD) process is the natural breakdown of organic material in the absence of oxygen. The two products that result are biogas which is rich in methane that can be used as an energy source for a number of purposes and biofertiliser which is a nutrient rich liquid.
- 4.2 In the proposed development the collected methane will be used to run a CHP unit which will generate electricity and heat and the biofertiliser will be used to replace fossil fuel derived fertilisers on local farms.
- 4.3 In the UK, AD is employed in a number of situations to process and treat organic wastes. There are a number of plants across the UK processing sewage sludge at water treatment plants, vegetable matter and slurry on farms and a smaller number of plants treating food waste are operational or under development. Across Europe AD has been employed for a number of years to treat food waste and is considered to be a safe, efficient and mature technology.
- 4.4 AD combines waste treatment with energy recovery and as such performs well in DEFRA's waste hierarchy. The technology is the preferred treatment method for wet organic wastes.
- 4.5 The proposed plant at Sapcote will receive a combination of types of waste including:
- animal slurry from local dairy units
 - silage grown on local farms
 - liquids and washing water from food manufacturing sector
 - bulk and wrapped material from local food manufacturers
 - food passed its sell by date from supermarkets and retailers
 - food from medium and small retailers and food catering businesses
- 4.6 These materials will be received in to the reception building where the environment is subject to odour control through bio and carbon filters. All wrapped food waste will be

separated from its packaging and combined with the other feed stock materials to produce an optimum mix for digestion.

- 4.7 This feed stock mix is put in to the process tanks, where the temperature is maintained at 38°C, and it is converted in to biogas and biofertiliser.
- 4.8 The biogas contains primarily methane and carbon dioxide. Both of which are green house gases (GHG's) with the methane being 22 times more polluting than carbon dioxide. If the processed material were to be deposited into landfill site the methane produced through decomposition would enter the atmosphere and contribute significantly to global warming. The capture of the gas in this process prevents this loss of methane to the environment.
- 4.9 The biogas produced is stored in the gas holder prior to being utilised by the CHP units. The CHP units generate electricity, of which approximately 95% of the net produced will be transferred to the local distribution network to be utilised in the surrounding area and the surplus heat will be recovered for maintaining tank temperatures and the pasteurisation vessels.
- 4.10 A gas flare is located adjacent to the digestate storage tanks. The flare is designed for safe and odour free combustion of excess biogas and is operated automatically by the gas store, thus avoiding fugitive emissions. The flare capacity is approximately four times the capacity of the CHP unit to ensure that excess gas can be burned without increasing the gas store pressure; this avoids the need for operation of the pressure relief system and gas venting into the atmosphere.
- 4.11 Once fully digested the biofertiliser is transferred to the pasteurisation vessels where it is heated for 1 hour at 70°C. This process reduces the pathogen content and makes the biofertiliser stable prior to it being transferred in to one of the biofertiliser storage tanks. The plant has a Hydraulic Retention Time (HRT) of approximately 6 months depending upon plant throughput. Figure. 1 provides a simplified process diagram. The process takes between 15 and 40 days depending on the organic matter received.
- 4.12 The biofertiliser will be retained for spreading and it will be utilised on local farms as a direct replacement for fossil fuel derived and quarried fertiliser. The biofertiliser will only

be exported either by connecting pipelines or tankers, during the months of March, April, May, June, August and September due to current environmental restrictions.

- 4.13 The plant will be controlled from a computer terminal housed within a control room within the main reception building. The processes will be constantly monitored to maintain optimum operating conditions. All equipment is designed to be “fail safe” to maintain plant safety and environmental protection with manual resets required on all safety – critical machinery.

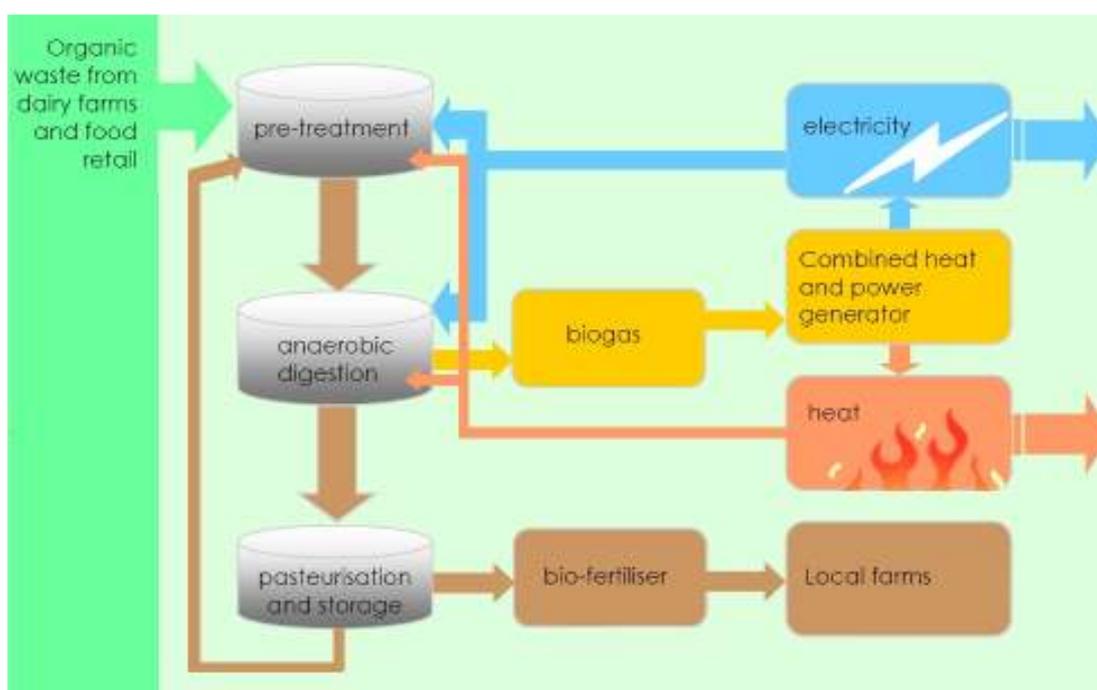


Fig 1. Anaerobic digestion process diagram

5.0 **PLANNING POLICY**

5.1 The principle of sustainable development is at the core of the planning system; its objectives are specified within Planning Policy Guidance Notes, Planning Policy Statements, regional and local planning documentation and transport and waste directives. This chapter documents the most relevant guidance. Chapter 6 of this statement further looks at these policies in the context of the proposed development and highlights how the biogas plant complies with planning policy and significantly contributes to providing alternative energy solutions.

National policy and guidance

PPS1

- 5.2 PPS1, 'Delivering Sustainable Development' outlines the fundamental importance of planning in delivering sustainable development in a changing global context. Renewable and low-carbon technologies and their associated infrastructure are outlined as one of the key areas where the planning system can encourage new development.
- 5.3 The supplement to PPS1, 'Planning and Climate Change', states that new development should be planned to make good use of opportunities for decentralised and renewable or low carbon energy. The biogas plant provides an opportunity to highlight decentralised energy production using renewable technology and could be used as an exemplar development to promote further sustainable development projects both regionally and nationally.
- 5.4 Furthermore, planning policy within the supplement to PPS1 also states that in developing their core strategy, planning authorities should provide a framework that promotes and encourages renewable and low carbon energy generation. Planning policies should be designed to promote and not restrict renewable and low-carbon energy and supporting infrastructure. Additionally, PPS1 goes on to state that planning authorities should not require applicants for energy development to demonstrate either the overall need for renewable energy and its distribution, nor question the energy justification for why a proposal for such development must be sited in a particular location.

5.5 PPS1 also states that any new decentralised energy supply to developments or for new sustainable developments should be set out in Development Plan Documents. The Leicestershire and Leicester Local Development Framework Waste Core provides greater detail of the County's waste strategies. Further details are provided within section 5.29

PPG4

5.6 Chapter 13 of PPG4 Industrial, Commercial Development and Small Firms states the planning system should operate on the basis that all applications for development should be allowed, having regard to the development plan and all material considerations, unless the development would cause harm to interests of acknowledged importance. It is clear that policies should not place unjustifiable obstacles in the way of development which is necessary to provide homes, investment and jobs, or to meet wider national or international objectives.

5.7 The ES concludes the development does not cause harm to interests of acknowledged importance. The need for farm diversification together with targets for green recycling and renewable energy are considered material planning considerations.

PPS7

5.8 Within PPS7, 'Sustainable Development in Rural Areas', the Government states that planning authorities should support development that delivers diverse and sustainable farming enterprises. In addition it encourages local authorities to support development proposals which:

- Become more competitive, sustainable and environmentally friendly
- Adapt to new and changing markets
- Comply with changing legislation and associated guidance
- Diversify into new agricultural opportunities
- Broaden operations to add value to their primary produce.

5.9 The development of a biogas plant at Sapcote will provide new environmentally friendly solutions for the disposing and recycling of farm and other organic matter reducing the need to landfill. The addition of a biogas facility broadens the farms opportunities providing electricity and biofertiliser through sustainable energy production. The plant will also retain and create local jobs helping sustain the rural economy.

PPS9

- 5.10 PPS9 highlights that planning decisions should be based upon up to date information about the environmental characteristics of their areas. Planning decisions should aim to maintain, enhance, restore or add to biodiversity and geological conservation interests.
- 5.11 Recent surveys have been undertaken to assess the flora and fauna on site. No protected species have been found and the recommended buffer strips to the edges of fields will be introduced to provide additional habitats. The extensive landscaping of the buffer strip will create new habitats and mitigate for the loss of two trees and approximately 6 metres of hedgerow resulting from the new access track.

