Appendix 1 - Environmental Impact Assessment Summary

1.1 The application is accompanied by an Environmental Statement which is considered to meet the requirements of the Town and Country Planning (Environmental Impact Assessment Regulations 2017 (EIA Regulations).

- Transport
- Noise
- Air Quality and Odour
- Flood Risk
- Landscape and Visual Impact
- Ecology and Biodiversity
- Heritage
- Agricultural Land Quality

1.2 A summary of the main finding and conclusions of the submitted information is set out below:

Transport Statement

1.3 The proposed AD facility is seeking permission for the importation of 130,000 tonnes per annum of energy crops. The traffic generation exercise was carried out for the AD facility; staff, servicing / maintenance; input material and output material.

Staff

1.4 There would be 6-7 members of staff onsite 7 days a week between 07:00 and 19:00, however, staff would arrive and depart at intervals during the day to fulfil operational requirements.

1.5 The worst-case scenario would be all 7 members of staff arriving and departing in separate vehicles. This equates to 14 two-way trips per day.

1.6 Parking would be provided for staff vehicles

Servicing / Maintenance

1.7 The majority of servicing and maintenance would be carried out by the permanent members of staff. However, there would be occasional trips to the site by specialists, but this would not be a significant levels of traffic generation.

Input Material

1.8 Approximately 50,000 tonnes of material will be delivered directly from the fields which are part of the Buckminster Estate at harvest time over a 6-week period and stored onsite in silage clamps. The material is likely to comprise of maize (September/October), whole crop cereal (June/July) and grass (3 cuts

over the summer months). Approximately 50% (25,000 tonnes) will be delivered by tractors with trailers. The other 50% (25,000 tonnes) will be delivered from Buckminster Estate fields further away by HGVs carrying 26t loads resulting in 962 vehicles accessing the site during the 6-week gravest period. This equates to 22.9 HGV arrivals per day, and 46 two-way trips.

1.9 The remaining 80,000 tonnes of material will be stored at satellite hubs and supplied to the site on a just in time basis at a constant rate throughout the year. This will be by specialist haulage HGVs carrying 26t loads, resulting in 3,077 vehicles per annum. This equates to 8.5 HGV arrivals per day, and 17 two-way trips.

Output Material

1.10 The AD plant produces gas that would be injected into the local National Grid gas network. No generation of traffic.

1.11 It would also produce approximately 24,000 tonnes per year of carbon dioxide which would be liquified and transported offsite. This would result in 1,200 vehicles per annum and 3.3 vehicle arrivals per day, and 7 two-way trips.

1.12 The AD plant would produce approximately 89,000 tonnes of biofertilizer and this would be stored onsite. 20,000 tonnes would be spread on the fields immediately surrounding the site. The remaining 15,000 tonnes would be transported to Buckminster Estate fields further away by HGVs resulting in 577 vehicles over 46 weeks. This equates to 1.8 vehicle arrivals per day, and 4 two-way trips.

1.13 Approximately 54,000 tonnes would be transported offsite by HGVs that will first deliver the energy crop feedstock. This generates no additional traffic.

1.14 Gunby Road / Sewstern Road is a ‘C’ classified road, and Buckminster Road is a ‘B’ classified road. It is proposed to provide a new access road linking from the site to the B676 Buckminster Road to the north. This road is a single carriageway and runs in an east/west direction providing access to the A1, and Melton Mowbray and various villages. The carriageway is typically 5.5m in width.

1.15 An automatic traffic counter on Buckminster Road, Gunby Road and Sewstern Road confirm that vehicles travel within the speed limits for the respective roads. The automatic traffic counter also confirm that the respective roads are lightly trafficked.

1.16 The personal injury accident data obtained reveals no recorded collisions within the vicinity of the junction of Buckminster Road or on Gunby Road or Sewstern Road.

1.17 The Transport Statement concluded that the proposed development would generate up to 6 HGV movements per hour, and the site access and access road would be suitable.

Noise Assessment

1.18 The main potential sources of noise were identified as: fixed mechanical plant; and onsite activity including loading shovels, feed hoppers and HGV movements. The flare would also lead to potential noise, but this is infrequent use.

1.19 The noise sensitive residential properties are identified as 700m to the west at Sewstern, 650m to the east at Gunby and properties located 200m to the north of the proposed access road.

1.20 Baseline noise surveys were undertaken at two locations over a period considered sufficient to get a representative background noise climate. The daytime noise levels were recorded at 31 to 32dB with occasional sound levels below 30dB at the weekend. During the night the typical measured background sound level was 26dB and 18dB. Background noise levels were measured to be very low.

1.21 The change in road traffic noise level as a result of the proposed development generated vehicles is predicted to be negligible with the change in sound level being not perceptible.

1.22 The principal source of noise from the proposed development would be from the loading shovels. However, it would be mitigated by the barrier effect of bulked up material stored in the clamps. Predicted rating levels are around or below 35dB at all locations, which are also considered to be low, therefore low impact is predicted at all receptors.

