

20 September 2016**Agenda Item:****REPORT OF CORPORATE DIRECTOR – PLACE****NEWARK AND SHERWOOD DISTRICT REF. NO.: 3/16/00876/CMA****PROPOSAL: CONSTRUCTION OF A DIGESTATE STORAGE LAGOON FOR AN
ANAEROBIC DIGESTION PLANT****LOCATION: STUD FARM, RUFFORD****APPLICANT: RAINWORTH ENERGY LTD****Purpose of Report**

1. To consider a planning application for the excavation and construction of a lagoon to store liquid digestate produced by a new Anaerobic Digestion plant on adjacent land at Stud Farm, Rufford. The key issues relate to the need to protect ground water resources from pollution; odour management; and heritage impacts with respect to the site lying within a Registered Historic Park and Garden and within the setting of a nearby Listed Building. The recommendation is to grant planning permission subject to conditions.

The Site and Surroundings

2. Stud Farm is a predominantly arable farm situated between the villages of Rufford and Bilsthorpe. The farm lies to the north of Eakring Road and is shown on the accompanying Plan 1. The area is characterised by rolling arable farmland, and belts of woodland interspersed with occasional farm buildings, solar farms and wind turbines.
3. A belt of woodland, 'Long Belt', running east-west divides the landholding. A solar farm is situated on part of the southern farm-holding alongside the farm access road to Eakring Road. On the north side of Long Belt is a large commercial poultry unit (Noble Foods). Immediately adjacent to the west of Noble Foods is a new anaerobic digestion (AD) plant which was granted planning permission by this Authority and construction is nearing completion. Access for both Noble Foods and the AD plant is via a separate and dedicated access road running south to Eakring Road. The surrounding land is in intensive agricultural use. The northern area also forms part of the Rufford Registered Park and Garden as historically the area would have formed part of the Rufford estate deer park. Rufford Abbey itself lies approximately 1.7km to the north-west. A Grade II Listed Building - Rufford Park Lodge is situated 260m to the west on the edge of the Long Belt woodland. This property has three residential units including a holiday let. A further residential property lies immediately adjacent to the south of the AD plant and is understood to be occupied by a

farm manager. Other residential properties are remote to the site and situated on outlying farms. These details are shown further on Plan 2.

4. The footprint of land subject to the proposed lagoon is currently part of an arable field adjacent to Long Belt wood and to the west of the new AD plant. An area of about 1 hectare is required for the lagoon. The site is underlain by a Secondary Aquifer and is also within a Source Protection Zone for a local water borehole. The Birklands and Bilhaugh Special Area of Conservation (SAC) lies approximately 4.8km to the north-north-west of the application site.

Planning History

5. Planning permission was originally granted in 2010 (Ref: 3/09/01455/CMA) for the construction of an AD Plant, including associated buildings and structures, a silage clamp, and a new access road to Eakring Road to be shared with Noble Foods. The AD facility was designed to manage around 26,000 tonnes per annum (tpa) of feedstock comprising poultry manure from the adjoining Noble Foods site, vegetable crops unsuitable for sale and locally grown energy crops. This application also originally sought permission for a lagoon situated on a separate part of the farm, to the north of Park Lodge, to store the liquid digestate produced from the AD process until it can be applied as fertiliser to the land. However this element was subsequently withdrawn due to unresolved concerns about odour and a separate application was submitted (under Ref 3/10/00663/CMA) to construct a storage tank for holding the liquid digestate. These two applications were considered and approved by Committee in July 2010.
6. The approved tank measured 44 M in diameter and eight metres tall and was to be sited on land to the south-west of the main AD plant site. This planning permission was subsequently renewed in October 2013 for a further three years (under reference 3/13/00983/CMA) and expires on the 8th October 2016.
7. The planning permission for the AD plant was technically implemented by the construction of the access road, however the AD Plant was not progressed at that time, but consent for it nevertheless remained. In the past couple of years the project has been revived and amendments to the original scheme have been tabled and approved. Such changes reflect changes to technology and equipment over time. The most recent changes were dealt with through a recent planning committee approval to increase the height of the approved digester tanks by fitting flexible domes to the top of the tanks to hold the biogas. This application (Ref 3/15/02255/CMA) was considered by Members at the February 2016 meeting and approved subject to the applicant completing a Section 106 Agreement to ensure the long term protection of the adjacent Long Belt wood as an important screening feature. The legal agreement was completed in May and the formal permission issued on 8th June.
8. At the February committee meeting Members also considered a separate, but linked application (Ref 3/16/00115/CMA) for a 2.6km pipeline to enable the export of gas from the AD plant to the Center Parcs holiday village. This was approved subject to conditions relating to archaeological mitigation and measures to protect trees along the route. Work on this is currently progressing.