PPS10

- 5.12 PPS10, 'Planning for Sustainable Waste Management', states that sustainable waste management should involve moving waste up the waste hierarchy of reduction, re-use, recycling and composting, using waste as a source of energy and finally disposing waste as a last resort. Both farm waste and imported organic waste used in the biogas plant will move up the waste hierarchy rather than being spread directly onto the ground in the case of the slurry or being sent to landfill in the case of other organic waste. The process product energy, will be used to power and heat the plant as well as surplus energy being supplied back into the grid. The product biofertiliser is a highly enriched fertiliser which is more valuable than slurry in terms of its use for soil enhancement and reduces the need for importation of synthetic fertilizers.



- the most effective environmental solution is often to reduce the generation of waste – *reduction*
- products and materials can sometimes be used again, for the same or a different purpose – *re-use*
- resources can often be recovered from waste – *recycling and composting*
- value can also be recovered by generating energy from waste – *energy recovery*
- only if none of the above offer an appropriate solution should waste be disposed of.

Fig 2 – The Waste Hierarchy (Source Annex C PPS10)

PPS13

5.13 PPS13 'Transport' seeks to integrate land use and transportation to achieve sustainable development solutions. The primary objectives are the promotion of sustainable transport choices, promoting accessibility and reducing the need for travel. The ethos of this development is sustainable farming solutions through the reduction of transportation. The development seeks to divert local organic waste from landfill thus reducing transportation time and ultimately time lorries spend on the road. The slurry and organic waste is mixed on site within the biodigester and biofertiliser is spread on local land, thus reducing the need to import synthetic fertilisers. Export of biofertiliser is primarily through a new pipeline further reducing the need for vehicular movements.

PPG16

5.14 PPG16 Archaeology and Planning highlights that both developers and Local Authorities should take into account archaeological considerations from the start of the development process and seek to protect both scheduled and unscheduled sites. It is also recognised that it is not feasible to seek to retain archaeological remains and that

a balance should be struck between the importance of the finds and the need for the development.

5.15 In accordance with PPG16, early investigations were undertaken to understand the historic importance of this site. The University of Leicester Archaeological Services under supervision by the County Archaeological department undertook an initial desk top survey followed by trial trenching.

5.16 Although the site was identified as having high potential for Roman remains, no Roman artefacts of importance were discovered. Evidence of pre-historic occupation was identified (c5000BC) however the foundation design using piles will have minimal impact on the site. A watching brief will be maintained throughout foundation construction. A further report is being undertaken by Leicester University detailing the finds and agreeing construction methodology. The report will be submitted in due course.

PPS22

5.17 PPS22, 'Renewable Energy', states that renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and environmental, economic and social impacts can be addressed satisfactorily. The site has been chosen in a location close to a designated HGV route which has good links to the surrounding national motorway network. Above all the site is centrally located to accept farm waste and local green waste, offering transportation savings through close proximity to the waste sources and the ability to pump a large proportion of bio fertiliser onto local farm land for crop production.

PPG24

5.18 PPG24 'Planning and Noise' addresses the potential impact of noise of proposed development on the environment. Noisy development should be located away from noise sensitive receptors if possible and measures should be incorporated into such development to reduce noise as far as practicable. The proposed development has been designed to ensure noise is minimal through the enclosure of the main operational elements of the plant, such as waste tipping and running of the CHP unit, within insulated buildings. The biogas plant is located a good distance from residential properties to reduce noise conflict.

PPG25

- 5.19 PPG25 'Development and Flood Risk' outlines how consideration of flooding issues can be incorporated into the planning system with a view to reducing future damage to property and loss of life. These considerations have been afforded greater weight since the impacts of climate change have been more thoroughly understood. The main development site has been located outside the defined flood areas of the River Soar with only access being achieved through flood risk areas. The accompanying ES outlines how flood risk arising from the development has been considered and how appropriate mitigation measures, including SUDS, are to be implemented to minimise risk.

Regional Planning Policy

- 5.20 The East Midlands Regional Plan was adopted in March 2009 and provides development guidance until 2026. Key Core Objectives include:
- to protect and enhance the environment
 - to reduce the causes of climate change
 - reduce the impacts of climate change
 - to minimise adverse environmental impacts of new development and promote optimum social and economic benefits.
- 5.21 Policy 24 highlights Local Authorities, EMDA and Sub-Regional Strategic Partnerships should work together to promote further diversification and further development of the rural economy, where this is consistent with a sustainable pattern of development and the environmentally sound management of the countryside. The biogas plant offers a new "green" management system for disposal of agricultural and organic waste which will help support effective countryside management.
- 5.22 Policy 26 refers to the protection of the regions cultural and historic heritage. The policy highlights the importance of preservation however where damage is inevitable, suitable mitigation measures must be agreed. A full justification for development must be provided.

- 5.23 Policy 31 states the regions objectives for Landscape Protection. The Councils LDF's should include policies to ensure that development proposals respect intrinsic landscape character in rural and urban fringe areas, including, where appropriate the value of tranquillity and dark skies. - The proposals have been designed to have minimal impact on the surrounding environment. A full landscape assessment is contained within the ES.
- 5.24 Policy 35 sets out the regional approach to managing flood risk whereby Local Authorities should take account of the potential impact of climate change on flooding and land drainage. A full assessment of Flood Risk is included within the ES.
- 5.25 Policy 36 seeks for development to contribute to the reduction in air pollution in the region and consider the impact of traffic on air quality. An assessment of air quality has been provided with this planning application.
- 5.26 The RSS sets targets for energy reduction through Policy 39 and 40 of the plan. The government has set a target of at least 10,000MWe of CHP by 2010. Regional targets proposed to increase the figure to a minimum of 511MWe by 2010 and 1120 MWe by 2020. Suitable locations for large scale CHP developments are likely to be urban areas or associated with new development which avoid negative impacts on the landscape.
- 5.27 The East Midlands region lags behind other English regions in the production of renewable energy (approximately 2%). The regional targets and scenarios within the Renewable Energy Report indicate that a 20% renewable energy mix by 2020 can only be achieved by adopting energy efficient improvements and challenging micro-generation targets as well as a mix of large scale grid connected renewable energy. It is identified that the Three Cities Sub Area (within which the application site lies) offers opportunities for local distribution networks for electricity and heat using CHP together with energy generation from waste.
- 5.28 The need for waste management is further transposed into the Waste Development Framework (WDF) as detailed below. The biogas plant will contribute to national energy savings. Due to waste streams this development is ideally suited to this central location offering opportunities for reduction in transportation through the collection of local farm waste and the piping of biofertiliser.

- 5.29 Policy 43 refers to regional transport objectives. Of most relevance to the proposed plant is the improvement of air quality and reduction in carbon emissions from transport.

Leicestershire and Leicester Waste Development Framework October 2009 - 2026(WDF)

- 5.30 The WDF quotes information contained within the Waste Strategy 2007, which in turn highlights the importance of decisions made on waste development. These decisions should protect human health and the environment. This involves, amongst other things, disposing of waste at the nearest appropriate installation, by means of the most appropriate methods and technologies.
- 5.31 It is the objective of the WDF Core Strategy to enable the delivery of sufficient new waste management capacity to meet the apportionment set in the RSS and support the delivery of Leicestershire Municipal Waste Management Strategy (LWMS) targets. It is documented that around 900,000 tonnes per annum is required for the recycling and composting of municipal and commercial and industrial (C&I) waste by the end of the WDF Period.
- 5.32 To prevent this amount going to landfill between four 250,000tpa or nineteen 50,000tpa energy value recovery facilities would be required. In addition landfill capacity is to be restricted after the targets for recycling and composting has been met. The proposed site at Sapcote will offer a smaller plant taking approximately 35,000 tonnes of C & I waste significantly reducing local waste to landfill, and will help achieve the Councils overall waste reduction program as highlighted within Policy WCS3.
- 5.33 The WDF seeks a sequential approach to site selection for waste facilities, highlighting that towns and cities have high demand for such plants. Policy WCS2 provides details of ideal locations for non strategic waste sites including broad locations between Coalville and Loughborough and around Leicester. Other areas considered are within Hinckley or Melton Mowbray, within sustainable urban extensions or as extensions to existing facilities. Notwithstanding this it is clear that more dispersed locations will be considered for on farm composting providing it can be shown the development is necessary. Policy WCS3 also highlights that if a need can be demonstrated, unused or underutilised agricultural land will be considered for waste management facilities. Chapter 6 of this

statement provides details of the site location and highlights the demand for such a facility in this location. The facility will not only meet waste requirements but aid farm diversification and the creation of secure rural jobs. Its location will also reduce the transport required to distribute the biofertiliser to farms.