Air Quality and Odour Report

1.23 The main sources of potential air quality impacts include; road vehicle exhaust emissions; and combustion plant emissions. The air quality receptors were identified as human (nearby residential properties) and ecological receptors (roadside verges, Stainby Warren woodland). Dispersion modelling was undertaken in order to predict pollutant concentrations at sensitive locations as a result of emissions from the relevant sources.

1.24 The baseline survey confirms that there is one Air Quality Management Area in the district, Manthorpe Road, Wharf Road, High Street and London Road. The AQMA is over 13.5km from the site. All other pollutant concentrations are below the relevant air quality levels.

1.25 Mitigation proposed includes a 5m tall stack to disperse combustion emissions from the biogas boiler, covering of feedstock (except at the working clamp face), and covering the digestate lagoon to control odour emissions.

1.26 Potential air quality impacts associated with the road vehicle emissions are predicted to be negligible and not significant.

1.27 In relation to the combustion plant emissions, nitrogen dioxide would increase for nearby residential receptors and for the industrial receptor, Sewstern Industrial Estate, and nitrogen oxides for nearby ecological receptors. However, these are negligible increases and classified as not significant.

Sulphur dioxide would increase for nearby residential receptors and for the industrial receptor, and ecological receptors. These are again negligible increases and classified as not significant. Nitrogen deposition and acid deposition would also increase for nearby ecological receptors, but are predicted to be not significant. Based on the predictions it is considered that there would be no constraints to approval from an air quality perspective.

1.28 The odour assessment used the dispersion model technique. The significance of odour impacts as a result of emissions from the AD plant were predicted to be negligible at all receptor locations. The overall odour impact associated with the facilities was considered not to be significant in accordance with the methodology and the IAQM impact descriptions.

Flood Risk Assessment

1.29 A Flood Risk Assessment was prepared to evaluate the flood risk to the proposed development, in addition to considering the impact that the development will have on the surrounding area as the site's planning boundary exceeds 1 hectare. The report includes a surface water drainage strategy.

1.30 Drainage ditches bound the eastern, southern and western boundaries of the main site, and a further drainage ditch is located to the west of the access to the main site along Sewstern Road. There is a unnamed watercourse situated in proximity to the access on Buckminster Road. There is potential ground water below the site. The site is within the River Witham catchment.

1.31 The surface water drainage system for the main site area will receive the runoff from the proposed asphalt access, roofs, and concrete bund where the tanks are located (1.985ha). Runoff from the clamp and surrounding hardstanding, in addition to a limited area in the south-west of the site, will drain to the separate dirty water drainage system, that outfalls into the digestate storage lagoon. Pollution control measures are incorporated.

1.32 The site is located within Flood Zone 1 and has less than a 0.1% chance of flooding at a location per year. The majority of the site would have less than 25% susceptibility to ground water flooding. There would be a risk of surface water flooding during 3.3%, 1.0% and 0.1% flood events. During a flood event there is an area of the site access road that would be flooded. It is proposed that the site should be temporarily closed, and any workers onsite evacuated until the flood water recedes.

1.33 The proposed development is at low to moderate risk of groundwater flooding, and very low risk of flooding from reservoirs. Most of the site structures and the access are located in an area that is not at risk of pluvial flooding.

Landscape and Visual Impact

1.34 The South Kesteven Landscape Character Assessment (January 2007) describes the site location as in the Kesteven Uplands. The potential impact of the development was assessed against historic mapping, policy and a review of the site. The potential impact of the development was assessed from twelve viewpoints within 1km of the site.

1.35 The site is located on a small plateau area with an approximate elevation of 132metres. There are limited public rights of way in the vicinity of the site. The nearest passes within 1km to the east of the site, although the development is largely screened by topography, hedgerow and woodland. There are permissive footpaths around Gunby which have open views towards the site through gaps in the field boundary hedgerow. There are also occasional views across the landscape from minor roads in the area which are fringed by tall hedgerow.

1.36 The main findings were:

- Landscape Sensitivity is considered to be pastoral landscape, some historic hedgerow boundaries and ancient woodland, and few distracting elements. – medium/high
- Visual sensitivity is considered to be potential views from higher lands, potential views from public rights of way and residential dwelling houses, and potential views from the east and north along public roads. – medium/high
- Landscape value is that it is an arable field within a landscape with good value, no notable conservation or historic designations in the immediate vicinity and no known particular local associations. – medium
- This leads to the Landscape Character Sensitivity of the site being considered medium/high and overall landscape capacity to be medium/low.

1.37 There would be an impact of a temporary nature from the construction phase e.g. removal of landscape features, cranes or plant, site vehicles, materials and temporary lighting. There would be an impact from the completed development including a change of land use from open field to interrupted landscape with new structures and hard surfacing, new built features in the landscape, new planting and screening for the site.

