

3/10/1598/FP - Farm based anaerobic digester at Buttermilk Hall Farm, Baldock Road, Buntingford, SG9 9RH for Hallwick Ltd

Date of Receipt: 03.09.2010

Type: Full - Major

Parish: ASPENDEN, COTTERED

Ward: MUNDENS AND COTTERED

RECOMMENDATION

That planning permission be **GRANTED** subject to the following conditions:-

1. Three year Time limit (1T12)
2. Levels (2E05)
3. Approved Plans (2E10) L10414-LV1A Report Appendix 1-01, L10414-LV1A Report Appendix 1-02, L10414-LV1A Report Appendix 1-03, L10414-LV1A Report Appendix 1-04, L10414-LV1A Report Appendix -05, L10414-LV1A Report Appendix 1-06, P10-BMLK-001, P10-BMLK-002, P10-BMLK-003, P10-BMLK-004, P10-THFB-005, P10-BMLK-006, TCP-01, SD1.
4. Materials of Construction (2E11)
5. No external lighting (2E26)
6. Notwithstanding the details shown on the approved plans, and prior to the commencement of the development, details of additional noise attenuation measures for the exhaust stack, together with its siting within the site shall be submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be implemented, retained and maintained in accordance with those details to the satisfaction of the Local Planning Authority.

Reason: To safeguard the amenities of residents of nearby properties in accordance with Policy ENV25 of the East Herts Local Plan second review April 2007.

7. No development shall take place until a scheme for the improvement of the access has been submitted to and approved in writing by the local planning authority and an agreement under s.278 of the Highways Act signed, for Highways works to the carriageway of the A507 abutting the access to the site at Buttermilk Hall Farm. The highway works shall thereafter be

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completed in accordance with the approved scheme prior to the first use of the development hereby permitted.

Reason: To ensure that the improvements to the carriageway at the point of access to the site is constructed to the specification of the Highway Authority as required by the Local Planning Authority.

8. Hard Surfacing (3V21)
9. Construction Parking and Storage (3V22)
10. Wheel Washing facilities (3V25)
11. Hedge protection and retention (4P06)
12. Tree/natural feature protection: fencing (4P07)
13. Landscape design proposals (4P12) l, j, k, l. 'Adapt 'to include landscaping in the form of hedgerows for the bunds at the main access to the site from the A507'
14. Landscape works implementation (4P13)
15. Prior to the commencement of the development hereby permitted, details of the management of surface water to include sustainable drainage systems shall be submitted to and approved in writing by the Local planning Authority.

Reason: In the interests of the management of surface water on the site and in accordance with Policy ENV21 of the East Herts Local Plan Second Review April 2007

16. The anaerobic digester plant hereby permitted shall use only crops grown on the land identified within the application as 'Buttermilk Farm Land' as shown on Plan SD1 and shall be operated in accordance with the details contained within the submitted application. No additional crops shall be brought onto the site for use within the digester unless otherwise agreed in writing by the local planning authority.

Reason: To prevent an unacceptable increase in traffic to and from the site in the interests of amenity and highway safety and in accordance with policies ENV1 and TR1 of the East Herts Local Plan Second Review April 2007.

Directives:

1. Other legislation (01OL)
2. Highway Works (05FC)

Summary of Reasons for Decision

The proposal has been considered with regard to the policies of the Development Plan (East of England Plan May 2008, Hertfordshire County Structure Plan, Minerals Local Plan, Waste Local Plan and the saved policies of the East Herts Local Plan Second Review April 2007), and in particular policies SD3, GBC3, ENV1, ENV2, ENV11, ENV21, ENV25, LRC9 and national planning guidance PPS22. The balance of the considerations having regard to those policies is that permission should be granted.

_____ (159810.SD)

1.0 Background

- 1.1 The application site is shown on the attached OS extract. It comprises a large area of land located on the southern side of Baldock Road, situated in rolling arable countryside within the Rural Area beyond the Green Belt. It forms part of the larger Buttermilk Hall Farm on the A507 between Cottered and Buntingford.
- 1.2 The main farm complex stretches south from the residential properties and the bunded vehicular entrance to the farm fronting the A507, Baldock Road some 100m south into the site. Buttermilk Hall, one of the dwellings on the A507 is a Grade II Listed building. To the rear are large portal barns for grain storage, agricultural plant storage, fertilizer silos and farm management offices situated within the sloping site.
- 1.3 The farm area contains various outbuildings concentrated around a central core of portal barns, and silos, including a small domestic recycling centre for Green Waste approved by Herts County Council in 2007 as a farm diversification project operating from one of the redundant agricultural barns on the site.
- 1.4 The owners of the site have extensive land ownership and land management holdings in Cottered and the surrounding land area which they farm for arable crops. The surrounding to the site are of large expanses of arable fields, exposed long views in all directions with minor interruptions in the form of field divisions, hedges and tree lines.

