The Millbrook Power (Gas Fired Power Station) Order

6.4 Environmental Statement Non-Technical Summary

Planning Act 2008
The Infrastructure Planning
(Applications: Prescribed Forms and Procedure) Regulations 2009

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Contents

1 Introduction

1.1 Overview

1.1.1 This document is the Non-Technical Summary (NTS) of the Environmental Statement (ES) (ES NTS) for the Millbrook Power Project (hereafter referred to as the Project). It has been prepared by Peter Brett Associates LLP (PBA) on behalf of Millbrook Power Limited (MPL) (the "Applicant").

1.1.2 The Project would be located in an area known as 'the Marston Vale' between Milton Keynes and Bedford with the approximate centre of the Project Site at grid reference 501373, 240734, The Project would comprise:

- A new Power Generation Plant in the form of an Open Cycle Gas Turbine (OCGT) peaking power generating station, fuelled by natural gas and capable of providing a rated electrical output of up to 299 Megawatts (MW). The Power Generation Plant comprises:
  - Generating equipment including one Gas Turbine Generator with an exhaust gas flue stack and balance of plant, which are located within the Generating Equipment Site (together the "Generating Equipment");
  - A new purpose built access road to the Generating Equipment Site (the "Access Road" or the "Short Access Road");
  - A temporary construction compound required during construction only (the "Laydown Area");
- A new underground gas pipeline connection to bring natural gas to the Generating Equipment from the National Transmission System (the "Gas Connection"); and
- A new electrical connection to export power from the Generating Equipment to the National Grid Electricity Transmission System (NETS) (the "Electrical Connection").

1.1.3 The Project is proposed at and in the vicinity of the former clay extraction pit at Rookery South, near Stewartby, Bedfordshire. The boundary of the Project Site falls within both Central Bedfordshire Council (CBC) and Bedford Borough Council (BBC) areas.

1.1.4 The location of the Project Site is shown in Figure 1.1 of the ES.

1.1.5 The Generating Equipment, Access Road and Laydown Area are together known as the "Power Generation Plant", and are located within the Power Generation Plant Site.

1.1.6 The Power Generation Plant, Gas Connection, and Electrical Connection, together with all access requirements are referred to as the "Project" and are all

required for the generation of electricity and subsequent export of that electricity to the NETS. The land upon which the Project would be developed, or which would be required in order to facilitate the development of the Project, is referred to as the 'Project Site'.

1.1.7 All elements of the Project are shown on Figure 1.2 of the ES.

1.1.8 The Generating Equipment would operate as a 'peaking plant', meaning it would operate intermittently. This could be at any time during the year and for any length of time up to but not exceeding 2,250 hours and not exceeding 1,500 hours on a 5 year rolling average.

1.1.9 A peaking plant is designed to operate when there is a surge in demand for electricity associated with a particular event (e.g. when a large number of people boil their kettles following the end of a popular TV programme) or when there is a sudden drop in power being generated from power stations which are constantly in operation. It will also support intermittent forms of renewable energy which are weather dependent (e.g. wind and solar).

1.1.10 The Project constitutes a Nationally Significant Infrastructure Project (NSIP) pursuant to the Planning Act 2008, which means that a Development Consent Order (DCO) is required to build, operate and maintain it. The proposed DCO Application will be processed and examined by the Planning Inspectorate who will make a recommendation on whether the DCO should be granted by the Secretary of State for Business, Energy and Industrial Strategy (Secretary of State) with whom the final decision lies. The ES and this ES NTS have been prepared in accordance with Regulation 2 and 10 of the Infrastructure Planning (Environmental Impact) Assessment Regulations 2009 (the "EIA Regulations"). They present information specifically aimed at describing the nature, scale and location of the Project and an assessment of any likely significant environmental impacts resulting from the Project.

