Item No 2(b)

Planning Committee

24 July 2008

Applications to be determined by the County Council

Report of Rod Lugg, Head of Environment and Planning

Purpose of the report: To enable the Committee to determine applications for planning permission which have been received in accordance with the requirements of the Town and Country Planning Act 1990.

City of Durham District: Proposed facility for the anaerobic digestion of agricultural manure, agricultural crops and potato waste to produce energy for the National Grid and nutrient rich organic crop fertiliser on land at Quarrington Farm, Old Quarrington for Johnson Brothers

Introduction

1 Planning permission is sought for a series of buildings to treat agricultural and food waste via the anaerobic digestion process (biological degradation of organic waste without oxygen) on land at Quarrington Farm, Old Quarrington. Treatment of the waste would result in the production of electricity that would be supplied to the National Grid and organic crop fertiliser would be applied to farm land in the applicant's ownership.

Planning History

2 Several planning applications have been submitted to the County Council and Durham City Council in recent years involving land belonging to Quarrington Farm. Planning applications by the Eco Energy Group for the extraction of coal by opencast methods with stabilisation of land for the new A181 Bowburn to Wheatley Hill by pass and restoration to agriculture, major conservation and mixed use development were refused by the Planning Committee in January 2002. The applicant's appeal to the Secretary of State was dismissed following a public inquiry in May/June 2003. This decision was challenged in the High Court (May 2004) and then the Court of Appeal (November 2004) but these appeals were both dismissed.

3 Planning applications by the Eco Energy Group for the erection of two wind turbines, ancillary sub-station and wind monitoring mast for the production of renewable energy were refused by Durham City Council's Planning Committee in November 2002. A subsequent appeal to the Secretary of State was dismissed in November 2004 on grounds related to the impact on the open character of the area and unacceptable harm to the outlook and amenity of nearby residential properties.

4 An outline planning application by Johnson Brothers for the erection for an agricultural workers dwelling immediately to the north east of the farm was refused by the City Council in June 2004. However, outline planning permission was granted on appeal by the Secretary of State in May 2005. Three subsequent 'reserved matters' applications relating to this development were then refused by the City Council before this matter was finally resolved when the final application was granted approval on appeal in June 2008.

Proposal

5 The proposal involves the erection of a series of buildings and storage tanks on 0.9 hectares of agricultural land to the north west of Quarrington Farm and Old Quarrington and adjacent to the Quarrington Quarry access road (see attached plan). These include a pitched roof feedstore

reception building (30m (length) x 14m (width) x 11.5m (height)) and 3 no. underground tanks positioned to the north east of the site. Two 23m diameter digester tanks (combined volume of 4,320m^3) would be located to the west of the site and two 32m diameter digestate storage tanks would be positioned adjacent to these. The tanks would have matching conical roofs and a maximum height of 11.5m. Buildings and tanks would have a profile aluminium finish and would be coloured dark green. A central machine room accommodating the pump controls would be located between the digester tanks and a small electricity sub station (6m^2 floor area) would be positioned to the west of the feedstore reception building, this would house a combined heat and power unit to generate electricity for the national grid.

The Process

6 Potato waste from a food processing facility and agricultural crops and manure from the applicant's farms in Durham (3) and North Yorkshire (1) would be delivered to the digester by the applicant's vehicles and deposited in the feedstore reception building. Solid materials would be directly tipped into an underground tank beneath the building and liquid potato waste would be discharged into a separate liquid tank via a pipe. Water would be extracted from the solid materials whilst in the tank and recycled into the liquid tank. The contents of the liquid tank would then be mixed with that of the solids tank in order to liquefy solid materials to a state in which they can be pumped.

7 The resultant material would be pumped into the digester tanks, where the degradation of materials by bacteria would occur. The resultant fertiliser product would then be pumped to the digestate storage tanks where it would be retained for up to 8 months. Methane gas would be produced from all 4 tanks as a result of the digestion process and would be transferred via a pipe to the combined heat and power unit. The gas would then be passed through an internal combustion engine driven generator to produce electricity. This process would also produce heat, although this would not be used as part of the current proposal. However the applicant is considering potential future uses for it.

8 The anaerobic digestion process is biologically sensitive and only a limited amount of material (1.14 tonnes per hour), can be added to the digester tanks without the process failing. A throughput of approximately 10,000 tonnes of material per year is expected. Daily throughput would involve approximately 19 tonnes of agricultural crops, 5.5 tonnes of farmyard cattle manure and 2.7 tonnes of potato waste. The process would result in the production of 8,000 tonnes of organic fertiliser and a constant supply of 500kw of electricity for the National Grid.