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- 1.5 From the main highway, the A507 located to the north of the farm, the complex silo structures, barns and other buildings are largely hidden from view due to the incline of the site, the highway being elevated above the farm area. On approach from Cottered to the west there are limited long distance views of the farm complex and more noticeably the open storage area for the large plant vehicles used on the farm. Further into the site there is a dell where the site falls away to the small copse of trees and hedgerow at the bottom of the valley floor.
- 1.6 Part of this area has previously been land filled with inert aggregates, the land being significantly lower than the surrounding fields using the natural landform of the valley to create a landscaped screened hollow.
- 1.7 The proposed Biogas Anaerobic Digester plant would be located in this area at the Southern end of the farm site within the hollow/dell surrounded by trees and hedgerows on three sides and the higher land of the adjacent field on the western side.
- 1.8 The plant would comprise a cylindrical digester tank of 24m diameter, 6m high, set into the ground by 1.0m with an adjacent residue tank of the same depth 30m in diameter. A 1.0m wide access pathway around the tanks is provided for maintenance purposes. A path to the east of these tanks leads to a low single storey technical building 7m x 12m and 3.5m in height with underground maize grain feed conveyor, hopper and technical equipment is housed. To the eastern area within the adjacent field, situated against the existing hedge/field line, a silage clamp - a hard standing area 55m x 111m is proposed where the year's supply of maize (20,100 tons) will be stored after harvest.
- 1.9 The anaerobic digester unit would operate solely on maize crops produced on land owned or managed by the owners of the farm. The remaining land that is managed by the owners would continue to provide arable crops.

2.0 Site History

- 2.1 In terms of the operation of the farm complex the planning history of the site is as follows:-
 - 3/95/1793/FP Construction of a traditional agricultural Dutch barn, Approved
 - 3/02/1225/CL Retrospective application for the change of use of a yard for scaffolding business (temporary 3 year period), Refused.

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- 3/05/1642/PA Two new adjoining portal framed barns for grain storage.
(Prior approval)
- 3/07/2200/CM Stationing of skips for Green Waste Management, Approved.
- 3/07/2670/CM Green Waste composting, Withdrawn.
- 3/10/0901/PA Portal barn for grain, Approved.
- 3/10/0274/CM Change of use of part of agricultural building for internal management of storage waste skips for Green Waste, with continued use of external compound for Green Waste management centre, Approved.

3.0 Consultation Responses

- 3.1 The Environment Agency has confirmed that an EIA was not required and the Local Planning Authority has carried out a screening opinion. As regards flood risk assessment it will be the management of surface water run off and drainage that will ensure the development does not contribute to any increase of flood risk either on-site or elsewhere. A suitably worded condition should be attached to any grant of permission to seek details of a surface water management proposal.
- 3.2 Property Services (Engineering) comment that the proposal has little surface water flooding area shown within the boundary of the application; there are no historical flooding events at the site or in the surrounding properties/land. The site at present is generally permeable and the introduction of what appears to be new impermeable structures could create localised flooding. It is therefore suggested that the site incorporates sustainable drainage systems (SUDs) to process the existing run off and any new surface water generated by the new structures.
- 3.3 Herts Biological Records Centre comments on the Habitat Survey Report July 2010 submitted with the application where the existing mature hedgerow is mentioned. HBRC recommend that in the event of permission being granted, the section of hedge to be removed is done so during the winter's months only November to February inclusive, additional new hedge and tree planting should be carried out to compensate for the loss.
- 3.4 The Landscape Section comment that the gas flare is close to the retained trees. In addition, the digester and residue tanks are possibly within the root

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protection zone of trees T1-T6 on the survey drawing. Policy GBC3 states that within the rural area priority will be given to conserving and enhancing the character appearance and quality of the countryside. Guidance in PPS22 states that landscape and visual effects of particular renewable energy developments may be minimised through appropriate siting, design and landscaping schemes.