- 5.34 Policy WCS4 highlights priority 1 land for waste development sites will be given to land with existing waste management uses. Priority 2 locations will include land forming part of major development proposals, existing industrial/commercial land, previously developed land, contaminated or derelict land, existing mineral workings and underutilised agricultural buildings and their curtilages. Priority 3 land refers to Greenfield sites.
- 5.35 Policy WCS6 supports anaerobic digestion facilities providing energy production is maximised, value recovery from by products is maximised, pre-sorting is carried out, the residue is properly managed and disposed and there is no harm to the environment or communities. The proposals seek to maximise energy production to ensure the viability of the farm and project. All residue will be properly managed and is tightly controlled by the EA and other waste disposal directives.
- 5.36 Policy WCS10 provides the strategy for environmental protection. Developments should have no detrimental impact to the natural or built environment. The highest standards of construction and aftercare are demanded. The ES and accompanying reports evaluate the site fully and conclude the development will have no adverse impact on the local environment.
- 5.37 Policy WCS14 refers to the transportation of waste and seeks close proximity to markets in order to minimise the need to transport waste. In addition, developments should be located within close proximity to the lorry route network to minimise impact on residential areas and minor roads. A map of waste sources has been provided within figure 4. of the ES highlighting the importance of the chosen site in relation to the transport network.
- 5.38 The WDF comprises development control policies for development. The design of the plant is discussed within Policy WDC1 whereby there must be a reduction in greenhouse gases, waste production and minimal consumption of water and energy. The proposed

plant uses proven technology and seeks to reduce greenhouse gases through the capture of methane. The plant will utilise some of the energy it generates and seek to minimise water consumption.

- 5.39 Policy WDC4 seeks to protect archaeological remains unless overriding national interests can be demonstrated. The land has been assessed and excavations undertaken on site in compliance with planning policies.
- 5.40 Policy WDC5 highlights that planning permission will be granted for development in the open countryside providing the development cannot be accommodated in urban areas, there is an overriding need for the development and the development will not materially affect the local landscape character. Chapter 6 of this statement fully assesses the locational requirements for this development.
- 5.41 Policy WDC10 seeks safe transportation of waste with minimal impact on local residents. Information contained within the TA provides data on existing and proposed vehicular movements in association with this plant and concludes impact on local residents will be minimal.
- 5.42 Policy WDC14 provides a check list for information to be included within a planning application. For ease the list is contained within Appendix A with reference to chapter numbers to source the information.

Local Transport Plan 2 2006/07 – 2010/11

- 5.43 The second Local Transport Plan (LTP2) sets out Leicestershire's transport strategy for the county, which is based on a thorough review of transport needs, and details a five year implementation programme.

- 5.44 The aim of the LTP2 is to:

“Achieve a transport system for Leicestershire which meets our requirements for access and economic development in a way which seeks continuous improvement in sustainability and people's quality of life”.

- 5.45 LCC, as part of the longer term strategy, has identified five objectives to achieve the aim. The most prevalent for the proposed development being to;

'Provide the right transport conditions to help economic growth through continuing emphasis on managing our existing road system effectively so as to reduce congestion and maximise capacity'; and

'Reduce transport's impact on the environment, through local measures to reduce pollution and traffic nuisance as well as increasing contribution to controlling the emission of carbon dioxide'. (Ref: LTP2 para S16)

- 5.46 The LTP2 also outlines its targets in tackling congestion that further the objectives as set out in the longer term strategy.

'...by increasing the use of public transport, walking and cycling with less growth in car mileage and more effective use of congested road space. The initial target is that congestion as measured by vehicle delays in the morning peak period should be no worse anywhere in Leicestershire in 2010 than it was in 2003.' (Ref: LTP2 para S17)

- 5.47 Tackling congestion is a central theme to the LTP2 and as part of this, a package of measures to influence demand so that fewer vehicles attempt to use congested roads has been implemented. The aims are to manage and enhance congested road space to produce more free-flowing traffic and to make better use of road space within the network to enable traffic to flow more freely. The importance of the integration of land use and transport planning are highlighted as key components in the planning process.

"One of the most cost-effective ways of tackling congestion is to ensure that land use and transport planning are fully integrated throughout the planning processes." (Ref: LTP2 para 4.22)

- 5.48 In addition to reducing congestion, there is a clear goal in the LTP2 that the aims and objectives will contribute to reducing the impact on the environment from transport including the wider impact of reducing CO₂ emissions. This is a central theme within the proposed development.

- 5.49 The Leicestershire Lorry Route Network has been identified within the LTP, the implications for the proposed development are discussed in detail in Chapter 8 of the ES and the accompanying TA.

Highways, Transportation and Development (HTD)

- 5.50 The HTD document provides guidance on highways and transportation infrastructure for new developments in areas for which Leicestershire County Council, Leicester City Council, Derbyshire County Council and Nottinghamshire County Council are the highway authorities. It replaces the previous authorities' individual documents.
- 5.51 In terms of the proposed development, 'Part 3 Design Guidance' of the HTD document is referenced for the site access design geometry and for improvement works on the adjoining network. In addition, advice contained within 'Section IN5: Our access to the road network policy' has been followed and is detailed within the TA.

Local Plan Policy

- 5.52 The Harborough Local Plan was adopted in 2001. The proposed site does not fall under any designations within the Local Plan Proposals Maps.
- 5.53 Policy IN/1 is a general policy which sets out criteria for acceptable development. Of particular relevance are:
- b) where proposals should respect the character and form of surrounding buildings and the environment;
 - c) the development makes best use of the site;
 - g) the development should not give rise to unacceptable levels of traffic or result in unsafe highway situations;
 - h) safe access and parking is provided;
 - J) the development does not affect the amenities of neighbouring uses;
 - k) adequate provision is made for foul and surface water;
 - m) retention and creation of new habitats will be encouraged; and
 - p) new development should make adequate provision for alternative transportation.

- 5.54 Policy RM2 refers to development in flood risk areas and expresses a need for development within the flood plain to include on site or off site compensation measures.
- 5.55 Policy RM10 highlights the council will grant permission for development providing provision is made for replacement habitats if the loss of existing habitats is unavoidable. Further criteria refer to the provision of areas of ecological interest during construction, maximum areas of permeable ground surface to aid drainage and incorporation of wildlife habitats.
- 5.56 Policy EV/5 is concerned with development in the countryside and provides 11 criteria for acceptable development. These include:
1. The development should sustain or improve the rural economy and cannot be located adjacent to an existing settlement;
 2. The development does not adversely affect the character and appearance of the countryside;
 3. The development does not affect the amenities of nearby residents;
 4. New buildings should be sited to minimise their impact on the landscape;
 5. The design, materials and massing of the buildings should minimise the impact on the character and appearance of the countryside and maintain or enhance the local character of the landscape;
 6. Schemes should be accompanied by a landscape plan;
 7. Development does not adversely affect areas of archaeological or ecological significance;
 8. Satisfactory access can be achieved;
 9. The road network can accommodate new traffic generated;
 10. Adequate provision is made for parking and servicing; and
 11. The development does not contribute to coalescence.
- 5.57 Policy EV19 permits removal of trees providing the LPA are satisfied there is justification for removal and replacement trees are included within the development.
- 5.58 Policy EV20 highlights development schemes should be accompanied by a landscape appraisal.

- 5.59 Policy TR/3 refers to traffic generation and the councils requirement for environmental improvements to mitigate any impact of development.
- 5.60 Through siting and design, the proposals have been designed to sit comfortably within the rural environment and measures adopted to ensure minimal noise, odour, traffic and visual impact. The site access has been improved to accommodate safe passage of HGVs together with traffic separation for residential traffic and use of the bridleway. Adequate provision has been made for surface water run off and the impact on flooding areas has been assessed within the ES. A full landscape assessment has been included within the ES which provides further information regarding planting and screening. This planting also creates new habitats for flora and fauna and replaces the two trees which will be lost as a result of the proposed access.

Conclusions

- 5.61 The proposal fully accords with both national and local planning policy and the objectives of sustainable development and waste management. The development is considered to have a **positive** impact; reducing landfill, creating renewable heat and power and providing a sustainable fertiliser for local farms.
- 5.62 The principle of sustainable development is at the core of the planning system; its objectives and long term achievements are specified within Planning Policy Guidance Notes, Planning Policy Statements, regional and local planning documentation and transport and waste directives. This chapter documents the most relevant guidance. Chapter 6 of this statement investigated these policies in the context of the proposed development and highlighted how the biogas plant complies with plan policy; significantly contributing to providing alternative energy solutions

6.0 **CONSIDERATION OF ISSUES**

6.1 Having set out the details of the site, the proposal and planning policy, the following key issues now need to be assessed in order to determine whether the proposed development at Sutton Lodge Farm complies with planning policy:

- i. The principle of development
- ii. The design of the proposal
- iii. The impact on the surrounding area

i. The Principle of Development

6.2 The site is located on greenfield land which is currently used for grazing. The site for the biogas plant was chosen in association with the LCC and full details of the site selection process are contained within the ES.

6.3 To understand the principles behind this development this section firstly looks at the need for farm diversification at Sutton Lodge Farm, the governments requirement for sustainable waste management and the need for renewable energy. Finally the justification for the location of this development is explored in detail.

Need for Farm Diversification

6.4 Mark Lovatt Farms operates over 700 acres accommodating 400 head of cattle including 150 milking cows and 350 beef together with young stock. The farm currently employs up to 8 persons on full time and part time contracts. Faced with increasing legislative pressures such as complying with new environmental legislation and increasing energy, feed and waste disposal costs, the farm is under financial pressure to reduce these costs if the business is to remain viable and competitive in the medium to long term. The key driver of the proposed development involves the construction of a biogas plant using cow slurry, silage and imported food waste to produce methane gas that in turn will generate electricity and heat. The proposed biogas plant has a high capital cost and requires an innovative approach to the capital funding and project delivery.

6.5 At the national level, PPG4, *Industrial, Commercial Development and Small Firms*, states that,

“There is no contradiction in arguing both for economic growth and for environmental good sense. The challenge is to integrate the two.”