9. A further planning application is considered elsewhere in these committee papers seeking permission for a Combined Heat and Power (CHP) plant at the Center Parcs end of the pipeline which would use the biogas to generate both electricity and heat for the holiday complex.

Proposed Development

10. The operator of the new AD plant and the farm requires a suitable storage solution to hold the liquid digestate which is a product of the AD process and a valuable bio-fertiliser. AD plants work by breaking down organic waste using biological processes within a sealed, anaerobic (in the absence of oxygen) environment. This produces a bio-gas which can be used to produce electricity and heat, but also results in creation of a residual digestate which can be applied to farm crops as a natural fertilizer. As the farm is located within a Nitrate Vulnerable Zone (NVZ) there are controls on the volume and timing of when the fertiliser can be applied so to limit run-off to local watercourses or ground waters.
11. Previously permission was granted for an above-ground storage tank for the same purpose. The applicant no longer wishes to develop this and instead seeks permission to create a large storage lagoon. In justifying this the applicant states that the lagoon's lower cost is one factor but also that the lagoon would have a much reduced visual and landscape impact as it would predominantly be sunk into the ground.
12. The lagoon would be excavated (from the adjacent field) to a depth of between 4 and 5 metres below the current surface levels, taking into account a slight fall in levels to the north. The lagoon would be formed using a single High Density Polyethylene (HDPE) liner on top of a geotextile membrane layer. The liner would be secured in place by anchors and soils around the lagoon. These surplus soils would be formed into a low retaining bank around the sides of the lagoon whilst any remaining surplus soils would be evenly spread across surrounding fields. (Plan 3).
13. On completion the lagoon would measure 130m by 80m including its surrounding embankment and would be 5m deep from its base to the crest of the bank side. The internal slopes would be at a 1 in 2 gradient. It would have a capacity to hold 14,205m³ of liquid digestate, allowing for a 500mm vertical freeboard to prevent over-filling or overtopping. Details are shown on plan 3.
14. The proposal includes a flexible cover to the top surface of the lagoon and sealed around the edges so that it would not be open to the elements. This would also be anchored into the surrounding bank and would rise and fall depending on the levels within the lagoon. A series of ventilation pipes would permit the controlled release of any gas build-up within the covered lagoon.

Consultations

15. **Newark and Sherwood District Council** – No objection.
16. **Rufford Parish Council** – Objection. *The Parish Council are of the opinion that the construction of the lagoon will be contrary to Policy W3.7 of the Waste Local Plan due to there being no adequate measures proposed that would mitigate*

the impact of any unpleasant odours. The Odour Assessment has concluded that the lagoon will emit odours that were considered "moderately offensive" to neighbouring properties. This was based on the lagoon containing only certain types of waste which cannot be guaranteed to be used after the lagoon is operational. The planned digestate storage tank was a more acceptable proposal to the Parish Council as this was able to deal with odour emission far more effectively and this option should not have been dismissed purely for reasons of cost.

17. Eakring Parish Council – Support.

- 18. Environment Agency –** No objection subject to conditions requiring the fitting of a leak detection system and to require installation of the HDPE liner is overseen and validated by a suitably qualified geotechnical engineer. *The digestate lagoon is a substantial development built 3-4 metres below ground level. A single HDPE liner is to be used to ensure the digestate does not cause pollution of controlled waters. The site is in a sensitive groundwater location. Although impermeable sheet liners can be effective in preventing leakage they are susceptible to damage and deterioration with age. Failure of the liner and subsequent digestate leakage is likely to go undetected until a pollution incident occurs. For this reason, the proposed lined digestate lagoon in this location can only be considered satisfactory if the installation includes an appropriate leak detection system. This will detect any digestate leaking through a liner and necessary actions can be taken before a pollution incident occurs.*

- 19. Newark and Sherwood Environmental Health –** No objection. *Clearly there is a potential for odour nuisance from the proposed storage lagoon, these concerns were first raised during earlier involvement with the AD Plant in 2009/10.*

The lagoon covering described appears to be a suitable method for containing odour emissions, although it is expected that there is still likely to be some odours associated with the activity.

The latest odour assessment predicts a slight impact at the nearest receptor, however this residence is associated with the farm manager and is at a prevailing upwind location from the lagoon. The area is sparsely populated which will further reduce the likelihood of complaints. The correct operation of the lagoon and [AD plant] should be controlled via the permit conditions and Odour Management Plan.

- 20. NCC Land Reclamation –** No objection. *The proposal for the lagoon relies upon the containment of the digestate by the lagoon wall, including a membrane, and the containment of the emissions through a cover and vents. The risks posed by the digestate to ground and surface waters have been considered along with the odour potential for the scheme. Provided these are followed and any additional requirement from the Environment Agency the proposal raises no objections from the reclamation team.*

The site of the lagoon is underlain by the Retford Member Mudstones, the lagoon itself being lined with a 1.5mm HDPE membrane to mitigate any risk of leakage or seepage from the lagoon. As with any such arrangement the quality of the construction will be crucial in providing containment. Whilst the lagoon is located in lesser sensitive flood and groundwater locations, it is noted that the

lagoon is located within a nitrate vulnerable zone. This would indicate that containment of the liquid digestate would be most prudent.