1.1.11 In accordance with Regulation 20 of the EIA Regulations copies of the ES, this ES NTS and the Figures may be examined during the pre-examination and examination periods at:

- Central Bedfordshire Council Office (Priory House, Monks Walk, Chicksands, Shefford Bedfordshire, SG17 5TQ, open Mon to Thu 08:00 – 17:30 and Fri 08:00 – 17:00);
- Bedford Borough Council Office's Customer Service Centre (2 Horne Lane, Bedford MK40 1RA, open Mon to Thu 08:30 – 17:00 and Fri 08:30 – 16:00);
- Marston Vale Forest Centre (Station Road, Marston Moretaine, Bedford, MK43 0PR, open Mon to Sun 10:00 – 16:00); and at the following local libraries:

Bedford Library Harpur Street, Bedford, MK40 1PG	Mon/Tue/Wed/Fri 09:00 – 18:00 Thu 09:00 – 13:00 Sat 09:00 – 17:00 Sun Closed
Ampthill Library, 1 Dunstable Street, Ampthill, Bedford, MK45 2NL	Mon/Wed/Fri 10:00 – 18:00 Tue Closed Thu 14:00 – 18:00 Sat 10:00 – 13:00 Sun Closed
Wootton Library Lorraine Road, Wootton, MK43 9LH	Mon/Fri 14:00 – 18:00 Tue Closed Wed 10:00 – 13:00 / 14:00 – 18:00 Thu Closed Sat 10:00 – 13:00 Sun Closed

1.1.12 The technical appendices to the ES will only be available electronically at the council offices, libraries and Forest Centre. and the PINS NSIP website.

1.1.13 Copies of the ES and this ES NTS can also be found on the Project website: http://www.millbrookpower.co.uk and the PINS NSIP website http://infrastructure.independent.gov.uk/.

1.1.14 The Documents can be obtained by writing to Millbrook Power Limited, 49 York Place, Edinburgh, EH1 3JD. A reasonable copying charge may apply up to a maximum of £250 for the full suite of Documents and £10 for an electronic copy on CD. Copies of individual Documents are also available on request.

1.2 Purpose of this Document

1.2.1 The Project requires an Environmental Impact Assessment (EIA) in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (the EIA Regulations).

1.2.2 The Project falls under the EIA Regulations 2009 regime and not the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations 2017) regime. This is because a scoping opinion was requested from the Secretary of State under the EIA Regulations 2009 before the commencement of the EIA Regulations 2017. This means that, in accordance with the transitional arrangements at Regulation 37 of the EIA Regulations 2017, the EIA Regulations 2009 will continue to apply to the Project.

1.2.3 EIA is an assessment of the Project's likely significant environmental effects. This document is a summary (in non-technical language) of the ES for the

Project which details the results of the EIA. The full ES is available separately (Document Reference 6.1).

1.3 The Applicant

1.3.1 The Applicant for the Project is MPL, an energy development company established for the Project and a wholly owned subsidiary of Drax Group plc (Drax).

1.3.2 Drax is responsible for generating 7% of the UKs electricity, predominantly via Drax power station in Selby. Drax is one of the UK's largest energy producers and is committed to helping to reduce carbon emissions, displacing more coal off the system and providing additional system support to plug the gaps created by intermittent renewables and boost security of supply.

1.3.3 Further details on the companies above are provided at www.millbrookpower.co.uk or www.drax.com.

1.4 Need for the Project

1.4.1 There is a considerable national need for this type of project, acknowledged at all levels of government policy. National planning policy supports the need for new electricity infrastructure due to the current ageing and inevitable closure of older coal fired power plants and the likely increase in demand for electricity over the coming decades.

1.4.2 The Government's policies in relation to NSIPs are set out in National Policy Statements (NPSs). NPS EN-1 (the overarching energy NPS) states that "gas will continue to play an important role in the electricity sector - providing vital flexibility to support an increasing amount of low-carbon generation and to maintain security of supply (Paragraph 3.6.2)".

1.4.3 Gas is a reliable fuel source. It is acknowledged by the Government as being essential to a low-carbon economy and to underpin the country's energy security. In addition, gas peaking plants provide back-up to power generation from renewable sources, particularly wind power, which is an increasingly prevalent but intermittent energy source. Modern gas fired power plants are among the most efficient and cleanest forms of electricity generation.

1.4.4 The recommendations and needs case set out in NPS EN-1 are also reflected in the 'Updated Energy and Emissions Projections' – 2016 (BEIS 2017). The projections describe how, under current policy, emissions from the power sector fall by 52% from 113 MtCO2e in 2015 to 54 MtCO2e in 2020. Low carbon generation is projected to increase from 47% of the generation mix in 2015 to 61% in 2020. The projections also realise that in the short to medium term, an increase in flexible gas generation is required to maintain system flexibility given likely increases in renewable generation and decreases in coal generation (Figure 5.1).

1.5 Planning Policy Context

1.5.1 The ES and this ES NTS have been prepared with reference to all relevant European, national, regional and local policy. Details of these are contained in Chapter 2 of the ES.