- 3.5 The overall sensitivity of the site can be mitigated by suitable woodland planting and hedge planting to enhance the resultant view of the site with full or partial screening as well as improving local biodiversity and improving the existing surrounding landscape within the designated Character Area 141 of the Council's SPD Landscape Character Assessments.
- 3.6 As such, Landscape officers have no objections to the principle of the proposal subject to suitable conditions being imposed. If permission is granted, landscape design and layout could be covered by a suitable condition.
- 3.7 Highways originally commented that the permission should be refused as the proposal would lead to an intensification of use of the substandard access onto the highway A507, detrimental to the safety and users of both the access and the public highway. Highways works under a S278 Agreement subject of planning permission ref 3/02/1615/FP required the construction of a new access. While other works have been carried out, the access has not been improved. As such it is considered that this development should not be carried out until these works are agreed and the appropriate s.278 agreement signed. A condition to this effect is recommended.
- 3.8 Additionally there were concerns that the proposal had the potential to give rise to an increase in vehicular traffic along the A507.
- 3.9 A Transport Statement has been prepared by the applicant's agent for the Highway Authority addressing these matters and as such the highways department have removed their objections subject to conditions in respect of surfacing and wheel washing with a Grampian condition to ensure that the off-site S278 works are completed prior to the commencement of the development.
- 3.10 Environmental Health advises that any permission granted shall include a condition regarding Construction hours of working

4.0 Parish Council Representations

- 4.1 Aspenden Parish Council object that although the focus is on new forms of renewable energy they are extremely concerned about the potential smell and noise on the nearby houses at Buttermilk Hall and would want to make sure that every technical effort is made to minimise the impact on local residents. They ask if it would be possible to site the digester further down the hill away from houses to lessen the impact of the buildings from Baldock Road. Although there are plans for landscaping proposed, previous landscaping required on the bund to the front of the site has not been carried out.
- 4.2 Aspenden residents are also concerned about the possibility of increased traffic coming through the village as an access track has been built off Tannis Court track by Scott and Scott. They ask if the Parish Council can be assured that there would be no digester traffic through the village of Aspenden. Concerns are also raised as to whether the digester is the first step to developing the site at Buttermilk Hall Farm for industrial purposes.
- 4.3 Buntingford Town Council objects to the above mentioned application on the grounds of the increased traffic on the A507 and the potential for unpleasant odour to permeate throughout Buntingford.
- 4.4 Cottered Parish Council wish to object to the application as it does not conform to the Sustainability Development policy SD3 and noise generating development policy EN24 of the Local Plan. Policy SD3-1a requires development to 'limit potential noise, smell and safety concerns'. They comment specifically as follows:-
- Noise: the application includes a noise assessment where it is stated that the 'Exhaust Stack' will create a situation where 'complaints are likely'. The parish cannot support an application which indicates there will be a noise problem.
 - Smell: In the Odour Statement of the proposal which reviews six areas, there is only one value prediction, the value less than 3ou/m33 is approaching the value where odour is considered distinct. The AD process produces hydrogen Sulphide, smells like bad eggs, the gas is inflammable and toxic. Defra suggests that AD plants should have odour control systems. There is no evidence that this plant has this. Other unpleasant smells arise from the spread of digestate.

- **Safety:** The plant would operate continuously presumably at full output of 1MW, the gas engine driving the generator is likely to be around 1,500 hp and the site will be storing sufficient fuel to power the engine, the fuel is methane gas which is colourless, odourless and flammable. The plant therefore contains a large amount of stored energy so has the potential to become a safety hazard.
- **Efficiency:** the feed stock is to be grown on 450ha of the 800ha farm, 35% converted to electricity 65% is not being used but wasted. The maize crop will be produced on the farm's own land and the applicant indicates that similar agricultural traffic would be generated. Comparing yields of maize to wheat the prospect is that 5 times as many movements would be generated or 5 times larger vehicles.
- **Sustainability:** The electricity generating plant will produce 8,400.000kWh of energy per annum which in terms of equivalent diesel would be 763,636 litres, not 1,600,000 (as proposed). The main output of the digester is methane and carbon dioxide of an approximate 60:40 ratio. After methane is abstracted there is residual carbon dioxide resulting in more greenhouse gas being released into the atmosphere.

4.5 Buntingford Civic Society supports the general principle of energy production by methods that reduce overall carbon footprint so long as there is a negligible impact on the local environment in terms of noise smell or appearance. They are concerned that the application does not result in the site becoming a small industrial complex and suggest conditions to approve the application subject to a binding agreement for the electricity to be exported from the site by underground cable, and to ensure that the proposed tree planting and landscaping to screen the site is carried out.