- 6.6 The proposed biogas plant at Sutton Lodge Farm will enable this integration of environmental factors and improve the economy. In addition, PPG4 goes on to state that in rural areas, applications for development necessary to sustain the rural economy should be weighed with the need to protect the countryside in terms of, for example, its landscape, wildlife, agriculture, natural resources and recreational value.
- 6.7 Within PPS7, *Sustainable Development in Rural Areas*, there is emphasis on supporting development that delivers diverse and sustainable farming enterprises within the overall aim to promote sustainable economic growth and diversification. Development of renewable energy technology has a key role in ensuring sustainable economic growth within the agriculture sector by diversification into technologies such as biomass, wind energy, biogas and other relevant technologies. The provision of sensitive exploitation of renewable energy sources in accordance with PPS22 is listed as an action that should be supported by local authorities when considering applications for development in the countryside.

Sustainable Waste Management

- 6.8 Sustainable waste management and renewable energy generation are key factors within the proposed development, with both issues being highlighted in national, regional and local level policy. PPS 1 states that,
- 6.9 *‘Planning authorities, developers and other partners in the provision of new development should engage constructively and imaginatively to encourage the delivery of sustainable buildings. Accordingly, planning policies should support innovation and investment in sustainable buildings and should not, unless there are exceptional reasons, deter novel or cutting-edge developments.’*

- 6.10 As outlined previously, national policy (PPS10) is in support of moving waste up the waste hierarchy and within PPS22, the aims for renewable energy are outlined for the future.
- 6.11 Climate change and global warming are key issues that have the potential to cause great economic and environmental damage in the short-term and long-term future. The reduction of waste has the potential to reduce transportation to landfill and collection costs. The best option is to prevent waste where possible. As outlined above, the recovery of energy from waste reduces the amount sent to landfill, thus moving the waste up the waste hierarchy. The proposed biogas plant at Sutton Lodge Farm will reduce waste sent to landfill and therefore reduce methane emissions. The biogas plant meets the criteria of waste minimisation and is a way to create more sustainable waste disposal.
- 6.12 The RSS again encourages the principle of the waste hierarchy and sets targets for an increase in recycling and re-use for household and commercial/industrial waste that is currently sent to landfill. Furthermore the Waste Local Plan supports current advice and encourages alternative energy regeneration through anaerobic digestion (policy WLP3). The proposed development will reduce the amount of food waste sent to landfill, as this waste will instead be redirected to the biogas plant, producing energy and recycling organic matter and nutrients to farmland.

Renewable Energy Generation

- 6.13 Renewable energy generation is a requirement for the continuation of future economic and social development. In general, planning policy is in support of sustainable waste management and renewable energy generation at national, regional and local levels.
- 6.14 The Kyoto Protocol seeks to ensure that parties signed up reduce their greenhouse gas emissions by at least 5% below 1990 levels in the commitment period 2008-2012. The Kyoto Protocol also seeks parties to achieve their quantified emission limitation and reduction commitments by carrying out,

'research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies.'

- 6.15 The UK signed up to the Kyoto Protocol and is party to the initial aims of reduction in greenhouse gas emissions. The proposed biogas plant at Sutton Lodge Farm will assist in achieving these aims and will contribute to a reduction in greenhouse gases.
- 6.16 Kyoto is only the first step towards a sustainable future. International negotiations are now taking place under UNFCCC to agree the future for international climate change policies in Copenhagen in December 2009.
- 6.17 In April 2009, the European Council adopted an climate-energy legislative package (Directive 2009/29/EC) containing measures to fight climate change and promote renewable energy. This package is designed to achieve the EU's overall environmental target of a 20 % reduction in greenhouse gases and a 20 % share of renewable energy in the EU's total energy consumption by 2020. Three main renewable energy sectors have been outlined. These are electricity, heating and cooling and transport. The Directive also aims to remove the unnecessary barriers to the growth of renewable energy.
- 6.18 UK targets for take-up of renewable energy are in line with international and European targets of a 20% share of renewable in UK energy consumption by 2020. This is an ambitious target, given that this figure was less than 2% in the UK in 2005. The details of how the EU 2020 target is to be implemented – including the contribution that each Member State is to make - have yet to be agreed. The UK Renewable Energy Strategy consultation ended in September 2009. The document highlights that currently bio energy (for example the conversion of food wastes to produce energy) accounts for approximately 2.3% of the UK energy generation and only 1% of our heat needs. To meet our share of the EU 2020 renewable energy target the analysis suggests that biomass-fuelled technologies, including biogas, may need to provide around 30% of the UK's renewable electricity and heat generation. An increase on this scale means we will have to make the best possible use of UK-produced biomass resource, including waste.

- 6.19 Projects such as the biogas plant at Sutton Lodge Farm, have the potential to be adopted throughout the UK in suitable locations. This would help to increase this production of renewable energy and, more importantly, to reduce the amount of greenhouse gases reaching the atmosphere and exacerbating climate change.

Justification for location

- 6.20 In 2007, LCC wrote to farmers and local land owners regarding the possibility of renewable energy solutions for agricultural waste production. The applicant, a dairy product supplier to Tesco and Arla, has worked comprehensively with the Council to find a solution for the reuse of agricultural wastes together with sustainable energy production through a community anaerobic digestion facility.

- 6.21 Site selection was therefore restricted to land within the ownership of the applicant. Notwithstanding this requirement, this section will also investigate alternative locations as highlighted within the RSS and WSD and reasons for site rejection.

General Location of Site

- 6.22 The WDF highlights the waste recycling requirements for Leicestershire and the amount of residual municipal and C&I waste requiring treatment or disposal after recycling at the end of the WDF period. This is estimated at around 900,000 tonnes per annum. Whilst the main aim of the plant is to take the 20,000 tonnes of local agricultural wastes, 35,000 tonnes will be redirected from landfill to create an efficient and viable mix for fertilizer and energy production.

- 6.23 As detailed within Policy WCS4, facilities should ideally be placed on the edge of towns and urban conurbations to reduce distances between collected waste and waste disposal centres. If this is not possible, previously developed brownfield land or land forming part of major development proposals will be prioritised. Greenfield land will be considered providing there is no unacceptable harm to land or communities.

- 6.24 In the case of this application, the anaerobic digestion facility is primarily for the disposal of agricultural wastes. The plant will input a total of 55,000 tonnes of waste and export in the region of 50,000 tonnes (90% of the import). The waste ratio for input will be approximately 36% farm waste, 64% other organic local waste thus ensuring a viable mix for energy production and ultimately the longevity of the project. These figures should not however be looked at in isolation; the main export of biofertiliser (47,000m³

pa) is a valuable alternative to synthetic fertilisers and will be utilised on the surrounding land. Some of this land will be used to grow maize for silage which will be added to the plant waste mix. The location of the plant is vital to allow the export of biofertiliser through pipeline, thus reducing transportation and supporting local communities through the trading of silage and fertilisers.

6.25 Taking the above requirements into consideration the agricultural throughput will be approximately 65%. A farm based facility such as this cannot feasibly be located in or adjacent to major urban areas as this would increase transportation and traffic movements.

6.26 Looking specifically at reduction in traffic movements Table 17 of the TA identifies the available waste within 50miles of the site. This table is reproduced as figure 1 below for information.

Potential Waste Supplier	Tonnage / annum	Number of loads / annum	Current Destination	Miles / trip (Existing)	Miles / trip (AD plant)	Mileage diff / trip	Total mileage difference / annum (1 way trips)	Total mileage diff / annum (2 way trips)
LE3 3JZ	624	62	Cropston - LE7 7HG	4.2	9.5	5.3	331	661
LE4 1EX	2,080	208	Cropston - LE7 7HG	4.5	14.8	10.3	2,142	4,285
CV9 1LQ	2,340	234	Coleshill - CV37 7HN	14.1	14.1	0	0	0
LE13 1GA	1,560	156	Thorpe on the Hill - LN6 4RL	44.7	26.8	-17.9	-2,792	-5,585
LE11 5JT	650	65	Thorpe on the Hill - LN6 4RL	47.4	24.3	-23.1	-1,502	-3,003
Leicestershire	450	45	Thorpe on the Hill - LN6 4RL	49.7	11	-38.7	-1,742	-3,483
Barton Under Needwood	1,080	108	Thorpe on the Hill - LN6 4RL	70.9	38.6	-32.3	-3,488	-6,977
LE65 2UF	572	57	Thorpe on the Hill - LN6 4RL	56.9	25.4	-31.5	-1,802	-3,604
(50 mile radius of LE9 4JU)	3,851	385	Dunton Bassett - LE17 5JP	22.0	20.1	-1.9	-732	-1,463
LE4 9LN	1,500	150	Thorpe on the Hill - LN6 4RL	47.9	12.6	-35.3	-5,295	-10,590
NG31 7XU	500	50	Newark - NG24 3J	13.3	4.3	-29.7	1,485	2,970
LE17 6EG	1,500	150	Wymington - NN10 9LU	31.8	15.3	-16.5	-2,475	-4,950
LE18 4ZH	3,500	350	Cropston - LE7 7HG	11.1	8.6	-2.5	-875	-1,750
LE67 3DW	1,000	100	Thorpe on the Hill - LN6 4RL	59.8	20	-39.8	-3,980	-7,960
CV9 1LQ	2,000	200	Coleshill - CV37 7HN	14.1	14.1	0	0	0
LE3 UK	2,000	200	Cropston - LE7 7HG	4.4	9.1	4.7	940	1,880
LE1 UK	3,150	315	Cropston - LE7 7HG	6.1	11.5	5.4	1,701	3,402
LE4 1EX	500	50	Cropston - LE7 7HG	4.5	14.8	10.3	515	1,030
(50 mile radius of LE9 4JU)	3,000	300	Dunton Bassett - LE17 5JP	22	20.1	-1.9	-570	-1,140
(50 mile radius of LE9 4JU)	3,143	314	Dunton Bassett - LE17 5JP	22	20.1	-1.9	-587	-1,174
Cow Slurry - LE9 4JA	3,300	165	Remain on Farm	0	1.9	1.9	314	627
Cow Slurry - LE9 4JU	1,000	50	Remain on Farm	0	0.6	0.6	30	60
Poultry Manure - LE9 4JA	3,000	150	Remain on Farm	0	1.9	1.9	285	570
Cow Slurry - LE9 6RB	3,000	150	Remain on Farm	0	2	2	300	600
Maize Silage	10,000	500	Remain on Farm	0	1.9	1.9	950	1,900
	55,300			551.4	382.1	-169.3	-16,856.84	-33,713.68