The odour assessment relies upon a set of assumptions, but concludes that odour impact will be insignificant, reliant upon lagoon cover system, and dilution and dispersion in the atmosphere given the proximity of the nearest receptors. Atmospheric conditions since 2009 have been used in the dispersion modelling.

The assumptions made in the modelling would appear to rely upon continental European experience. The atmospheric conditions particularly ambient temperatures may allow a degree of conservatism in the model.

A standard condition relating to odour control is recommended, along with ensuring the proper fitment of the lagoon cover.

21. **Natural England – No objection.** *The application site is in close proximity to the Birklands and Bilhaugh Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI). Natural England notes that the Air Quality assessment provided with the consultation has screened the proposal to check for the likelihood of significant effects from aerial emissions on these sites and concurs that the proposal is unlikely to have a significant effect on them and would not damage or destroy the interest features for which the site has been notified.*

The development is located in the Sherwood Forest area in proximity to habitats identified as important for breeding nightjar and woodlark. A risk-based approach is encouraged, to ensure that proposals are accompanied by robust assessments of the likely impacts arising from the proposals on breeding nightjar and woodlark and include measures to minimise any potential direct, indirect and cumulative impacts.

Natural England advises that any planning application should run in parallel with an environmental permit application to the Environment Agency.

The planning authority should assess other possible impacts to local wildlife; landscape character and apply standing advice with respect to protected species.

22. **NCC Nature Conservation – No objection.**

No survey has been carried out in support of this application, but as the site is an arable field it is unlikely to support any protected or notable species.

A comprehensive assessment has been carried out of the potential impacts of ammonia (and subsequent nitrogen deposition) emissions from the proposed lagoon, to a number of sensitive ecological receptors in the vicinity. This assessment has demonstrated that such emissions and subsequent deposition will not give rise to a significant impact at any of those receptors (which include the Birklands and Bilhaugh SAC).

Natural England has advised that the proposal is unlikely to have a significant effect on any European site, and can therefore be screened out from any requirement for further assessment, noting that screening has indicated that the process contribution for all pollutants at all sites will be <1% of the relevant critical level or load for the most sensitive habitat at each site. It is concluded

that the proposals will not give rise to any likely significant effect on the Birklands and Bilhaugh SAC, or any other European designated site.

No suitable habitat for breeding Nightjar or Woodlark is present on, or adjacent to the application site. The Ammonia Assessment identifies that Nightjar have previously been recorded in Cutts Wood, to the south-west, but no impacts on that site are predicted as a result of the proposals, as demonstrated by the Ammonia Assessment. It is therefore concluded that the proposals will not give rise to an impact on woodlark or nightjar breeding habitat.

There is potential for ecological enhancement, through planting of trees or hedgerow around the site perimeter or the creation of wildflower meadows within areas of the site that are undeveloped.

23. NCC Built Heritage – No objection.

The proposals are for a lagoon in place of a tank structure that has previously been granted permission.

The lagoon will have a 'less than significant' harmful impact on the setting of the Grade II Listed Park Lodge.

With respect to impacts to the Rufford Abbey Parkland the proposed lagoon will have a negligible impact on the views of and within the registered parkland, and cause less than significant harm to its character and significance.

The registered parkland extends to just south of the site to reflect the extent of the original deer park. The deer park can be traced using old maps and features on the ground, this included Park Lodge which was originally the location of a hunting lodge probably as early as the Medieval period. Nowadays the landscape in this area is characterised largely by modern agriculture, although features such as the Long Belt, immediately bounding the application site remain as strong 'design landscape' features with considerable historic landscape value.

Components of the energy facility (namely the silo tanks and associated buildings) that have already been erected are having an impact of considerable detriment on the appearance of this part of the registered parkland. This is to be mitigated through judicious planting and painting of the tanks in due course.

24. NCC Archaeology – No objection subject to a condition requiring a scheme of archaeological mitigation be agreed and that soil stripping is undertaken by machines with a toothless bucket, under archaeological supervision.

From new research into landscape history it is now known that this area is within the hunting park of the Rufford Abbey estate, a park which almost certainly has its origins in the Medieval period. Park Lodge, the listed building to the west of the site, appears to have been converted into a gothic folly, with views into the Rufford Abbey complex, but its location is shown on the 1637 Bunting estate map, indicating that it has potential to be the hunting lodge for the Park, potentially with Mediaeval origins. Earthwork features and a rare deer barn have been found within the park boundary and it can be deduced that there are other features likely to have been present within the Park and potentially surviving as buried remains.