5.0 Other Representations

5.1 The application has been advertised by way of press notice, site notice and neighbour notification

5.2 40 letters of objections and concerns have been received from the areas of Cottered, Aspenden and Buntingford which can be summarised as follows:-

Traffic

- Traffic on A507 already heavy
- Delivery of 20,100 tonnes of maize to the site and other food waste will increase traffic

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- Big grain lorries come down road in Aspenden at harvest time
- Inappropriate traffic will clog and damage the road surfacing
- Too many farm vehicles hurtling through village use single track lane as a short cut.
- The farm at Buttermilk Hall already puts mud on the roads making the roads hazardous
- High levels of traffic will be produced along a very busy road, extra traffic adding to the risk of accidents
- Large vehicles will be passing through the village
- Suggestion that access would be through the narrow village street of Aspenden would be a disaster
- Large maize transporters will use Aspenden Street
- What is the level of waste transported to the site

Neighbour Amenity

- The site builds up high hay stacks throughout the year that cannot be safe.
- The plant will be built behind houses causing health risks
- The plant will be damaging to nature wildlife
- What are the Health and Safety standards on site?
- Maize is the present fuel, would villages be able to comment if they switched to imported food waste
- Water supply from Tannis Court is from a private borehole, spreading slurry could have an effect on ground water that drains into River Rib
- Resident affected by the human excrement sprayed on the fields
- Air pollution from the gases would cause respiratory problems, the nutrient rich additive would cause an infestation of flies causing disease, the health hazard of the smell will lower the value of properties
- The plant is stated as being away from residential properties but some are 100m from the plant
- It will take 20 years to grow the screening landscaping for the plant.
- The nutrient rich additive would mean sewage or animal slurry
- Will the waste overflow into Aspenden Brook
- There is little smell from the end product but the smell from the tanks will produce a dreadful odour so we cannot open our windows, should be resited away from houses
- The wind blowing from the east will create an unpleasant odour from the plant
- Hydrogen sulphide will add to the current smells from the farm

Noise

- Noise from the plant will be continuous and intrusive
- Noise from the plant will be 24 hour 7 days a week Continual noise from the exhaust stack, and no odour control systems installed which DEFRA suggest AD plants should employ
- The applicants were only a limited company 13 months ago. Mistakes could be made that are potentially disastrous; the acoustic report suggests complaints about noise are likely.

Renewable Energy

- Farmers should use environmentally friendly methods for producing electricity.
- Growing food crops to fire a power station is abhorrent
- This agricultural land will become an industrial brownfield site
- Adverse impact on the rural area from smell and noise pollution
- Should be growing our own food not using it to make energy, not environmentally friendly
- The needs to be more time to consider the proposal of a very complex and threatening power station
- If EIA unlikely to be needed should check with EIA, what reference is there to crop rotation, flooding issues or Hedgerow Regulations 1997
- East of England Plan withdrawn so target for energy from renewal sources not relevant
- The digester is a generator of greenhouse gases.
- This is a major industrial project near houses and lovely footpaths
- The development of a power station is not farming
- What issues are there in relation to animals and biodiversity, could there be rats
- The proposal is being pursued purely for commercial gain
- The electricity on this site could supply 2,000 homes
- Venture based on generous government subsidies
- Low efficiency converting 35% into power 65% lost as heat and CO2
Due to easterly wind smells will drift to Buntingford
- The pollution the site will emit will be hugely damaging to the environment contributing to global warming
- Maize is set to produce methane gas which is a greenhouse gas and explosive, increasing risk of fires and explosions

6.0 Policy

6.1 The relevant 'saved' Local Plan policies in this application include the following:-

SD3	Renewable Energy
GBC3	Rural Area beyond the Green Belt
GBC7	Agricultural Development
GBC8	Rural Diversification
GBC14	Landscape Character
ENV1	Design and Environmental Quality
ENV2	Landscaping
ENV11	Protection of existing Hedges and Trees
ENV21	Surface Water Drainage
ENV24	Noise Generating Development
LRC9	Public Rights of Way

6.2 In addition, the following National Policy guidance is relevant:-

Planning Policy Statement 22: Renewable Energy

7.0 Considerations

Principle of development

7.1 The proposal is for the construction of an Anaerobic Digestion Plant using maize feedstock crops as biomass. The plant comprising a digester tank; residue tank; technical building and maize silage clamp and hard standing would be constructed on the southern boundary of the site of Buttermilk Hall Farm.

7.2 The development would constitute the provision of a source of renewable energy for use within the farm site and as sell-back to the national grid wherein policy SD3: Renewable Energy production and policy GBC3: The Rural Area beyond the Green Belt would apply.

7.3 As regards the provisions of policy GBC3, the site is located within the 'Rural Area beyond the Green Belt' where the policy identifies forms of development that are considered to be appropriate, conserving and enhancing the character appearance and quality of the rural countryside. The site is designated as agricultural land of an open arable landscape with extensive views over an undulating plateau.