1.5.2 As referred to in Paragraph 1.4.2 above, the Department for Energy and Climate Change (now the Department for Business, Energy and Industrial Strategy) has published a number of NPS' in relation to energy infrastructure, which were designated by the Secretary of State in July 2011. These NPS' set out national policy against which proposals for NSIPs are assessed and decided on.

1.5.3 Due to the nature of the Project (which will generate over 50 MW of electricity), four of the designated NPS' are considered relevant to the determination of the proposed DCO Application:

- NPS for Energy EN-1: This sets out national policy for energy infrastructure as defined by the Planning Act 2008, which provides the primary basis for decisions by the Secretary of State;
- NPS for Fossil Fuel Electricity Generating Infrastructure EN-2: This sets out policies specific to the determination of applications for fossil fuel electricity generating infrastructure;
- NPS for Gas Supply Infrastructure and Gas and Oil Pipelines EN-4: This sets Government policy on the relevant considerations and factors that should be taken into account as to route selection for developers for, inter alia, gas pipelines; and
- NPS for Electricity Networks Infrastructure EN-5: This provides the primary basis for decisions taken by the Secretary of State on applications it receives for electricity network NSIPs, including the relevant considerations and factors that should be taken into account related to route selection. The Electrical Connection is underground rather than overhead but various policies may still be considered by the Secretary of State to be important and relevant in the determination of the Application for Development Consent.

1.5.4 NPS EN-1 states that consideration may be given to planning policy outside the NPS' where it is important and relevant to the Secretary of State's decision. Other national planning policies have therefore been considered in the preparation of the ES as these may be relevant to the determination of the proposed DCO Application.

1.6 Other Documentation

1.6.1 This is the NTS of the ES. However, this ES NTS also makes reference to a number of other supporting documents of the DCO Application. The list below provides the reader with a contents for the ES in order to aid navigation should they wish to locate further information:

Document Reference 6.1 - Environmental Statement

1 Introduction

2 Regulatory and Policy Background

3 Project and Site Description

4 Environmental Impact Assessment Methodology

5 Alternatives Considered

6 Air Quality

7 Noise and Vibration

8 Ecology

9 Water Quality and Resources

10 Ground Conditions

11 Landscape and Visual Impact Assessment

12 Traffic and Transport

13 Historic Environment

14 Socio-economics

15 Other Issues Considered

Document Reference 6.2 - ES Appendices

Volume A – 1.1 Project Glossary

Volume B – 1.2 Scoping Report and Scoping Opinion

Volume C – 2.6 – 2.14 Legislation and Policy Context for Technical Chapters

Volume D – 3.1 – Key Mitigation Measures Roadmap

Volume E – 3.2 – Outline CEMP

Volume F – 5.1 – CHP Statement

Volume G – Air Quality Appendix

6.1 – Air Quality Cumulative Modelling
6.2 – Cumulative Dispersion Modelling Inputs
6.3 – Cumulative Impacts

Volume H – Noise Appendices

7.1 – Noise Terminology
7.2 – Detailed Noise Survey Results
7.3 Operational Plant Noise Impact Assessment

Volume I – Ecology Appendices

8.1 – Phase 1 Habitat Survey
8.2 – Invertebrate Survey
8.3 – Great Crested Newt and Reptile Survey
8.4 – Breeding Bird Survey
8.5 – Bats, Otter, Water Vole and Badger Surveys

Volume J – Ground Conditions Appendices

10.1 – Phase 1 Ground Condition Assessment

Volume K – LVIA Appendices

11.1 – Landscape and Visual Impact Assessment Tables
11.2 – Outline Lighting Strategy
11.3 – Landscape and Ecology Mitigation and Management Strategy

Volume L – 12.1 – Transport Assessment

Volume M – Historic Environment Appendices

13.1 – Archaeology Desk Based Assessment
13.2 – Setting Assessment
13.3 – Correspondence with CBC Archaeologist

Volume N – 15.1 EMF Report

Document Reference 6.3 – ES Figures

Figure 1.1 – Project Site Location

Figure 1.2 – Project Site

Figure 3.1 – Indicative Layout Generating Equipment and Electrical Connection

Figure 6.1 – Receptor Locations for Air Quality Assessment

Figure 6.2 – Predicted Annual Average NO_2 Concentration ($\mu g/m^3$)

Figure 6.3 – Predicted Annual Average 99.79^{th} Percentile NO_2 Concentration ($\mu g/m^3$)

2 Site and Project Description

2.1 Site and Surroundings

2.1.1 The Project Site is shown in ES Figure 1.2 and encompasses all elements of the Project described in Section 1.1 of this ES NTS.