25. **NCC Highways** - *No objection. The storage lagoon is not expected to have a significant impact on the public highway.*
26. No response has been received from **Bilsthorpe Parish Council; The Gardens Trust; NCC Flood Risk Management; National Grid (Gas); Severn Trent Water Limited** or **Western Power Distribution**. Any response received will be orally reported.

Publicity

27. The application has been publicised by means of site notices, a press notice in the Newark Advertiser and by 17 neighbour notification letters sent to the nearest occupiers in accordance with the County Council's adopted Statement of Community Involvement Review. A letter has been received from one of the properties within Rufford Park Lodge, 260m to the west of the proposed lagoon and is summarised as follows:
28. *Part of the lodge is currently operated as a holiday let for short term breaks and is occupied most weekends by families who have paid for a rural retreat in a peaceful location. Concern is raised about the impact of the works and also the potential for odours above the strength outlined in the Odour Report which could have a significant impact on the popularity of the property and the 'much needed' tourism it attracts.*

The odour report seems to be based on levels recorded at sites in unrelated areas and so the relevance is hard to ascertain. A question is raised whether there are any similar sites within a similar proximity to residential and commercial property where actual historic readings would be more relevant and reliable.

It is noted that the original planning permission was for a sealed tank which has been substituted for a lagoon on grounds of cost. A question is raised about long-term cost savings of the lagoon if odour problems arise.

Question is raised about the gas pipeline that will be used to supply biogas to Center Parcs.

29. Councillors Roger Jackson and John Peck have been notified of the application.
30. The issues raised are considered in the Observations Section of this report.

Observations

Principle of the proposed development

31. As set out in the planning history, the new Stud Farm AD facility has gone through a lengthy evolution and has been subject to amendments reflecting changes to technology and supplier. This application proposes a further revision to the means of storing final liquid digestate which is a by-product of the AD process and a valuable natural fertiliser which requires storing until it can be applied to the land. At the time of the original application for the AD plant a similar type storage lagoon was envisaged elsewhere on the farm, but this was

subsequently replaced by a large storage tank. Permission remains extant for this tank at the present time however the applicant now, again, proposes a lagoon (albeit now covered) citing the expense of the previous tank as part of the reasoning for the change of plan, but also highlighting the lesser visual impact of a lagoon.

32. Relevant planning policy is contained within the Nottinghamshire and Nottingham Replacement Waste Local Plan- Part 1: The Waste Core Strategy (WCS) and saved policies of the Nottinghamshire and Nottingham Waste Local Plan (WLP). District level policy within the Newark and Sherwood Core Strategy and Allocations and Development Management Policies DPD are also applicable particularly in relation to rural policy.
33. The proposed lagoon would be situated immediately adjacent to the AD plant-effectively amounting to an extension of this new facility into the surrounding field. It would be an important ancillary component to the AD plant's operation and also an enhancement to the farm business helping to retain nutrients on the farm and offsetting the need to purchase artificial fertiliser.
34. The proposal is supported in principle by WCS Policy WCS3 which gives priority to the development of new or enhanced AD facilities, albeit that it would not necessarily affect the capacity or throughput of the AD plant itself. The lagoon feature is considered to be an appropriate quasi-agricultural type of development in the open countryside in accordance with Policy WCS4 and Newark and Sherwood Core Policies 3 and 6 and Policy DM8. It is considered that there is an evident need for a storage solution to enable the AD plant to operate effectively due to limitations as to when and how digestate can be applied to the farmland under Nitrate Vulnerable Zone rules. It is also necessary for the lagoon to be located, as it is, in close proximity to the plant to minimise handling whilst also retaining the digestate on the farm holding.
35. Under Policy WCS8 the extension or improvement of an existing waste management facility would also be supported where this would improve existing waste management methods and/or reduce environmental impacts. The proposal also need to be assessed against Policy WCS13 and relevant saved environmental policies of the Waste Local Plan (WLP) to ensure environmental and amenity impacts are satisfactory. These issues of waste management methods and environmental impacts are considered below.

Visual and landscape impact

36. WLP Policy W3.3 seeks to ensure that the built aspects of waste management facilities, including storage areas, are suitably located and designed to minimise visual impacts/intrusion to adjacent land. It promotes the grouping together of such features to avoid unsightly sprawl and to assist in their screening.
37. The proposed lagoon would be appropriately sited next to the AD plant and would benefit from the screening woodland to the south and west which is to be retained and managed for the life of the AD plant through the controls required under the Section 106 legal agreement. The site is not readily seen from outside of the farm and in any case the lagoon would have a minimal visual impact as it would be almost totally sunk into the ground with only a small

landscaped bank rising around the northern and eastern sides of the lagoon. The proposal accords with Policy W3.3.