9 Waste would be received at the site from 8am to 5pm Monday to Friday and from 8am to 12 noon on Saturdays. The anaerobic digestion process would be operational 24 hours per day and it is anticipated that maintenance works would be required for approximately 1 hour per day. 3 no. new jobs would be created as a result of the development.

Vehicle Movements

10 Vehicle access to the site would be taken from the adjacent quarry road to the north of the site and space would be provided within the development for the parking and turning of vehicles. It is estimated that 3 no. HGVs would visit the site per month to deliver potato waste to the facility and 4 no. vehicles per week to deliver agricultural crops. A further 4 vehicles per week would be required to transport the end product organic crop fertiliser to the applicant's farms. Manure delivered to the site would come from the existing farm.

Consultations and Representations

11 City of Durham District Council objects to the proposal on the grounds that it would have an unreasonable impact upon the character and appearance of this part of the countryside by virtue of the scale of the proposed buildings and situation of the facility. Furthermore the facility would be relatively isolated from the main farm complex and would not relate to existing structures, which would emphasize its prominence.

12 Cassop-Cum-Quarrington Parish Council (consulted 16 April 2008) has not commented.

13 The Environment Agency has no objections in principle to the proposed scheme, however comments that the anaerobic digestion process and associated combustion to provide energy will require careful consideration. It is likely to require a bespoke environmental permit with full risk assessment including air quality dispersion modelling from the gas engine. It is also stated that careful consideration should be given to the impact upon local amenity as pilot plants in the UK have not easily controlled odour emission especially from waste storage. The location of dwellings in relation to wind direction is also of important in these considerations.

14 Natural England has no comment to make on the application regarding protected species, landscape and recreation issues and notes that the proposal does not appear to raise any significant agricultural soil resource protection or associated reclamation considerations.

15 The application has been advertised on site, in the press and neighbouring residents notified. 8 letters of objection have been received, including those from the Bowburn and Parkhill Community Partnership, Old Quarrington Association, Durham Branch of the Campaign to Protect Rural England (CPRE) and STR3ETS (a local residents group in Bowburn). These raise the following issues:

- The proposal would not accord with Policy W44 of the County Durham Waste Local Plan, as it represents development on agricultural land in open countryside involving the creation of new buildings and areas of hard standing and does not meet the criteria detailed in this policy. The proposal would therefore represent a departure from the Local Plan.

- Other recycling facilities already exist in close proximity to the site, at Tursdale, Hepplewhite's Quarry and Coxhoe Quarry and there is sufficient provision for recycling in the area. Further development of this nature would have an unacceptable cumulative effect
- Concern over noise and smell generated from the proposed development. Whilst prevailing winds predominantly blow away from residential properties, northern and easterly winds would blow odours towards residential properties. Noise from the electrical generator would be constant and may cause disturbance at night when not masked by background noise. The applicant has not provided details of predicted noise levels.
- Untreated water, polluted by carbon dioxide, sulphur and other substances, may be discharged into the ditch adjacent to the quarry access road which would in turn flow in to Bowburn Beck.
- The use of methane to run the generator would require a blow off valve for excessive methane pressure, this is usually in the form of a flare and has not been referred to in the planning application.
- Diesel fumes from the generator could create fog or a plume over the site in certain climatic conditions.
- The proposed design is on an industrial scale, more discreet designs are available that would not be as visible from the surrounding area. The proposal may set a precedent for further industrial development in the vicinity.
- The process would involve the use of full agricultural crops which would result in the loss of approximately 600 acres of crops from the food chain. On its own this would not represent a significant problem but may set a precedent for similar developments in the future.
- 8,000 tonnes of fertiliser would be produced from the process to treat 300 acres of the applicant's land; this is excessive and may lead to over fertilisation, which could potentially lead to water pollution.
- The application is misleading in terms of vehicle movements.
- Proposed screening is insufficient and the development would be highly visible from the adjacent bridleway.
- The route of proposed underground cables is not shown within the planning application, if these were to be laid underneath land owned by the Highways Agency this may have an impact upon local traffic.
- The proposal would lead to a significant amount of additional local traffic.
- Assurance is required that the proposed tanks would be permanently covered throughout the process.
- Harvesting of crops for the process would be over a greater period than conventional harvesting, this may have an adverse effect upon nesting birds in the vicinity of the farm as a result of increased activity.

Comment: I have written to some of the objectors to clarify factual points where appropriate. The relevant planning issues are addressed in the planning comment section below. In terms of the concerns regarding possible contamination of the local water supply, the Environment Agency has no objections to the proposal. Any future planning applications for similar developments would be assessed on their own merits and it is not considered that this proposal would set a precedent in this respect. Concerns regarding the process and after use of the fertiliser would be addressed through the environmental permit.