2.1.2 The Power Generation Plant Site and part of the Gas Connection and Electrical Connection would be situated on land within former clay pits known as 'The Rookery'. The Rookery is situated in the Marston Vale between Milton Keynes and Bedford, approximately 3 km north-west of Ampthill, and 7 km south west of Bedford.

2.1.3 The Rookery comprises two pits: Rookery North and Rookery South. The Generating Equipment Site, Laydown Area, Short Access Road and parts of the Access Road, Gas Connection and Electrical Connections would be located within Rookery South Pit. Part of the Access Road would lie within Rookery North Pit.

2.1.4 The Gas Connection and Electrical Connection would be located within the areas identified on Figure 1.2 of the ES and would extend from Rookery South Pit into agricultural land to the south.

2.1.5 To the west of the Project Site is Marston Vale Millennium Country Park, which provides indoor and outdoor community amenities. There is a Forest Centre within the Marston Vale Millennium Country Park located just to the south of Stewartby Lake which provides the focal point for the indoor and outdoor community amenities. In addition, the Millbrook Proving Ground, a vehicle testing facility, is located to the south west of the Project Site.

2.1.6 The closest residential dwelling to the Power Generation Plant Site is South Pillinge Farm, located approximately 150m to the west of the Project Site Boundary. To the north of Green Lane and The Rookery, lies Stewartby. Other neighbouring residential areas include Houghton Conquest, approximately 1.5 km to the east; Marston Moretaine, approximately 1.2 km to the west; Stewartby, approximately 400 m to the north west, Lidlington, approximately 400 m south west and Millbrook approximately 400 m to the south of the Project Site boundary.

Low Level Restoration Scheme (LLRS)

2.1.7 The Rookery is the subject of an ongoing Low Level Restoration Scheme (LLRS) for which landowner this responsible. This was the subject of a separate planning permission and would be taking place regardless of the Applicant's proposals for the Project. The objective of the LLRS is to restore the former clay workings to low grade agriculture. This would be achieved through the restoration of The Rookery at a low level (i.e. below pre-excavation ground levels), with measures included in the restoration to enhance biodiversity and landscape. Further details of the LLRS are described in Section 3.1 of the ES.

2.2 Generating Equipment Technology

2.2.1 The Generating Equipment would provide a rated electrical output of up to 299 MW, operate as a peaking plant fired on natural gas, and could run up to a maximum of 2,250 hours in any given year, provided that the five year rolling average does not exceed 1,500 hours. Given these parameters, it has been determined that an OCGT plant is the preferred and most appropriate technology choice for the Generating Equipment for the Project. Further detail is provided in Section 3.3 and Section 3.3 of the ES and a schematic showing OCGT operation is shown below in Insert 1.

2.2.2 An 'industrial' type gas turbine would be used for the Project. This type of turbine has been selected as it is suited to generating up to 299 MW using only one unit, thereby reducing potential effects of noise, air quality and visual impacts. Additionally, they are suitable for frequent and fast start-ups, flexibility, and high-availability maintenance techniques.

2.2.3 The main equipment in an OCGT is a Gas Turbine Generator, including the following components:

- Gas turbine generator;
- Air inlet filter house;
- Air inlet duct;
- Exhaust diffuser;
- Auxiliaries including:
  - Lube oil system;
  - Air dryers;
  - Fuel gas filter package;
  - Instrument air system;
  - Compressor washing; and
  - A stack with an exhaust silencer will also be part of the OCGT.