38. In terms of landscape impact, reference to the relevant landscape character assessment identifies the site as lying within the Mid-Nottinghamshire Farmlands Policy Zone 24- *Rufford Park Estate Farmlands with Plantations* which is deemed of poor landscape condition and low sensitivity, noting the highly intensive nature of arable farming and numerous detracting buildings in the area.
39. The lagoon would have a minimal impact to this landscape which, although falling within the Rufford Historic Registered Park and Garden, is now characterised by commercial activity in terms of the AD plant buildings and digester tanks alongside the large Noble Foods poultry unit. It would be sited on a corner of an arable field and would not require any removal of hedges or trees. The soil bank containing the lagoon would be appropriately landscaped with a suitable seed mix. Other landscaping of the wider facility, including tree planting, will be implemented in due course. The proposal would accord with Core Policy 13 of the Newark and Sherwood Core Strategy and Policy W3.4 of the WLP with respect to landscape impact and provision of landscaping. Furthermore the lagoon would have a significantly less visual impact than the approved storage tank which would have risen 7.5-8m in height.

Heritage/Archaeology

40. The site is situated within the Grade II Listed Rufford Registered Historic Park and Garden and is also within the setting of a nearby Grade II Listed Building – Rufford Park Lodge – situated to the west.
41. Newark and Sherwood Policy DM9 seeks to secure the continued protection to heritage assets. Development proposals should respect historic landscapes through their setting and design. Paragraph 132 of the National Planning Policy Framework (NPPF) states that in considering the impact of a proposal on the significance of a designated heritage asset, great weight should be given to the asset's conservation and that the significance can be harmed through alteration or through development within its setting.
42. With respect to impacts to the setting of Rufford Park Lodge, it is noted that its significance stems from its early origins as a hunting lodge within the Rufford deer park, which was later rebuilt into a gothic folly complete with crenellated parapets. Today it is divided into three properties. The lodge is situated 260m to the west of the site of the proposed lagoon, but would be entirely screened by an intervening projection of the Long Belt wood. The long-term future of this screening woodland is ensured under the terms of a legal agreement associated with the AD plant itself. Whilst there is no direct visual link between the lagoon and the lodge the Built Heritage Conservation Officer finds that the proposal would nonetheless result in a degree of 'less than substantial harm' to its setting.
43. The significance and setting of Park Lodge has inter-relationship with the Registered Parkland. Historically this land was significant as part of the Rufford Abbey estate and deer park, but the Conservation Officer acknowledges that today the landscape has been heavily modified by modern farming. The

adjacent Noble Foods facility and the AD plant itself are also within the registered parkland. The lagoon would result in a negligible impact to views of and within the parkland and overall the Conservation Officer is of the opinion that the proposal would result in 'less than substantial' harm to the character and significance of the registered parkland. No response has been received from the Gardens Trust on this matter.

44. Paragraph 134 of the NPPF, which is a material consideration, states that where a proposal is identified to lead to less than substantial harm to the significance of heritage assets, this harm should be weighed against the public benefits of the proposal. This matter is weighed up at the conclusion however the proposal is considered compliant with Policy DM9.
45. The County Archaeologist has also been consulted with respect to the potential for underlying archaeological interest related to the land's historic function as part of the Rufford Abbey estate. Although situated on the southern periphery of the parkland, previous research and investigations within the park/garden indicate the potential for further buried remains and as such it is recommended that a condition is attached to any grant of planning permission requiring the submission of a scheme of archaeological mitigation and that works proceed under appropriate archaeological supervision.

Groundwater protection

46. It is noted that the site is of some sensitivity in terms of the underlying ground water resources. The site is underlain by a Secondary Aquifer of the Retford member mudstones and siltstones which are permeable strata capable of supporting water supplies and river base flow at a local level. In turn this formation sits on and is adjacent to the Principle Aquifer of the Nottingham Castle Sandstone formation which provide a strategic source of water supply. These are identified on plan 4. The site is also within a Source Protection Zone 3 for a drinking water borehole supply in the area.
47. WLP Policy W3.5 states that permission will be refused where a proposal would result in an unacceptable risk of pollution to ground water or surface water unless the harm can be mitigated by engineering measures and/or operational management systems. The supporting text states that:
48. *'One of the most serious pollution threats to water resources is the disposal of non-inert waste in areas where groundwater is vulnerable and, in particular, catchments of boreholes used for potable supply. If uncontrolled, spillage of waste could pollute an aquifer. Decontamination of groundwater is difficult, prolonged and expensive. Prevention of pollution is, therefore, essential. Waste sites can be lined and/or the surface capped with impermeable material to reduce the risk of pollution. However it is impossible, even with the best available technology, to make a disposal site completely leak proof and there will be certain areas where the risk to the aquifer is so great as to make waste disposal unacceptable.'*
49. The proposal is for a lined storage lagoon formed with a single HDPE liner on a geo-textile sub-base. The liner would be the only barrier to contain the digestate from the ground environment although the applicant has indicated that the

underlying ground is formed of impervious clay which would provide an additional safeguard.