7.4 The proposal does not fall within one of the identified appropriate uses in GBC3. Although based on an agricultural product the process itself is not agriculture. It is therefore necessary to consider what special circumstances exist to justify a departure from Rural Area policy. The development is, however proposed in order to produce renewable energy and this, of course, is in accordance with policy SD3.

7.5 This is considered with particular emphasis on the provisions of policy SD3: Renewable Energy where the approach is that the proposal for renewable energy schemes will be assessed in terms of their energy generation potential, environmental impact and the effect on the local amenity.

7.6 In principle therefore, the Council supports proposals for the development of facilities for the provision of renewable energy under policy SD3 (I)

'The development of facilities for the harnessing of renewable energy sources is supported in principle. Particular emphasis will be placed on promoting energy generation from Biomass fuels and solar power both small scale and commercially'

'(a) In assessing proposals involving the use of biomass fuels particular regard will be paid to the impact on the local transport network, on nature conservation interests and on landscape and visual amenity. Such proposals should be accompanied by detailed information regarding the proposed raw materials (which should be locally sourced) and schemes to limit potential noise, small and safety concerns.'

7.7 Renewable energy proposed from agricultural products will inevitably be located in rural areas, so a location as part of an established farm complex makes sense and accords with policy GBC7.

7.8 The provision of energy from agricultural products also represents a valuable diversification of farming in accordance with policy GBC8.

7.9 This is further supported in PPS22 where it states that there are currently three basic categories of biomass Plant:

- Plant designed primarily for electricity production, which are generally larger on a commercial scale 10MW – 40MW where excess heat is not utilised.
- Plants designed for the production of heat only where the scale is of a few kilowatts to above 5 MW of thermal energy.

- Combined Heat and Power (CHP) plant, where the primary use is the production of electricity, but the excess heat is used productively as part of industrial / agricultural process heat reclamation or in a heating scheme. The range is usually 5 to 30MW

- 7.10 The proposal is for the production of renewable energy in the form of Anaerobic Digestion from energy crops as a CHP plant, in this case maize grown on the applicants land alongside other arable crops. The process takes the source energy crop (maize) from the land, stores this annual production in a silage clamp, then feeds this via a low loader to the technical building to be sent through a sealed underground automated conveyor system to the pre-mix tank and thence to the digestion tank where it produces biogas/ methane to be converted to electricity and heat, used locally, with any surplus electricity as 'sell-back' to the grid.
- 7.11 The production levels of the AD plant will be to achieve 35-38% of extracted energy to be converted back into electricity, with 30% of the available heat being used back in the process to maintain the digestion process at the optimal temperature of 38 degrees Celsius. A feasibility study is underway with the AD Plant providers to assess using a further 10-15% of produced heat in the farms fertiliser mixing operation where heat is required. Other uses will be assessed in the future.
- 7.12 The AD plant complies with the Governments 'sustainability policies' PPS22 and there is a significant amount of EU and UK legislation such as the EU Renewable Energy Directive 2008, the Climate Change Act 2008 including initiatives from Defra (AD Implementation Plan) and other government bodies to provide incentives such as the Renewable Heat Incentive (RHI 2011 to encourage the renewable heat from biogas installations and for the injection of Biogas to the gas grid. The project has approval under the Feed in Tariffs (FiTs) initiative introduced in April 2010, clean energy cash back scheme, to encourage small scale (less than 5Mw) renewable energy generation including AD, to encourage and support Anaerobic Digestion Plant projects in agricultural areas
- 7.13 The applicant indicates that the benefits are numerous. As well as producing biogas, the system is capable of capturing methane emissions. The end product digestate will provide organic fertiliser and soil conditioner for agricultural use thus being beneficial for the environment and cost effective when site/land use is limited.

Local Considerations/ Neighbour Amenity Issues

- 7.14 In terms of national policy PPS22, the proposal follows the guidance that most renewable energy resources can only be developed where the resource exists and where economically feasible. The site at Buttermilk Farm is centrally located to the proposed plant within agricultural land in the rural landscape ideally suited to the proposed project, remote from the urban areas.
- 7.15 The nearest residential properties are in an elevated position above the farm site to the north, facing the A507, and would be at least 161m from the AD plant located to the rear of the farm site, approximately 15-17m lower. Other properties further along the valley would be between 1,325m and 1,352m from the AD plant.
- 7.16 The distance to the village of Cottered is 1,765m and Aspenden 1,454m, while the town of Buntingford to the east of the farm site and the AD plant is some 1,458m. The topography of the site situated on a lower level screened by trees will also have an affect on the issues that are to be considered.