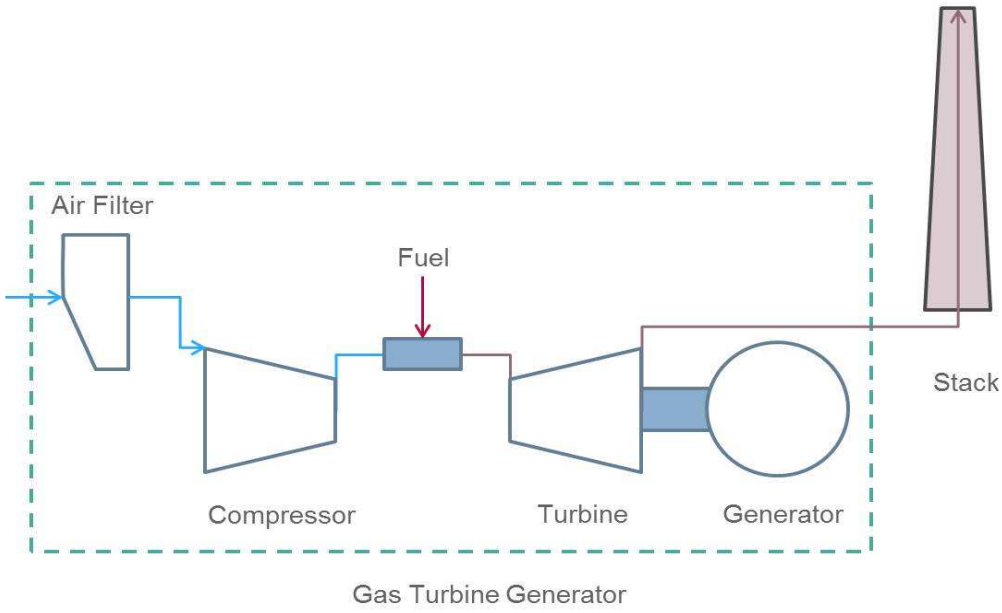
2.2.4 Air is compressed in the gas turbine and natural gas is injected. The fuel will then burn in the combustion chamber producing hot, high pressure gases. This gas expands across the blades of the gas turbine, which drives the electrical generator to produce electricity.

2.2.5 The waste gases and heat produced from this process will be released to the atmosphere via the stack.

2.2.6 A stack height sensitivity study has been undertaken for the Project which has determined that the minimum stack height for the Power Generation Plant, required for adequate dispersion of emissions and to meet legislative air quality targets is 32.5 m. The maximum stack height would be 35 m. Further information on this is provided in Chapter 6 of the ES.

2.2.7 In addition to the Gas Turbine Generator at the Generating Equipment Site, the following balance of plant and buildings will also be present and can be seen on Insert 2 below:

- Raw / Fire Water Tank: The fire water storage tank would be designed to comply with the relevant fire regulations and would be installed together with fire pumps, hose reels, fire hydrants and portable extinguishers;
- Demineralised Water Tank: Required to store demineralised water for the Generating Equipment (used for e.g. blade washing);
- Control Room / office / workshop Building: Required in order to monitor the plant operation and house plant controls;
- Gatehouse: Needed to provide security and maintain a log of site attendance, deliveries etc.;
- Electrical Transformer Compound: Required to connect the electrical infrastructure from the Generating Equipment to transformers before export to the NETS;
- Natural Gas Receiving Station: Required to ensure that gas coming from the National Transmission System feeds into the Generating Equipment Site at the right flow and pressure conditions;
- Telemetry apparatus including electrical cabinets;
- Fin-fan coolers to provide cooling to the Generating Equipment;
- Emergency Generator: a small diesel-fired generator used to safely shut down and control the Plant in the event of an outage of auxiliary power; and
- Maintenance Compound: a small area of hard standing for use during maintenance procedures.



Insert 1 – Schematic of OCGT plant

2.3 Access Road

2.3.1 An agricultural access track is already in existence at the Project Site, linking Green Lane to Rookery South Pit. The LLRS, as described in paragraph 2.1.7 includes work to build a new ramp into the Rookery South Pit itself.

2.3.2 The Covanta RRF Project (which may be developed to the north of the Generating Equipment Site) includes provision to upgrade this track further, to a tarmac road suitable for 594 traffic movements a day for the delivery of waste via HGV. Should this road be developed as part of the Covanta RRF Project prior to the development of this Project, it would be suitable to meet both the needs of the Project and the Covanta RRF Project. In this instance, there would be a requirement for a short section of new Access Road ('Short Access Road') of up to 1.4 km in length connecting the end of the Covanta RRF road to the Generating Equipment Site. References in this ES NTS to the "Access Road" mean the up to 2.2 km access road referred to below and includes the Short Access Road. References to the "Short Access Road" refer only to the approximately 1.4 km length road that MPL would construct in the event that the Covanta scheme commenced ahead of the Project. The Short Access Road would be constructed from tarmac bordered by a concrete kerb. The tarmac surface would be 6 m wide allowing for two-way traffic. It is bordered on one side by a footway.