50. The Environment Agency in their remit of protecting water resources advise that the site is considered sensitive to groundwater pollution and although impermeable liners can be effective in preventing leakage they can be susceptible to damage and deterioration with age. However they would not object to a planning approval subject to the fitting of an appropriate leak detection system along with certification that the liner has been properly installed and tested prior to it being brought into use.
51. The Agency have stated that the lagoon would not necessarily require an Environmental Permit as the digestate, as a quasi-agricultural product would not be deemed a controlled waste. However it is understood that the lagoon has been included within the applicant's submission for a permit to cover the AD plant's operation. As such it is likely to be regulated by the Environment Agency.
52. Whilst the risk of pollution therefore must be acknowledged, this risk can be mitigated to an acceptable level and its operation would be regulated under the Environmental Permitting regime to ensure the environment is protected.
53. With respect to the measures required by the Agency, should planning permission be granted, a condition is recommended to require submission of an installation validation report to demonstrate the effective integrity of the liner, prior to it being brought into use. A condition is also recommended to require details of and installation of a leak detection system. There are different leak detection systems which the applicant is considering. One possible solution involves a series of perforated drains underlying the liner into which any leaking digestate would be collected towards inspection points around the periphery. The details of this arrangement can be agreed under the terms of a planning condition in consultation with the Environment Agency.
54. The proposed lagoon cover would be anchored into the surrounding bank, such that rainwater or runoff would be prevented from entering the lagoon and raising the levels of stored digestate. Rainwater would collect on the liner and if required can be pumped off. The site is identified as being at low risk of flooding from river, surface water and ground water sources.
55. Whilst it must be acknowledged that a storage tank would have a greater level of containment than a lagoon, the lagoon is nevertheless considered an acceptable storage solution and risk of pollution would be minimised to an acceptable level. Effective regulation under the Environmental Permit must also be assumed. The proposal is therefore considered to accord with Policy W3.5.

Odour

56. The digestate and its storage has potential to cause odour impacts at nearby residential properties. Rufford Parish Council raise odour potential in their objection to the application and additionally odour is cited as a concern by a nearby property holder.
57. The design has been informed by an odour assessment accompanying the application. The design incorporates a flexible cover which would be sealed around its edges forming a near air-tight seal and protecting the contents from

exposure to wind and weather elements. A series of ventilation ducts would however be required to allow excess build-up of gas to be released. These would be located on the northern edge of the lagoon away from the closest residential property.

58. The assessment has considered the size and nature of the lagoon and predicted emission rates derived from a study of similar facilities in continental Europe. Odour from the digestate has been classified as being 'moderately offensive'. Atmospheric dispersion modelling has then be used to assess the resulting impacts at the five closest (i.e. worst case) receptors, these being: the poultry farm manager's bungalow; Park Lodge; Stud Farm; Round Plantation and Rufford Park/Kennel Wood. The modelling shows that odour disperses significantly over a short distance into the prevailing winds. The report concludes that the predicted odour impact is negligible at all receptors bar the poultry farm manger's bungalow where a slight impact is predicted. The impacts are therefore considered not significant overall.
59. The odour assessment has been reviewed by the District Environmental Health Officer (EHO) and the County Council Land Reclamation Officer. The EHO is content that the assessment is robust and agrees that there would only be a slight impact at the bungalow which is associated with the farm manager. The sparsely populated nature of the area would reduce potential for nuisance. The County Land Reclamation officer notes that continental European examples have been used in the odour modelling which would potentially suggest a conservative approach to the assessment. The officer is also content with the odour classification of the digestate as 'moderately offensive'.
60. How odour is perceived is inevitably variable depending on the circumstances. For example whilst residential receptors are generally considered to be sensitive to odour, this will naturally vary between environments, such that in a rural setting as this, residents may perceive agricultural type odours as more acceptable and a part of life when living in the countryside. It should also be noted that digestate is likely to be considerably less odorous than more traditional slurry when spread on the land.
61. In response to the issue and the Parish Council and local objection it is considered that a robust assessment of likely odour impact has been undertaken and that adequate mitigation, primarily in the form of the sealed cover and vents, has been specified such that the residual effects are insignificant to sensitive receptors. Cumulative odour impacts should not be significant as all elements of the AD site will be regulated under an Environmental Permit.
62. Rufford Parish Council cite other concerns that the types of waste could change in the future. However planning conditions on the AD plant restrict this, as would an Environmental Permit, which would also govern odour from the AD plant along with the lagoon.
63. From an odour management aspect the proposal is considered to accord with Policy WCS13. In accordance with WLP Policy W3.7, conditions are recommended to ensure fitment of the cover and the response to be taken in the event of odour issues arising.