Landscape and Visual Effects

- 7.17 PPS22 Para 19 makes reference to the need to address the impact of such development on the surrounding landscape and its visual impact on the locality minimising the effects of any buildings or structures by appropriate siting, design, colour finish and landscaping schemes.
- 7.18 Policy ENV1 applies in terms of requiring a high level of design and layout, demonstrating compatibility with the structures and layout of the surrounding area. Where new development should relate well to the massing and height of adjacent buildings. Proposals should respect the amenity of occupiers of neighbouring buildings and ensure that their environments are not harmed by noise and disturbance. Officers consider that this proposal accords with that policy.
- 7.19 Under Policy ENV2 development proposals will be expected to retain and enhance existing landscape features and, where losses are unavoidable, compensatory planting or habitat creation may be sought.
- 7.20 Policy GBC14 also requires development to improve and conserve the local landscape character with reference to the Council's Landscape Character Assessment SPD. Proposals should contribute to the existing landscape character, enhancing or creating landscape features while conserving key characteristics and distinctive features as identified in the relevant

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Landscape Character Assessment. In this case, while additional landscaping will be required by condition, Officers consider that the visual impact on the surrounding area would be an acceptable one.

- 7.21 The two proposed tanks painted would be painted green/grey as would the brick built single storey technical building. They would be sited at the southern boundary of the farm complex in a natural depression in the land between two arable fields, a significant distance as demonstrated from residential properties(161-328m) or conurbations(1,458m-1,765m). The established hedgerow and mature copse of trees surrounding the dell with other established tree and hedge field boundaries, are largely to be retained and enhanced such that the plant buildings will be mostly hidden from views, both from the public highway to the north or the long distance views from open countryside / arable fields to the south and RUPP 10.
- 7.22 The digester tank and residue tank have been set into the lower ground area such that 5m of the digester tanks will appear above the surrounding land. The nearest grain store portal barns in the middle of the site have a height of 10-12 m, and will remain the highest structures on the site. The gas flare will be 5.5m in height located next to the residue tank. The office unit at 3.5m in height would not impinge into the landscape and is sited closed to the mature landscape boundary.
- 7.23 Effectively, views into the site from the north south and west would show the plant buildings integrated into the site topography and landscape with reduced ground levels. The most prominent structures on the site would remain the existing portal grain store barns situated in the middle of the farm complex. The proposed structures would be satisfactorily “ clustered” around these existing buildings.
- 7.24 The storage clamp proposed is a common feature of agricultural farm complexes commonly used to store feedstock such as silage / turnips for cattle. The proposed clamp, with concrete end bays and storage floor is situated closer to the technical building of the AD plant on the other side of the field boundary taking advantage of the lie of the land and the slope into the dell to minimise its impact on the surrounding countryside. The silage clamp would be filled once a year following the cropping of the maize covered with black plastic with the energy crop removed weekly to feed the AD plant.
- 7.25 The siting of the clamp provides a more direct access from the stored maize clamp directly through a hedge row opening as the AD plant is based on the continuous feed system. There is little management of the unit, most of the elements functioning automatically when the hopper that feeds the underground conveyor in the technical building has been filled.

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- 7.26 The buildings would be painted to assimilate them into the surrounding rural landscape. A landscaping scheme of native indigenous planting species has been submitted to screen the clamp and provide additional enhancement to the boundaries along the western perimeter of the site.
- 7.27 However it is considered that a more robust planting scheme will be necessary with the introduction of more established and mature trees to provide a speedy screening provision. Immature trees and shrubs would need a long lead in time to establish significant buffers around the site as enhancement to the existing landscaping.
- 7.28 The Council's SPD Landscape Character Assessment clearly indicates the form and opportunities for landscape area enhancement in this locality, designated Area 141: Cherry Green Arable Plateau. In this instance the submitted landscaping scheme is reasonable but a more rural landscaping scheme would be required to enhance the locality around these structures. The number and species of plants/trees, varieties and the width of buffer planting/ hedgerows on the western boundary could be improved upon. It is Officer's opinion that this could be satisfactorily achieved by the addition of an appropriately worded condition.
- 7.29 It is also considered appropriate to include a further condition regarding the outstanding landscaping, hedge planting to the bunds and field boundaries along two areas of verge/ banking/bund some 283m long either side of the entrance to the Buttermilk Hall Farm site for a new access similar to that granted approval in 2002 under ref: 3/02/1615/FP.