2.3.3 However, because it is not certain when the Covanta RRF Project will be implemented, the Applicant has also included the provision of a complete Access Road from Green Lane to the Power Generating Site within this Project. If the Covanta RRF Project is not built before construction commences for the Project, then the complete Access Road would be built. This complete 2.2 km long Access Road would be constructed from tarmac bordered by a concrete kerb. The tarmacked surface would be 6 m wide allowing for two-way traffic. It

would be bordered in part on one side by a footway where there is no existing footpath.

2.3.4 The route of the Access Road from Green Lane would follow the alignment of the access road proposed within the LLRS and Covanta RRF Project along the existing access track which borders Rookery North Pit. On reaching Rookery South Pit, the Access Road (as would also be the case for the Covanta RRF Project's access road) would use the access ramp (built to agricultural standard as part of the LLRS as described below) to enter into the pit and cross through the base of the pit until it reaches the Generating Equipment Site.

2.3.5 Should the Access Road for the Project be constructed first, it would not prevent the Covanta RRF Project or other developments from progressing at a later date, although it may mean that the Access Road would be upgraded as part of the other scheme(s). The upgrade of the Access Road would be the responsibility of Covanta in the event that the permission for that scheme is implemented after any DCO for the Project.

2.4 Gas Connection

2.4.1 A new underground gas pipeline is required to connect the Generating Equipment to the existing National Transmission System to provide a reliable supply of fuel. Connection to the National Transmission System would require two above ground facilities to be installed, a minimum offtake connection facility (containing monitoring and control equipment), which would be owned by National Grid Gas, and a Pipeline Inspection Gauge launching facility (required for maintenance operations on the Pipeline) which would be owned by MPL. Together these form the above ground installation (AGI).

2.4.2 The pipeline begins at the AGI, which would allow connection into the National Transmission System Feeder 9, east of the Millbrook Proving Ground approximately 1.8 km south of the Generating Equipment Site. The Pipeline crosses a farm track which is connected to Lower Farm, National Transmission System Feeder 9, a PROW, drainage ditches, Millbrook Road and then an oil pipeline. The route then turns down into Rookery South Pit before terminating at the gas receiving facility within the Generating Equipment Site.

2.4.3 Construction of the Gas Connection would likely take place within a 50 m wide strip of land along the Gas Connection, which would be increased or decreased in size, where required (for example, decreased adjacent to nature conservation areas). It is expected that the Pipeline will be constructed using standard open-cut cross-country pipeline construction techniques (i.e. a trench). Trenchless techniques (e.g. Drilling) may be used in some locations to reduce impacts on sensitive areas or public highways.

2.5 Electrical Connection

2.5.1 A new electrical connection would be required to allow electricity generated by the Generating Equipment to be exported to the NETS. The most suitable point of connection would be a new substation (located adjacent to the Generating

Equipment within Rookery South Pit), which would connect into the existing National Grid 400 kV overhead line which runs from Sundon to Grendon. The 400 kV line is located approximately 320 m south west of the Rookery South Pit, as shown on Figure 1.2 of the ES.

2.5.2 The Electrical Connection would comprise an underground double circuit Tee-in. This would require one new tower (which will replace an existing tower and be located in the existing Grendon – Sundon transmission route corridor, thereby resulting in no net additional towers). This option would also require two SECs, one located on each side of the existing transmission line, and both circuits would then be connected via underground cables approximately 500 metres in length to a new substation (the 'Substation'). In conjunction with the construction of the Electrical Connection a temporary diversion of the existing 400 kV line located adjacent to the three most westerly existing transmission towers within the Project Site will be required. It is anticipated that the temporary diversion is likely to be constructed as a single circuit outage of the existing 400 kV line. The circuit is likely to comprise one temporary tower(s), being approximately up to 55 m high. The temporary works may also include the temporary erection of scaffolding over Station Lane.

2.5.3 Access for the purposes of installing and dismantling the temporary diversion would be as described for the Electrical Connection above. At this stage, it is anticipated that the installing and dismantling of the temporary works may require a closure of Station Lane for a number of hours and that the temporary diversion of the existing 400 kV line would be in place for approximately five months.