Fig 1. Mileage difference for imports (Table 17 of TA)

6.27 Of particular interest is waste from Leicestershire postcodes LE65 and LE11 which travel almost 50miles to Thorpe on the Hill to dispose of waste. Waste at Barton under Needwood also travels over 70 miles to Thorpe on the Hill. The facility at Sapcote will see a reduction of over 23 miles and 38 miles respectively.

6.28 Overall, taking into account possible waste streams in the area, based on a collaboration of Tesco and Arla waste together with other suppliers of Tesco and the applicant, it is calculated that the total annual mileage savings to deposit waste at

Sutton Lodge Farm will be over 33,000 miles. This in turn leads to a calculated CO₂ saving of 52 tonnes per annum.

6.29 Figure 2 highlights the location of potential waste sources together with the location of current waste recycling and landfill sites. The map highlights there is a concentration of waste sources to the east and south of Leicester. Land at Sutton lodge Farm is central to these waste sources and ideally located to minimise travel.

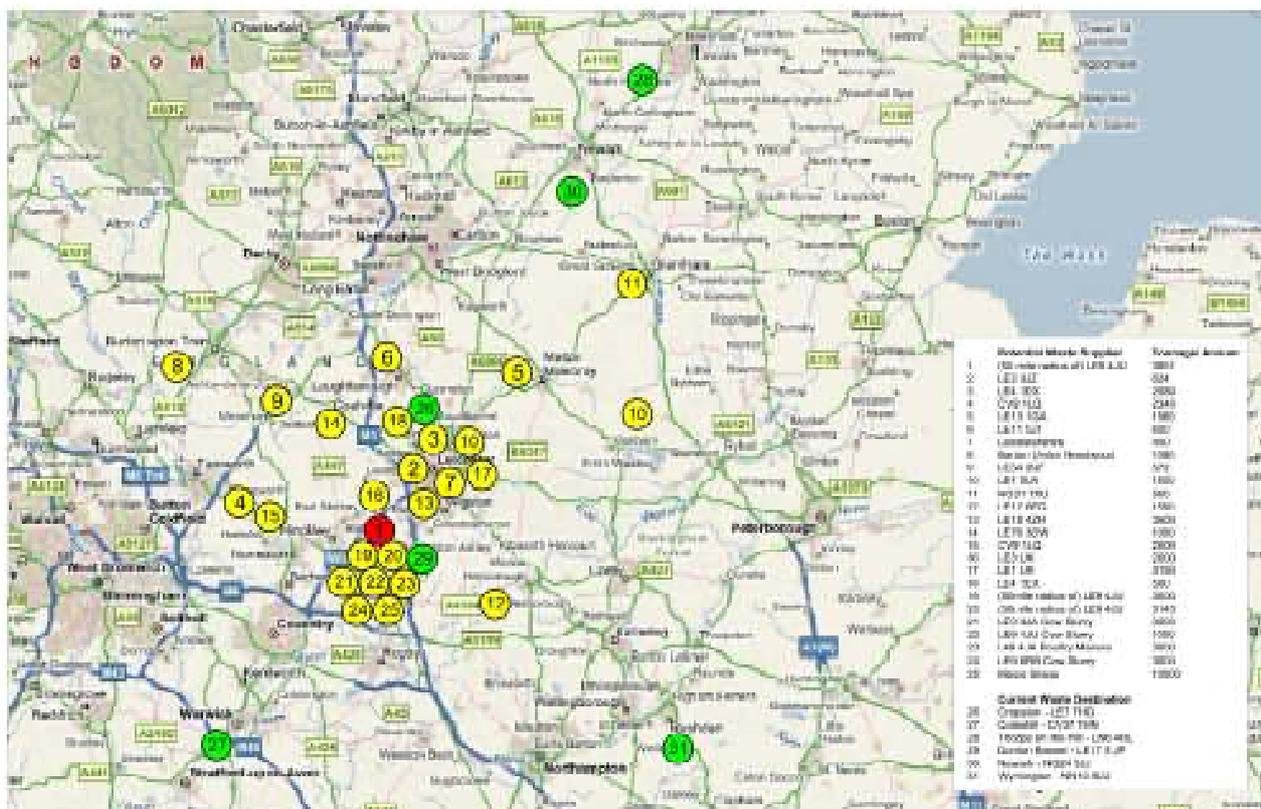


Fig 2 - Locations of potential waste sources and landfill sites currently utilised. Postcodes taken from Figure 1.

6.30 Consideration must also be given to waste disposal. The applicant has worked closely with neighbouring land owners to provide information regarding both the economic and environmental benefits of using biofertiliser. Figure 3 highlights potential areas for biofertiliser spreading in the locality. It is of note that land is within a 10mile radius of the site, the majority of which is within a 5 mile radius. The location also offers the opportunity to pipe biofertiliser onto the land which further reduces vehicular movements. The current estimation is 60% of biofertiliser will be pumped onto the land

however the biogas plant will be capable of distributing greater amounts in the future should this be desirable to local land owners. This land identified will also be used for maize production for silage.

6.31 It has been calculated that approximately 2,500 acres will be required for the spreading of 47,000m³ pa of biofertiliser. Figure 3 highlights potential land in excess of 2,500acres. Negotiations are being undertaken with local land owners however exact details of land ownership of interested parties has been withheld to ensure privacy.

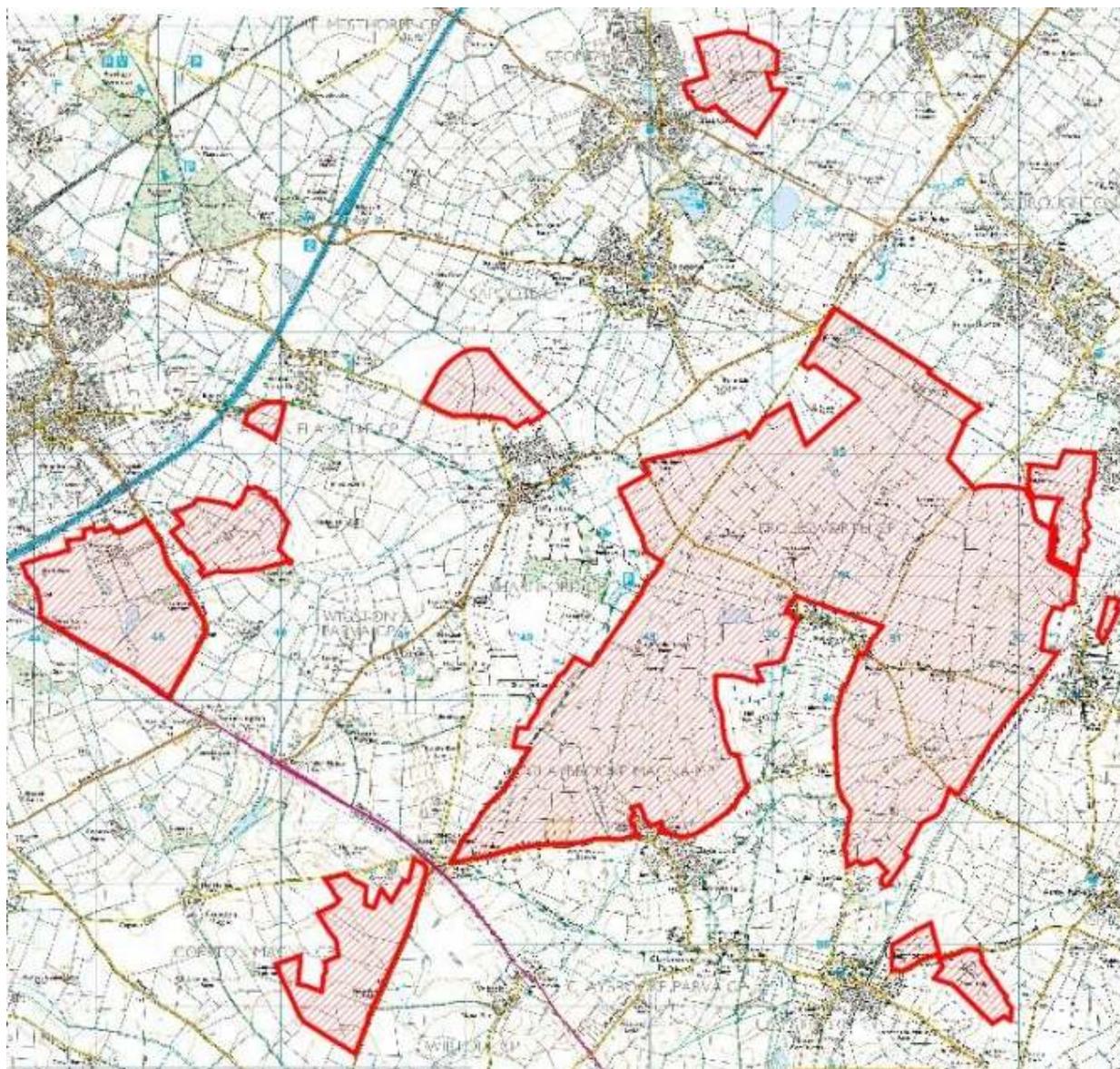


Fig 3 - Indicative area for biofertiliser spreading (also see Appendix B)