1.38 In terms of the effects on visual amenity these would range from minor adverse to moderate adverse from the built form, and minor beneficial from the addition of planting and vegetation e.g. new hedgerow.

1.39 Mitigation proposed includes native tree and shrub planting on the north, east and south boundaries of the site, and reinforced existing hedgerow with native hedgerow and tree species. There will also be new planting offsite on other areas of the Buckminster Estate. This includes new hedgerow, tree planting and gaps in existing hedgerows planted with new native planting.

Ecology Appraisal

1.40 A Preliminary Ecological Appraisal was undertaken for the site which considered the potential impacts on habitats and plant species. The site is within the Cribbs Lodge Meadow SSSI impact risk zone. There are also three non-statutory designated sites, Local Wildlife sites, located within 2km of the site. Skillington to Gunby Road Verges, Stainby Warren and North Witham

Road Verges. Stainby Warren is also classed as a priority habitat a deciduous woodland.

Habitats and plant species

1.41 The main habitat is arable cultivated land, with some arable field margins, dense scrub, hedgerows, a dry ditch, and hard standing.

Amphibians

1.42 Eight waterbodies were located within 500m of the site boundary, and four were subject to assessment. The e-DNA results confirms that there were no amphibians present and the HSI score was average. The habitats on site are also considered to provide limited suitable terrestrial habitat for other amphibian species.

Reptiles

1.43 The scattered scrub, hedgerow bases and arable field margins provide some suitable refuge, foraging and commuting grounds for reptile species. However, the wider habitat largely comprises of arable land, reducing the overall suitability.

Bats

1.44 There was an Ash tree with Bat roosting suitability and the hedgerows and adjacent woodland edge provide some suitable foraging / commuting habitat for bats. There is also suitable connectivity within the wider landscape through hedgerows and small patches of woodland.

Badgers

1.45 No badger setts were observed on or within 30m of the site boundary. The arable field margins, scrub and hedgerow within the site boundary provide suitable foraging and commuting grounds for badger.

Otters

1.46 The habitats within the site are considered to provide negligible suitability for otters. No records were returned for otters within 2km of the site boundary

Water Voles

1.47 The ditches are considered unsuitable for water vole.

Other mammals

1.48 The scrub and hedgerows provide suitable habitat for various mammal species.

Birds

1.49 The hedgerows, arable field margins, scrub and arable land provides some suitable nesting and foraging opportunities for a range of bird species.

Invertebrates

1.50 The hedgerows and scrub provide some suitable habitat for various invertebrate species. No records were returned within 2km of the site boundary.

1.51 In conclusion, the site was not found to support any important ecological features. Mitigation is proposed for reptiles, bats, badgers, other mammals, and birds. There are proposals to enhance the site for wildlife through the delivery of BNG.

Biodiversity Net Gain

1.52 A Biodiversity Net Gain (BNG) report and metric was submitted with the application which calculated the current biodiversity baseline value of the site, the pre-intervention scenario, the habitat creation and the enhancement required to achieve a 10% net gain and an outline strategy for BNG delivery.

1.53 The habitats were condition assessed during a Preliminary Ecological Appraisal (PEA) survey and the metric calculation tool was used to determine the value of the sites biodiversity.

1.54 The baseline habitats were confirmed to be native hedgerow with trees, native hedgerow, hardstanding, non-cereal crop, modified grassland, other neutral grassland and mixed scrub. The development will have the following habitats created; trees, other neutral grassland, SuDs, mixed scrub, modified grassland, and hard standing. The development will retain native hedgerow, hedgerow with trees and other neutral grassland.

1.55 The statutory biodiversity metric concluded that the proposed development would have an overall 12.21% net gain in habitat units and a 28.64% net gain in hedgerow units.

Heritage

1.56 The submission includes a Geophysical Survey report to investigate the potential for archaeological remains.

1.57 The baseline was established for archaeological potential using mapping, the Historic Environment Record, books, aerial photographs, lidar data and a walkover of the site. There are no prehistoric or Saxon entries recorded in the assessment area. A roman road, The Drift is 600m to the west of the site.

1.58 There are a total of 25 designated assets within the 3km Assessment Area. Mitigation includes extensive tree planning to the north, east and south of the development site to screen the site from nearby heritage assets.

1.59 In conclusion, the proposed AD plant was found to not cause harm to any designated heritage asset, or effect on the historic environment to meet the threshold for being significant.

Agricultural Land Quality Assessment

1.60 An Agricultural Land Classification (ALC) Report has been prepared to provide details of the condition of the proposed extension area and to determine likely

impacts on soils resources and agricultural land quality. The survey site consists of two fields.

1.61 The soils on the site are poorly drained with a Soil Wetness Class IV with high clay content. The resultant wetness/workability limitations mean machinery land access is rarely possible in spring; arable use is mainly restricted to autumn sown crops. Land of grade 3 has been identified and the subgrade is 3b.

1.62 Subgrade 3b is land capable of producing moderate yields of a narrow range of crops.