16 A letter in support of the application has been received from Friends of the Earth East of England Regional Campaigns Co-ordinator who considers that the application is a good example of energy production from a renewable source and would contribute towards carbon emissions reduction targets. It is also believed that the development establishes a model for farm diversification and sustainable rural economic development. Reference is made to Government Guidance and the UK's strategy to cut carbon emissions and tackle climate change. 'Planning and Climate Change' the supplement to Planning Policy Statement (PPS)1 and PPS 22 'Renewable Energy' are quoted in particular in support of national initiatives.

Planning Comment

Planning Policy

17 National policy for the management of waste is contained in DEFRA's Waste Strategy for England 2007 which is generally supportive of anaerobic digestion and the generation of energy from waste, particularly within farming where it can be used to manage manure and recognises the benefits of digestate produced from the process.

18 PPS 10: Planning for Sustainable Waste Management, issued in July 2005 reaffirms the need for a step-change in the way waste is handled and significant new investment in waste management facilities. PPS 10 states that development control decisions for waste management facilities should have regard to amenity and environmental impacts of developments.

19 PPS 1: Delivering Sustainable Development and its supplement Planning and Climate Change provide advice on measures to reduce carbon emissions and encourage the generation of energy from renewable sources in appropriate locations as a key delivery mechanism.

20 A key principle of PPS 22 Renewable Energy is that renewable energy development should be capable of being accommodated in locations where the technology is viable and environmental, economic and social impacts can be addressed satisfactorily.

21 The emerging North East Regional Spatial Strategy provides a regional planning policy framework. Policy 2 sets out provision for mitigating and adapting to the impacts of climate change. Policy 46 refers specifically to sustainable waste management and seeks to establish a hierarchy to minimise and treat waste, including re-use, recycling and energy to waste initiatives. Policy 40 relates to renewable energy generation and provides targets for the percentage of future energy that should be produced from renewable sources.

22 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that the determination of planning applications should be made in accordance with the Development Plan unless material considerations indicate otherwise. Relevant policies are contained in the County Durham Waste Local Plan (April 2005) [WLP] and the City of Durham District Local Plan [DLP] (May 2004).

23 WLP Policy W44 sets out location criteria for small-scale aerobic and anaerobic digestion plants, and permits such development on a) general industrial land or previously developed land, b) where the processing of waste is appropriate in scale to an existing primary use of the site or c) where it involves the re-use of appropriate rural buildings and hard standings as part of farm diversification.

24 WLP Policy W45 sets out the criteria for the development of energy from waste and Policies W2 relating to need, W33 environmental protection, W6 and W7 landscape and visual impact and W31 highways matters are also relevant. DLP Policy E7 provides guidance on the types and nature of development likely to be appropriate in the countryside and EMP17 sets out criteria for development involving farm diversification.

Detailed Considerations

25 Whilst the policy framework is generally supportive of sustainable waste management development including anaerobic digestion plants and energy from waste schemes, these need to be appropriate to their surroundings in terms of nature, scale and location. The proposal would involve a form of farm diversification that is closely linked to agricultural activity and the use of crops and farm and food wastes to produce electricity and fertiliser would have renewable energy and waste recycling and re-use benefits.

26 However, the facility is intended to deal with materials produced on and off the site and much of this would come from other farms in and around the region owned by the applicant supplemented by food processing waste generated elsewhere. Notwithstanding the operational and economic justifications for a centralised facility and the fact that the quantities of waste treated per year would be relatively small there is no compelling planning reason why a process of this kind needs to be carried out in this location rather than on sites that have in principle been identified for such uses including industrial and previously developed land or existing farm complexes. In so far as the proposal would primarily cater for imported materials rather than those

generated on site and is relatively remote in terms of the location of farm and position of the plant to the farm complex, it would represent a departure from Policy 44 of the WLP.

Residential Amenity

27 One of the main reasons for siting the proposed facility in the position indicated is to reduce the potential impacts of the development on the residents of Old Quarrington. The farm lies at the top of the village and is accessed through here on the unclassified road that ends at the farm. The application site lies to the north of Old Quarrington and the closest existing properties to the proposed digester would be Forge Farm and Forge Farm Cottage which lie approximately 220m to the south (although an agricultural workers dwelling for which planning consent has recently been granted would be the closer if and when constructed). Other residential properties in the village lie further south approximately 240m away from the site and this distance progressively increases for properties towards Heugh Hall Row.

28 The proposed scheme has been designed so that the main noise emitting element, the combined heat and power (CHP) unit, would be positioned on the side of the site furthest from residential properties in a specially designed acoustic container. Although the CHP unit would be operational 24 hours per day and would generate a low level of noise, this is not expected to involve an increase in ambient noise levels or create disturbance even at night when conditions are quieter.