6.32 In selecting the ideal site for this development the applicants needed to take into account the following criteria:

- Land not key to animal welfare or farming operations
- Proximity to the dairy farm for export of slurry
- Proximity to external waste sources
- Proximity to recipients of bio fertiliser
- Proximity to national grid connection
- Transport connections and suitable site access
- Any restrictive designations or site constraints
- Neighbouring land uses
- Flora and Fauna

6.33 The settlements closest to and central to the land available for spreading are Sapcote, Broughton Astley, Stoney Stanton, Sharnford and Frolesworth. Priority 2 land for development as identified by the WSD includes land forming part of major development proposals, existing employment land, previously developed land, contaminated land, existing mineral workings and underutilised farm buildings and their curtilages. Due to the area being predominantly agricultural and the small size of these settlements there is no land available suitable for development that falls within the Priority 2 categories. The only location available for the proposed anaerobic digester is on greenfield land which forms part of a wider farm holding.

Specific Site Assessment

6.34 The applicant ownership is detailed within figure 4 and Appendix B.

6.35 The first stage in site selection was an overview of land and locations within close proximity to good transport links. Land to the east of Stoney Stanton, to the east of Leire, to the east of Ullesthorpe and west of Broughton Astley were all considered a distance from the B4114 which was the main arterial link, and in the cases of Stoney Stanton, Leire and Ullesthorpe, vehicles would most likely pass through residential areas to gain access to the site.

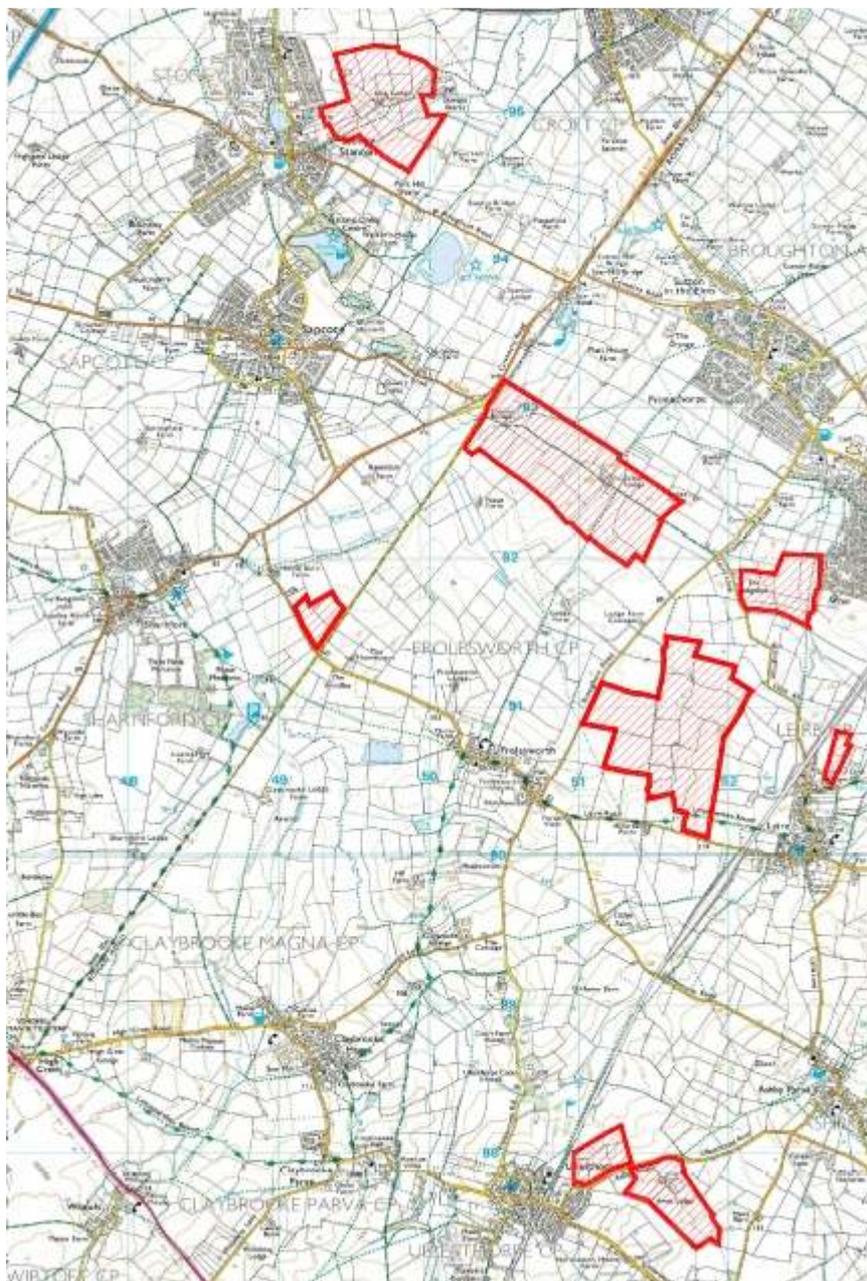


Fig 4 – Mark Lovatt Land Ownership

6.36 The remaining land parcels at Sutton lodge Farm, Frolesworth, Ullesthorpe and on Frolesworth Lane were further studied and four sites chosen which reflect the ideal site selection criteria. Figure 5 highlights the preferred locations for development.

- Site 1 – Amos Lodge Farm Buildings, Ullesthorpe
- Site 2 – Bottom of Sutton Lodge Farm, Broughton Astley
- Site 3 – (Hollies) Land at Broughton Road, Frolesworth
- Site 4 – (Fosse Field) Land on Frolesworth Lane, Frolesworth.

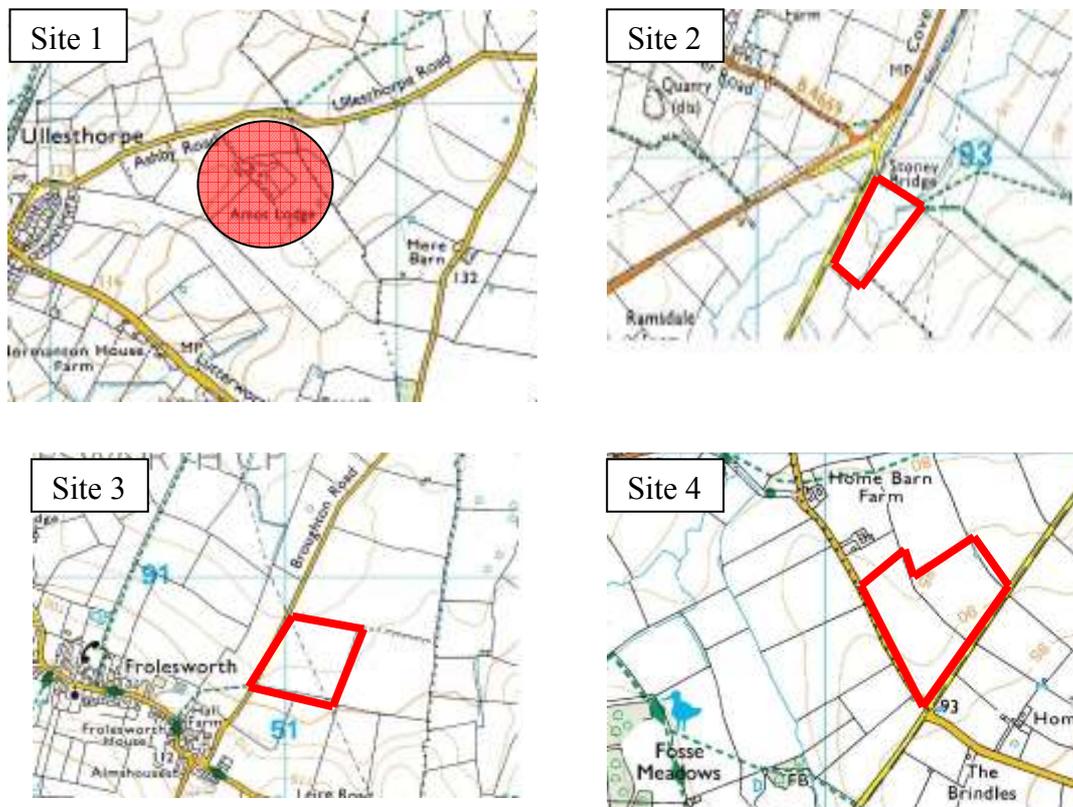


Fig 5 - Alternative site selections

- 6.37 Figure 6 documents the initial analysis of each land parcel, highlighting key strengths and weaknesses based on criteria as set out in paragraph 6.32.
- 6.38 This early site analysis clearly indicated that site 3 was the least favourable primarily due to the location close to the village of Frolesworth and poor transport links to a HGV route. Site 1 also had disadvantages due to access and transportation. Sites 2 and 4 progressed and were subject to further consultation.
- 6.39 Michael Green, a highways officer at LCC was consulted and it was highlighted the importance of sites with good transport links. Whilst all sites had direct access to the highway network, Michael Green indicated a strong preference to sites 2 and 4 due to their proximity to an established HGV network.

	close proximity to agricultural waste sources	close proximity to external waste sources	close proximity to recipients for biofertiliser	grid connection	transport connections	good site access	no restrictive designations	no restrictive neighbouring land uses	good screening	land not key to farm operations	Within 50m of residential properties
Site 1	✓	✓	✓	✗	✗	✗	✓	✓	✗	✗	✓
Site 2	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
Site 3	✓	✓	✗	✗	✗	✗	✓	✗	✗	✓	✓
Site 4	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓

Fig 6 – Analysis of sites

6.40

6.41 In collaboration with Jonathan Fellowes of Tesco and Eon Central Networks it was determined that site 4 was not close to an 11kV distribution network wire (the appropriate connection voltage for this plant). Site 2 at Sutton Lodge Farm has an appropriate network wire running along the edge of the site and is in close proximity to a primary sub station. Site 2 also had a number of other positive attributes such as good screening and distance from residential properties.