Agricultural benefits/ soil resources

64. The proposed lagoon would result in commercial and operational benefits to the farm by providing a large store for holding liquid digestate until it can be applied as a natural fertiliser. Nitrate Vulnerable Zone rules restrict the times of year that farmers can apply such fertilisers to the land to limit the levels of nutrient run-off to watercourses. The lagoon would mean that this digestate can be retained on the farm without it having to be transported to alternative sites or result in its possible disposal. The digestate can reduce the need for certain artificial fertilisers which are typically derived from fossil fuels sources such as oil. The lagoon would assist in supporting the rural economy in accordance with Core Policies 3 and 6 and Policy DM8.
65. The lagoon would result in a relatively small, corner portion of an arable field being developed. It is understood that the soils are classified at Grade 3 quality although its precise classification is not known. Its loss is considered to be outweighed by the benefits to the rural economy along with its support to the generation of renewable energy at the adjacent AD plant.

Ecology impacts

66. The application site is not notable for any habitats or species of ecological interest – it being used for arable farming nor is the adjacent woodland designated in any way. The development of the lagoon therefore would result in no significant direct ecological effects.
67. Agricultural storage lagoons such as this are identified by Natural England as having potential to impact protected ecological sites as a result of their air emissions and subsequent deposition of nutrients to these habitats. The site is within identified zones of potential impact for several Sites of Special Scientific Interest (SSSI) in the area, one of which also forms a Special Area of Conservation (SAC) within Sherwood Forest (Birkland and Bilhaugh SAC).
68. A supplementary Ammonia Assessment has been submitted to consider airborne emissions and potential impacts through (nitrogen) deposition to a number of sensitive ecological receptors in the locality. Natural England are satisfied that the potential emissions and subsequent deposition would not lead to any significant impact to any of the designated sites for ecology including the SAC. The County Ecologist is also content that such potential impacts have been thoroughly considered and advises that the emissions would not give rise to a significant impact.
69. There is limited potential for ecological enhancements to the scheme, the embankment surrounding lagoon, along with peripheral areas could be sown with a suitable species rich grass/wildflower mix. Wider landscaping of the AD plant, including planting of screening trees, remains pending but is required as part of the separate planning permission for the AD plant. The aim therefore would be to secure site-wide landscaping to provide screening for the AD plant structures and low level landscape cover for around the adjacent lagoon.
70. The proposed development is therefore compliant with Policy WCS13 with respect to ecology and habitats including those in the wider area.

Residential amenity impacts

71. The assessments above lead to the conclusion that the area is sparsely populated and that therefore residents in these outlying properties would not be significantly affected in terms of odour or visual impact. Indeed the proposal would have a minimal visual impact and would be screened from Park Lodge. It is also the type of quasi-agricultural development which will be common in such a working landscape.
72. Fears primarily about odour emissions affecting the attractiveness of the area for tourism have been raised by a local objector with respect to a holiday let within Park Lodge. However it has been assessed that residents/guests would have minimal exposure to malodour which in any case would be characteristic of the farming landscape. Guests staying for short breaks would in all probability do so on the understanding of staying within a working farm environment and could expect a degree of agricultural odour.
73. There would be a slight odour impact to the closest property, being the bungalow to the south. This is understood to be occupied by a farm manager or worker and could therefore be considered less sensitive, but the level of impact is nonetheless considered acceptable. No representations have been received from this property.
74. The proposal is therefore considered compliant with Policy WCS13 with respect to preserving local and residential amenity.

Other material considerations

75. Rufford Parish Council have commented about their preference for the permitted storage tank instead of the proposed lagoon. Under the terms of Policy WCS8 (Extensions to existing waste management facilities) it is reasonable to give some consideration to their respective merits as to how waste management methods would be improved and/or environmental impacts reduced although it should be recognised that this policy is not determinative in reaching the recommendation below.
76. From an odour management aspect it should be noted that both the lagoon and tank would have covers fitted to limit odour and would similarly operate under the AD Plant's Environmental Permit to control emissions. As such it could be expected that both would result in similar levels of (minimal) odour impact to nearby residents.
77. It is recognised that a storage tank would, if built today, incorporate secondary containment (usually a bunded area) to provide an additional level of protection to the ground environment from a potential leak. The lagoon would be reliant on the integrity of the single liner, however the risk of pollution from the lagoon can be managed to an acceptable level with a leak detection system.
78. It is notable that the lagoon would have a much reduced visual impact when compared with the approved storage tank and would also require significantly less use of natural resources in its construction. The lagoon would also have a slightly larger capacity than the approved storage tank.

79. The proposal therefore generally accords with Policy WCS8 in reducing environmental impacts and providing appropriate mitigation and waste management methods.

Other Options Considered

80. The report relates to the determination of a planning application. The County Council is under a duty to consider the planning application as submitted. Accordingly no other options have been considered.