29 Vehicle movements associated with the scheme would also generate some noise as do those accessing Quarrington Quarry but these would be limited in number and restricted to the hours of 8am-5pm Monday to Friday and 8am-12 noon on Saturdays, and would not pass through Old Quarrington to reach the facility.

30 The field crops and potato waste imported to the site are largely odourless, and the small quantities of manure used in the process are not expected to emit a significant smell. The materials would be deposited into underground tanks on arrival before being fed into the digester and the scheme is designed to capture methane produced as a result of the process to generate electricity. It would include a gas collection cover to prevent methane from escaping. According to the applicant the nutrient rich crop fertiliser produced at the end of the process would have less odour than the manure that is currently spread on land in its original state and would be piped from the digestate storage tanks into sealed tankers before leaving the site. In general the proposal is not expected to generate an odour problem and despite some reservations Durham City Council's Environmental Health Officer concurs with this view.

Landscaping and Visual Impacts

31 The plant would be set in the open countryside bisected by the quarry access road that rises up to the ridge of the magnesian limestone escarpment. The land is mainly in use as permanent pasture and the field system has an established field pattern with boundary lines formed from a mix of fencing and hedging. The proposed plant would be a discrete, standalone facility covering 0.9 hectares of land in total that is set away from the farm and village.

32 There is an existing hedge running along the western edge of the application site and it is intended to supplement this with additional planting to help integrate the plant with its surroundings. A belt of evergreen trees would be planted along the field boundary to the south west of the site, together with a section of hedge to the east of the main farm complex to the north of bridleway 35 and 2 no. mature trees and a section of hedge of at least 2.5m in height to the west of the main farm complex within Old Quarrington village.

33 Notwithstanding these steps which would take some time to fully establish, the facility would have a semi industrial character and appear isolated and incongruous in the landscape. Although the digester would be visible in some longer distance views it would be partially screened by the folds and dips in the rising land. The main impacts would be seen in shorter distance views around the site including dwellings within Old Quarrington and along Heugh Hall Road and from the 2 no. public rights of way to the west of the site. Despite the green colour of the units and planting the proposal would be out of character and intrusive in this location.

Traffic and Access

34 Vehicle movements associated with the site are relatively small in number (approximately 20 in and out per week) and would partly displace some existing movements on the farm linked to crop harvesting. The facility would be accessed using the quarry road to the north of the site and would not pass through Old Quarrington village. This has a direct link to the new A688 Wheatley Hill to Bowburn Road that is nearing completion. The proposal is therefore not expected to generate a significant amount of additional traffic or adversely affect local road conditions. The Head of Highway Management has no objections to the proposal.

35 Precise details of how the facility would be accessed from the adjacent quarry road have not been provided and there is a relatively steep change in levels between the quarry road and the site. However these are matters that can normally be covered by a planning condition.

Ecology

36 Quarrington Hill and Coxhoe Bank Plantation County Wildlife Site lies approximately 280m away to the south east of the site and Cassop

Vale SSSI lies approximately 500m to the north. Given the distance between the site and these designated areas the proposal is unlikely to have an adverse impact upon ecology in the area. The County Council's Ecologist has confirmed there are no ecological issues to comment upon in connection with the scheme.

Conclusion

37 Planning policy is generally supportive towards sustainable waste management initiatives and seeks to make provision for small scale anaerobic digestion facilities as part of farm diversification, where proposals would make use of existing farm buildings or hardstandings and process waste by products.

38 Whilst the proposal would have some environmental benefits in terms of electricity production and soil improvements, the plant would be located on open, agricultural land, set away from the other farm buildings and would largely process imported crops and other waste materials generated off site. Although it would not be particularly prominent in distance views the scale, height, appearance and character of the structures are such that despite some screening, the proposal would have an adverse visual impact on the local rural landscape.

Recommendation and Reasons

39 Planning legislation requires that planning applications should be determined in accordance with the Development Plan unless material considerations indicate otherwise. Having weighed the potential benefits and disbenefits of the scheme it is considered that there is no overriding reason to depart from planning policies in this case. I therefore **recommend** that planning permission be refused for the proposed anaerobic digestion plant for the following reasons:

i) The proposal would represent a departure from the development plan as it involves the provision of an anaerobic digestion facility that would largely involve the treatment of imported materials, is not in scale with the existing primary use of the site or well related to the existing farm complex. The proposal would therefore not accord with WLP Policy W44.

ii) The proposal by virtue of the size, siting and appearance of the plant would be an incongruous and discordant feature in the landscape detrimental to the character and appearance of the surrounding area and contrary to Policies W6, W7 and W33 of the WLP.

Departure

Background Papers: Application, consultations and responses, site location plans.

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Local Members:	**Councillors Morgan and Plews**	

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