6.42 For these reasons site 2 was chosen as the preferred site. Further to discussions with the EA it was discovered that up to date flood modelling had been carried out on the River Soar and the chosen site was liable to flooding. A field immediately adjacent to the south east, outside the flood plain was chosen for the development as the previous attributes were still relevant including screening, good transport links etc. A new access would be constructed within the lower field (site 2) further to detailed discussions with the EA.

6.43 Site access has been discussed in detail with the EA and LCC highways. A site entrance in the same location as the existing entrance was preferred due to limited vehicular passage on the Fosse Way. To separate farm traffic, residential traffic and biogas traffic, the site entrance was located at point 1 on figure 7. Further to discussions with the EA

the Fosse Way is significantly lower than the surrounding land in this area and would be unsuitable for the construction of a new access. Point 2 highlights the preferred access whereby the access has been widened to increase visibility and highway safety, and then splits to separate the plant and farm/residential traffic. The bridleway remains unaffected as this joins the farm track at a different access point off the Fosse Way.

- 6.44 Access to the plant remains in the south western corner to utilise an existing gateway and due to the topography of the land.

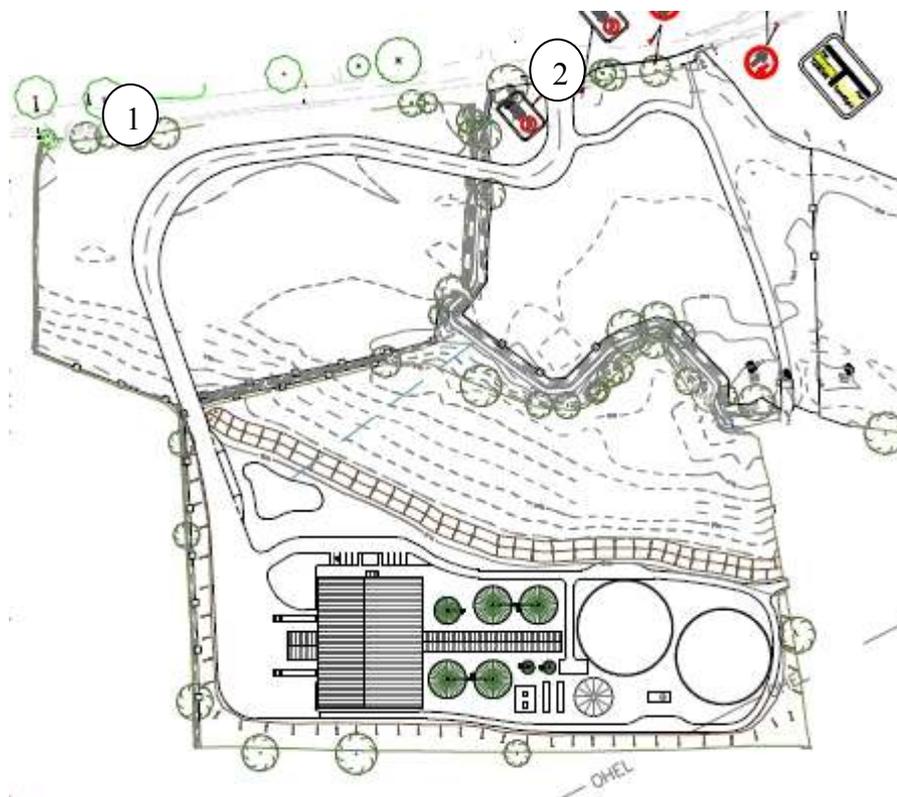


Fig 7 - Alternative site accesses considered

- 6.45 It has been shown that there is a requirement within Leicestershire for a reduction of waste going to landfill and an need for renewable energy solutions. The site falls within priority 2 land as identified within the WDF and is in an acceptable location. This site location is central to waste streams ensuring positive benefits to the environment including reduction in journey time and traffic generally in the region. This in turn reduces CO₂ emissions from vehicles and unnecessary journeys. This site is not intended to capture all of Leicestershire's waste, being capable of accepting 35,000 tonnes, however it will contribute to the targets for reduction in landfill highlighted within the

WSD. This rural location also supports farm diversification and creates local rural jobs in line with recommendations within PPS7.

6.46 In conclusion the site is fully justified, is considered a highly sustainable location and complies fully with both national and regional policies.

ii Design of the Proposal

6.47 The project design and size is determined by the plant technologies and waste capacity. Notwithstanding this, the plant has been sited to maximise existing screening and minimise the visual impact on the area.

6.48 The buildings will be cut into the slope of the hill which forms the development site, which will result in a shallow cut slope along the south-eastern edge of the site. A bund will be created along the north-western boundary of the site; this will be landscaped, as described below, to screen the development. All of the trees and hedgerows surrounding the site are to be retained.

6.49 New woodland/thicket planting is proposed on the boundaries of the site, as illustrated on the landscape plan. This will comprise a mix of oak, ash and rowan with an understorey of hawthorn, holly, dogwood and hazel. In addition, a new hedgerow, interspersed with standard trees, will be planted alongside the access road to screen it from view.

6.50 A full assessment of visual impact is contained within the ES.

iii The impact on the surrounding area & proposed mitigation

6.51 Further to discussions with LCC and an EIA screening, the following areas were identified as being susceptible to potential environmental impact:

- Archaeology
- Ecology
- Trees and Hedgerows
- Air Quality
- Noise
- Flood Risk

- Visual Impact
- Contamination
- Transport

6.52 Of the above impacts transport, flood risk and visual impact were formally identified as necessary for EIA and the remaining matters have been subject to independent reports. A summary of findings relating to the environmental areas is provided below.

6.53 To assess the possible impact on neighbouring residents, a public consultation exercise was also undertaken. Details are also summarised below.

Archaeology

6.54 The initial desk top report undertaken by Leicester University indicated that significant archaeological remains have been discovered in the locality (see Appendix C). As the site is largely undisturbed there is a moderate potential for pre-historic remains to be discovered during groundworks and a moderate to high potential from the Roman period. There is a low potential for medieval or post medieval archaeology.

6.55 A further geophysical survey was undertaken of the site which contained evidence of a pre-historic settlement c5000BC. The design of the foundations will cause minimal impact to the historic site however a watching brief will be maintained throughout foundation construction. A further report is being undertaken by Leicester University and will be submitted due course.

Ecology

6.56 Further to discussions with LCC resulting from the Scoping opinion responses, an ecological survey and landscape use assessment by bats was undertaken by BJ Ecology to identify any protected species (see Appendix D).

6.57 The ecological survey found no remarkable plant assemblage on the site and no evidence of invertebrates, amphibians, reptiles, water voles or otters. Evidence of nesting birds within the hedgerows was found however there were no occupied nests at the time of inspection. There was no evidence of any protected species on the site.

6.58 There were two bat species recorded utilising the local habitat and area surrounding the development site. These were the common pipistrelle bat and the noctule bat. 105 bat events were recorded (96 being pipistrelle and 9 being noctule). It is of note the Pipistrelle is the most common species of bat in the UK. The proposed development site experienced bat movements on the northwest and southeast boundaries, whilst the field adjacent to Fosse Way, experienced bat movements to the north east and north west boundaries. Three trees were identified as potential bat roosts however no evidence of bat roosts was found during the emergence survey.

6.59 The development leaves the hedgerows largely undisturbed. A new opening and roadway will pass over the river and enter the plant site in the south west corner. The report concludes there is very little risk to bats or other species. Buffer strips of tall grass around the perimeter of the development site will be retained to encourage insect species in the locality.

Trees and Hedgerows

6.60 A tree survey has been undertaken by Ian Keen Ltd (Appendix E) to document any potential damage to trees and tree removal. The only impact on trees and hedgerow is during the construction phases of the access track. Two trees will require removal however this will be mitigated through the planting proposed.

Air Quality

6.61 An air quality appraisal was undertaken by SLR consulting (Appendix F). The preliminary scoping assessment study determined that air quality risks were low and indicated that a baseline air quality review should be undertaken. This baseline air quality review considered activities, potential releases and emission controls, the sensitivity of potential receptors, the probability and consequences of releases, and compliance with regulations and standards.