Statutory and Policy Implications

81. This report has been compiled after consideration of implications in respect of finance, the public sector equality duty, human resources, crime and disorder, human rights, the safeguarding of children, sustainability and the environment, and those using the service and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

Implications for Sustainability and the Environment

82. The storage of final digestate would retain this valuable fertiliser on the farm estate, displacing the need for artificial fertilisers. The store would also support the operation of the AD plant in processing waste materials into renewable energy. Matters of odour and the protection of ground water resources are assessed in the report, however appropriate mitigation would be enacted should planning permission be granted.

Crime and Disorder Implications

83. The site is on private farmland and benefits from passive security from the adjacent farm bungalow.

Human Rights Implications

84. Relevant issues arising out of consideration of the Human Rights Act have been assessed. Rights under Article 8 (Right to Respect for Private and Family Life), Article 1 of the First Protocol (Protection of Property) and Article 6.1 (Right to a Fair Trial) are those to be considered and may be affected due to the proximity of residential properties. The proposals have the potential to introduce impacts such as odour. However, these potential impacts would be controlled and regulated to minimise their significance. Any residual effects need to be balanced against the wider benefits the proposals would provide such as supporting the rural economy and through assisting with the generation of renewable energy. Members need to consider whether the benefits outweigh the potential impacts and reference should be made to the Observations section above in this consideration.
85. There are no financial; equalities; human resource; or children safeguarding implications. There are no implications for County Council Service Users.

Conclusion

86. As a quasi-agricultural development the lagoon is acceptable in the open countryside and accords with Waste Core Strategy Policy WCS4 and Newark and Sherwood Core Policies 3 and 6 and Policy DM8. The lagoon would be an ancillary component of the new AD facility and would generally accord with the Policies WCS3 and WCS8.
87. The proposed lagoon is considered to be an acceptable storage solution to hold liquid digestate. Whilst the underlying groundwater is sensitive to potential pollution, the risk of the lagoon liner failing and a pollution incident occurring can be minimised with an appropriate leak detection system as recommended by the Environment Agency. The risk is therefore mitigated to an acceptable level and the lagoon would also be regulated as part of an Environmental Permit for the new AD facility. The proposal accords with WLP Policies W3.5 and W3.6 on this matter.
88. There is limited potential for odour at an adjacent farm manager's bungalow. However the lagoon is within a relatively sparsely populated area and it would be fitted with a near-airtight sealed cover to control odour releases. The Environmental Health consultees do not raise an objection and odour would also be controlled under the terms of an Environmental Permit.
89. The lagoon is acceptable from ecological and landscape/visual impact perspectives meeting the terms of WCS Policy WCS13, WLP Policy W3.4 and NSDC Core Policy 13. Planning conditions are recommended to safeguard protection of groundwaters and for odour management by including the fitting of a leak detection system and a cover. Conditions are also recommended to require an archaeological watching brief and for completion of final landscaping. Local residential amenity would be maintained to acceptable standards in accordance with Policy WCS13.
90. The lagoon would be sited within the designated Rufford Registered Historic Parkland and is within the setting of the nearby Grade II Listed Park Lodge. The lagoon would have a minimal visual impact on this landscape which although historic has been heavily modified by modern farming practices. The lagoon would be screened from Park Lodge by the adjacent Long Belt Woodland. The heritage advice identifies that the proposal would result in 'less than substantial harm' to the significance of the parkland and also to the setting of the Listed Building. Paragraph 134 of the NPPF requires that where a proposal would result in less than substantial harm to heritage assets that this harm should be weighed against the public benefits.
91. In this case, whilst considerable importance and weight must be given to the heritage conservation interests, the very limited harm is clearly outweighed by the benefits to the farm and to the rural economy in terms of retaining nutrients on the farm holding and by supporting the operation of the new AD facility along with the renewable energy it will produce. The lagoon is an appropriate quasi-agricultural development in the modern context and is considered to support the aims of sustainable development thereby complying with Policy WCS1.

Statement of Positive and Proactive Engagement

92. In determining this application the Waste Planning Authority has worked positively and proactively with the applicant by assessing the proposals against relevant Development Plan policies, all material considerations, consultation responses and any valid representations that may have been received. This approach has been in accordance with the requirement set out in the National Planning Policy Framework.

RECOMMENDATIONS

93. It is RECOMMENDED that planning permission be granted subject to the conditions set out in Appendix 1. Members need to consider the issues, including the Human Rights Act issues, set out in the report and resolve accordingly.

TIM GREGORY

Corporate Director – Place

Constitutional Comments

Planning & Licensing Committee is the appropriate body to consider the content of this report.

[SLB 31/08/2016]

Comments of the Service Director - Finance

There are no specific financial implications arising directly from this report.

[RWK 31/08/2016]

Background Papers Available for Inspection

The application file available for public inspection by virtue of the Local Government (Access to Information) Act 1985.

Electoral Divisions and Members Affected

Rufford

Councillor John Peck

Farnsfield and Lowdham

Councillor Roger Jackson

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