Footpaths

- 7.30 A RUPP (route used as a public path) runs east of the site, some 135m from the existing field boundary and the site of the proposed silage /maize clamp. The development would be largely unseen from this route due to the lie of the land, sloping away from view. What little views are apparent at a distance would be of limited impact as the silage clamp is shallow in depth and will be screened by additional landscaping. Most silage clamps are accepted as a common feature of most working arable farm sites.
- 7.31 There would be no significant impact on the public's use of the RUPP and the screening proposed in the form of an enclosing extended hedgerow around the boundaries of the clamp would add landscape interest, in keeping with the surrounding arable land character.

Traffic Movements

- 7.32 Biomass, Biogas projects need fundamentally to transport crops/ source material to the energy production plant which has the potential to lead to increases in traffic. The effects of such increases on the local network should ensure that the renewable energy generating plants are located in a position as close as possible to the sources of fuel identified. In this instance the AD plant is within the farm complex, surrounded by the arable fields that will supply the energy crop.
- 7.33 There is no proposed importation from other sources and the maize would be taken from existing fields in arable rotation. The maize is harvested once a year in bulk and moved to the farm complex and stored. It is accepted that different crops yield a different mass in terms of the number of movements from field to farm. If the maize were grown for other purposes, of course, the crop could be exported from the site and sold to other suppliers as grain or feedstock which would normally generate additional lorry movements. However as the maize is retained on site for the AD plant this would lead to a reduction in overall traffic movements.
- 7.34 External traffic movements due to the proximity of the site to the energy crop would therefore be limited, being localised traffic from adjacent fields to the silage clamp at one specific period in the year when the maize is cut. This would form the normal activities of a harvest period for an arable crop. The maize is grown on local fields and there would be no other imported crops, or long distance traffic movements.
- 7.35 Highways were initially concerned about the possible increase in traffic movements from the site and the impact on local highways. The applicant's have provided a Transport Statement detailing existing and projected traffic movements on site. When the AD Plant is operating it will actually reduce traffic associated with the farm by some 1,294 movements per annum. As such Highways have removed their objection and added conditions to address construction parking and the completion of the outstanding S278 agreement for highways works to the access / entrance on to the highway A507 prior to commencement of any part of the proposed AD Plant development.
- 7.36 The by-products of the AD plant, digestate fertiliser, heat and power would all be used on-site or on the land in the ownership of Scott and Scott in accordance with planning policies, both local and national.

7.37 There are no waste transfer implications for the project as the maize is only grown and supplied from farm land in the ownership/ control of the applicant.

Noise

7.38 Under the consideration of noise in the technical annex of PPS22, Para 22 Renewable technologies may generate increases in the ambient noise level in the locality of the plant either from the machinery involved or from traffic movements generated. The guidance indicates therefore that plant should be located in a position and designed in such a way as to minimise increases in ambient noise, ensuring that there are adequate distance separations to existing residential areas.

7.39 The proposed site of the AD plant in this case is a significant distance (161m-328m) from the nearest residential properties to the north of the farm complex such that in concert with the ambient area noise of traffic on the A507, other general noise generating activities of farm vehicles and farm activities, it is unlikely that residents will be unduly affected. The Environmental Health Officer has raised no objection on noise grounds.

7.40 The Environmental Noise Assessment carried out as regards the building construction and functioning noise levels clearly identifies the steps taken to mitigate for any noise nuisance. The internal CHP room would generate 117dB (A) but located within a sound proof cabin in the technical building, this is reduced to 73-76dB(A) at 1m from the sound cabin within the technical building. The air management supplying and removing air from the CHP room is equipped with sound absorbers which generate between 54dB (A) and 59dB(A).

7.41 The exhaust air is discharged through the exhaust stack positioned outside, at a height of 4m above the apex of the technical building, fitted with a muffler to reduce noise emissions to 65db(A) at a distance of 10m.

7.42 The noise assessment recorded the lowest ambient background noise from the outside rear garden of Buttermilk Grange over a 24 hour period. The tables showed that in the NSR m (Noise Sensitive Recorders) positioned 190m from the proposed site of the AD plant using the facility model brief, noise levels would be within acceptable British Standards except in relation to the Cooling System and the Exhaust Stack where the rating is '*complaints are likely*' at +10dB over ambient levels. The conclusions of the report show however, that the Cooling System would be screened by

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the technical building and as such this would reduce the noise differential to +5dB(A) over ambient which is considered to be '*of marginal significance*' and generally acceptable.

7.43 The report indicates that the Exhaust Stack in itself could create a situation where '*complaints are likely*'. However, the recommendation is that Stack attenuators- splitter attenuators are fitted in the stack and a terminal Cowl fitted on the top of the stack directing noise emissions away. Based upon the standard assessment method this would reduce the noise level at the NSR's to '*marginal significance*' or '*complaints unlikely*' which meets BS 4142.