6.62 The report indicates emissions from the installation are likely to be low. Installation design ensures the prevention of point source and fugitive releases by enclosure, capture and treatment of emissions.

6.63 The site is well located with respect to potential distant receptors. The location and layout ensure that the probability and consequences of exposure result in low or very low risk to receptors.

6.64 Specific findings include:-

Construction:

- Pollutants from dust and traffic would not be significant.
- Dust from some construction activity such as soil mound construction and site preparation has the potential to cause disturbance to transient users of the adjacent bridleway and nearby footpath during dry weather and high winds. Whilst this may have no more than a passing nuisance affect it is recommended that significant soil disturbance activity is curtailed during dry windy weather blowing to users of the bridleway and footpath.

Operation:

- The risk assessment indicates that the potential magnitude of risks from releases from the process and including odour are likely to be low (for nearest transient receptors) or very low for all other receptors.
- Releases from the combustion of biogas have been considered in more detail. Initial estimated indicated that peak hourly nitrogen oxides could not be ruled out as insignificant. However, more detailed screening estimates find that even under worst case conditions, environmental concentrations at the most sensitive receptors would be well within relevant air quality standards.

6.65 Measures in place represent the Best Available Techniques to minimise or prevent releases. Operations areas and waste storage are enclosed. The main reception area is maintained under negative pressure with treatment of captured air. Surfaces, bays, floors etc are maintained in a clean condition and process plant is fully enclosed.

6.66 Findings indicate that with the environmental protection measures proposed that the installation represents a low risk to the air quality of users in the area.

Noise

6.67 A noise impact assessment has been undertaken by Hepworth Acoustics to identify typical day and night time background noise levels adjacent to the closest residential

properties (Appendix G). The assessment considered the worst case impact of noise from fixed plant and vehicle movements at these locations.

- 6.68 The main noise source was that of distant traffic both during the day and night time surveys. Noise from the plant during the daytime is calculated between 12 and 7db below the lowest background noise levels indicating that complaints would be unlikely. The night time calculations highlight noise will be 4db below and equal to the background noise levels also indicating that complaints are unlikely.
- 6.69 As highlighted within Annex 1 to PPS24: Planning and noise, background level readings and estimated plant noise levels are significantly less than 55db and as such it is stated noise need not be considered as a determining factor in granting planning permission.

Flood Risk

- 6.70 A flood risk assessment has been undertaken by Odyssey Consulting Engineers and is appended to the ES.
- 6.71 The proposed development is located outside Flood Zones 2 and 3 on land above the 1 in 100 year and 1 in 150 year including climate change as indicated on the Environment Agency's Section 106 flood mapping. The development area can therefore be categorised as Zone 1, low risk of flooding.
- 6.72 A review of the Leicester Flood Alleviation Scheme Hydraulic Model and Report is being undertaken with the proposed access road and flood arches included. It has been indicated prior to verification that with the use of flood alleviation land within the Clients control there will be little impact on the up and downstream catchment areas in relation to flooding.
- 6.73 The risk of pollutants entering the groundwater is extremely small due to the employment of the source control measures proposed.
- 6.74 The preliminary storm water drainage scheme proposed within the Flood Risk Assessment demonstrates that Sustainable Urban Drainage techniques can and will be utilised on this site in the form of an attenuation pond. This is located adjacent to the main service building within the development site.

- 6.75 The proposal will limit the surface water discharge to replicate greenfield run-off and therefore will not increase flood risk.
- 6.76 The Flood Risk Assessment demonstrates the proposed development fully complies with the requirements of PPS25 and is considered appropriate in this location.

Visual Impact

- 6.77 A full assessment of visual impact is contained within the ES. The overall effects of the proposed development on the local landscape can be summarised as being slight adverse only. This judgement is made for a winter day soon after the completion of the development - effects in summer would be reduced, and effects would also decline progressively over time as the existing and proposed vegetation within and around the site matures. These effects should therefore again not be regarded as being significant in terms of the overall effects of the proposed development.
- 6.78 The assessment of visual effects has shown that there would be some moderate adverse visual effects, principally on users of the neighbouring public rights of way. These effects are for a winter day soon after completion of development, and would be expected to decline progressively over time. In the context of the scale of the proposed development, these effects should not be regarded as being of overall significance.

Contamination

- 6.79 A survey has been undertaken by ST Consult into the potential sources of contamination currently on site and as a result of the biogas plant (Appendix H). The initial desk survey and walkover survey identified potential sources of contamination being a backfilled pond to the north of the site and the build up of gases as a result of previous farming practices on the development site.
- 6.80 A further intrusive investigation was undertaken to give an account of ground conditions, implications due to foundation type, a visual assessment of ground conditions and limited testing.

6.81 The report concludes that:

- The soil is generally free from significant levels of contamination and is considered acceptable to be reused within the soft landscaped areas. The underlying soils are also free from significant contamination,
- Water samples from the River Soar were free from elevated levels of contaminants,
- There is only a limited risk from landgas for which passive gas precautions have been recommended in floor slab design,
- The site does not lie within a SZP for public drinking water however the adjoining water course is classed as a sensitive receptor. It is recommended surface water drainage is regulated; and
- Due to the importation of possible contaminants it is recommended environmental controls are adopted for storage.

6.82 The proposed biogas plant will operate within EA guidelines and will be subject to strict controls. A full drainage assessment is included within the flood risk assessment which addresses concerns regarding surface water run off.

Transport

6.83 A full assessment of transport effects has been included within the ES. The TA discusses the potential traffic generation at the site and concludes that the marginal estimated increase of 3 and 4 two-way HGV movements per hour for the six month periods without the export of and including the export of the biofertiliser respectively, will not have an adverse effect on the existing road network.

6.84 The proposed anaerobic digester facility would result in a total net decrease of 30,761.38 HGV miles per annum (two-way trips). In assessing the overall net difference in terms of the potential CO₂ savings it has been demonstrated that the facility would save 52 tonnes of CO₂ /year. This is a significant benefit of the development and addresses the central aim of the LTP2 to reduce CO₂ and congestion.

6.85 The overall number of HGV movements through the identified villages of Sapcote, Sharnford, Stoney Stanton and Broughton Astley has shown to be minimal. The main access to the site for import and exports is by a nationally identified HGV route.

- 6.86 The assessment concludes that the proposed development is in accordance with national and regional guidelines and that for the reasons set out in the report the proposed development will not have a significant transport impact and that there are no transport grounds for refusing the application.

Construction

- 6.87 A methodology for construction and mitigation measures is contained within Appendix I. All current building regulations, EA guidance and safety at work legislation will be adhered to throughout the design and build process.

- 6.88 Construction of the plant is expected to take 18 months.

Public consultation

- 6.89 A public exhibition was held at Sapcote village hall on 10th July 2009 providing details of the scheme together with a questions and answers leaflet and information regarding biogas. The exhibition was advertised in the Leicester Mercury, Lutterworth Messenger and Swift Flash, whilst Sapcote, Frolesworth and Broughton Astley Parish Councils were sent invitations directly to place on parish notice boards. 66 people attended the event and a summary of responses was recorded. These are detailed within Appendix J.

- 6.90 Comments received were generally positive recognising the community benefits for recycling, alternative energy production and local employment. The main concern related to traffic generation.

- 6.91 David Tucker Associates were provided with this information and assessed the likely impacts caused by traffic within the villages and surrounding area. The scope of the assessment was first agreed with the Highways department. The report concludes there will only be minimal impact on the village of Sharnford, which is situated on the designated HGV route.

Summary

- 6.89 Possible development impacts have been identified and reports undertaken in line with national guidance and regulations. It is clear there are minimal archaeological, ecological, air quality, flood risk and noise implications from the site. The development is viewed as agricultural style buildings within an agricultural environment and will not

be detrimental to visual amenity. The site will contribute to renewable energy production and reduce waste going to landfill. HGV movements across the county will be reduced with significant CO₂ savings.

7.0 CONCLUSION

- 7.1 This submission has been instigated by LCC's drive towards sustainable waste management and international directives for the reduction of carbon and increases in renewable green energy production. The project is a farm based solution for waste management of local slurries and waste.
- 7.2 The project provides for a biogas plant which will take approximately 55,000 tons of organic waste and convert to electricity, heat and biofertiliser. The electric produced will be sufficient to run the biogas plant and approximately 2,365 households. The biofertiliser is a high quality alternative to chemical fertilisers currently used for food production and will help reduce the need to import such products which are mainly produced overseas.
- 7.3 The biogas plant will divert waste which is mainly disposed of at landfill in Nottinghamshire, Leicestershire and Warwickshire. It is estimated over 30,000 miles will be saved per annum through diversion to Sutton Lodge Farm and an annual total saving of 52 tonnes of CO₂/year.
- 7.4 The volume of waste into landfill will decrease and by capturing methane, not only will there be a significant reduction in gases contributing to the greenhouse effect, but renewable energy will be produced.
- 7.5 The impact of the development on the local environment has been assessed and it is concluded that the scheme is not detrimental to residential amenity, visual amenity highway safety or flora and fauna.
- 7.6 An assessment of both national, regional and local policies highlights there is a significant requirement to recycle waste and reduce the reliance on fossil fuels for energy. The biogas plant at Sutton Lodge Farm plays a significant role in local and regional requirements and makes contributions towards national targets on renewable energy production and CO₂ emissions. The application accords with the development plan and ensures that environmental impacts are minimised.