7.44 As such a suitably worded condition would be attached to require these mitigating noise attenuation fittings are installed.

Odour

7.45 Likewise, some AD plant projects have potential impacts of odour and as such the siting of the AD plant should not be located in close proximity to existing residential areas. The proposed plant would be sited well away from the village conurbations of Cottered and Aspenden in the arable farming area of Buttermilk Hall Farm with limited residential properties, the nearest located at distances of 161-328m from the proposed site of the AD plant.

7.46 Odour can occur from various elements of the digestate process these are addressed separately and in some detail in the proposal and summarized below as a response to the breadth of objections from members of the public on this issue.

- Silage Clamp: The maize silage is stored in a clamp which is covered with plastic and weighted down to exclude excess air to reduce degradation so odour is contained, the material is dry until put into the hopper so liquid leachate is not produced.
- Mixing Tank: The supply of materials into the mixing tank is automatic, made up of silage water and re-circulated material from the digester. A small amount of odour is produced, but the process is carried out in the mixing room and therefore contained within the Technical Building.

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- **Digester:** Emissions are contained by virtue of the fact that the digester unit is sealed and airtight as part of the process of anaerobic digestion and biogas production. The biogas is de-watered in a condensate system and kept within a sealed pipe network, emissions are therefore contained in the system.
- **Storage Tank:** Residue from the fermentation process is stored in this tank to a 6600 cubic metres of capacity. The tank is covered with a fabric reinforced awning, with a pressure balance regulator, via vent openings in the roof. The exhausted substrate /digestate is almost odourless due to the sealed process of the earlier fermentation which has extracted all the methane.
- **Gas Utilisation:** Exhaust emissions from CHP are limited because the engine size is less than 3MW thermal input capacity and does not fall under the Environment Agency's Environment Permitting Regulations.
- **General Emissions:** are considered to be significantly less than other Biogas production due to the sealed air tight process/containment of the odorous materials and the very obvious fact that no waste is being used.

A large proportion of existing AD plants process food waste, cattle slurry and other general wastes that are already noxious.

- 7.47 The biogas produced does contain Hydrogen Sulphide, but the technology outlined cleans this from the gas prior to going to the engine. Oxygen is added into the dome of the digester so the sulphur fixing bacteria converts to sulphur and water dropping back into the digestate. The applicant indicates that there are therefore no odours associated with Hydrogen Sulphide.
- 7.48 The additive added to the digestate tank to initiate fermentation is likely to be natural bacteria slurry, but is a one off pump priming addition which contains live bacteria to start the fermentation process. As the digester is a sealed air tight container, the applicant indicates there will be no smells or odour.
- 7.49 The nutrient rich additive 'Miavit' designed to increase the efficiency of the digestion process is a dry bagged compound that is added annually to the system. The compound will be stored on pallets inside the Technical Building. There are no odour issues associated with this product as it is added in the Technical Building in the sealed mixing room

8.0 Conclusion

8.1 The proposed renewable energy plant is not one of the categories of development identified as appropriate within the Rural Area under policy GBC3. It is therefore necessary to consider whether there are any other material planning considerations in this case that would justify a departure from this policy. Such considerations are identified as follows:-

- Policy SD3 of the Local Plan and national guidance in PPS22 support renewable energy and logically for an agricultural resource the plant should be located close to the source product.
- Renewable energy is agriculturally related and supports farm diversification
- The buildings, plant and hardstanding are of an appearance and character similar to agricultural farm buildings and will be sited next to an existing farm complex in accordance with the objectives of local plan policies.
- The development can be satisfactorily integrated into the landscape and results in no undue harm to the rural character of the area and public views
- There is no harm to neighbour amenity, the environment or the use of the highway.

8.2 All these considerations provide justification in the Officers view for the development, notwithstanding the provisions of Rural Area policy. On balance therefore taking all the issues into consideration the proposed Biogas Plant would not be detrimental to or detract from the rural landscape character of the area, the amenity of the locality, or highway infrastructure. The functioning of the site would not have a significantly adverse impact in terms of noise and odour on the surrounding locality or neighbouring villages and residential properties therein and would deliver facilities for renewable energy supporting the provisions of Policy SD3 and national planning guidance PPS22.

8.4 There are further details required in relation to additional landscaping, noise attenuation measures for the exhaust stack, and the implementation of the previous S278 highway works but it is the Officer's view that these details can be covered by the imposition of appropriate conditions and would not justify a reason for refusal.

8.5 Having regard to the above mentioned considerations it is recommended therefore that planning permission is approved subject to the conditions at the head of the report.

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