2.5.4 Insert 2 below shows a 3D visualisation of an indicative layout of the Project.

Insert 2 – Indicative 3D Visualisation of Project Site

2.5.5 The Power Generation Plant would be designed to have an operational life of approximately 25 years, after which time it will be decommissioned or re-powered depending on the nature of the electricity market and energy mix at the time. The Electrical Connection, AGI and respective cables and pipelines will be designed to be operational for the life of the Power Generation Plant. For the purposes of the EIA, it has been assumed that all these elements will be decommissioned at the end of the operational life of the Power Generation Plant, whenever that may be.

2.6 Alternatives

Sites

2.6.1 The site selection process considered a range of factors, in accordance with Section 4.4 (Alternatives) of NPS EN-1 and Section 2.2 (Factors influencing site selection by developers) of NPS EN-2. This process included the following main phases, in order to identify a number of potential sites and refine this set of sites through increasingly detailed selection criteria:

- Identification of a large number of potential sites across the UK through existing data sources;
- Refinement of this set of sites, driven mainly by the need for electrical generation capacity to be located as closely as possible to the main sources of demand in the UK;
- Further refinement based on the layout of the electricity and gas transmission networks in the UK, to ensure proximity to these networks; and
- Assessment of the remaining sites based on technical, environmental and economic factors, as well as consideration of whether or not a proposed Project would be in accordance with local planning policy.

2.6.2 Based on these factors, the Project Site was considered suitable for the following reasons:

- Close proximity to the National Transmission System;
- Close proximity to a suitable electrical connection (400 kV overhead line);
- The Generating Equipment Site is within previously developed land, lying below ground level;
- It is within an area identified as being potentially suitable for energy infrastructure;
- It has a well-developed road network for access to the Project Site;
- The Project Site is outside of areas at risk of flooding; and

- There is adequate space to develop the Power Generation Plant and balance of plant.

2.6.3 As a result of the site selection process outlined above, Drax is bringing forward three other power generation projects through the PA 2008 process. They are: Progress Power Ltd at Eye Airfield in Suffolk (www.progresspower.co.uk): Hirwaun Power Ltd at Hirwaun in South Wales (www.hirwaunpower.co.uk): and Abergelli Power Ltd at Abergelli in South Wales (www.abergellipower.co.uk). The first two projects listed received DCOs in July 2015. It is anticipated that Abergelli Power Ltd will submit an application for its NSIP to the Planning Inspectorate in 2018.

Generating Equipment

2.6.4 Other technology choices were considered for the Generating Equipment, including Combined Cycle Gas Turbine (CCGT) plant; Reciprocating Gas Engine (RGE) plant and CHP Plant. However, OCGT is considered to be the most suitable technology choice for generating up to 299 MW as a peaking plant based on the following environmental, technical and feasibility considerations:

- Visual impact: OCGT plants require a shorter stack compared to Combined Cycle Gas Turbine (CCGT) plant and therefore are less visually intrusive in views from the surrounding environment;

- Water resources: the water requirement of a OCGT plant is significantly lower than for CCGT plants;

- Noise and available space: noise levels from a OCGT plant would typically be lower than for a Reciprocating Gas Engine (RGE) plant. A larger number of RGE units would be required at the Generating Equipment Site to generate up to 299 MW. Spatially this may not be possible;

- Financial: based on the anticipated electricity market, it is essential that the Power Generation Plant of the size proposed will be particularly cost effective, as it will be called upon to operate flexibly to balance out the National Grid and meet changing demands of customers; and

- Start-up times: OCGT plants are able to start up and shut down much quicker than similar sized CCGT plants and are, therefore, better suited to meeting variable demands.

Gas Connection

2.6.5 The Scoping Report for the Project[1] described a gas connection ‘opportunity area’, to the south of the Generating Equipment Site, in which a new gas pipeline and AGI would be developed. Since the publication of the Scoping Report, further studies refined this opportunity area such that there were two

[1] Millbrook Power Project Environmental Impact Assessment Scoping Report – May 2014

remaining Gas Connection options presented during the Phase 1 Statutory Consultation and presented in the 2014 PEIR.

2.6.6 These options were chosen as the most direct connections between the Generating Equipment Site and the National Transmission System, avoiding obstructions such as roads, large changes in elevation, waterbodies and protected sites as much as possible.

2.6.7 Based on further refinement and feedback received during the Phase 1 Statutory Consultation, this has been narrowed down further to one option as shown on Figure 1.2 of the ES and described above in Section 2.4. This option was selected because it is shorter (and therefore less expensive and less damaging to agricultural land), it also avoids crossing the midland mainline railway line.

Electrical Connection

2.6.8 The Scoping Report for the Project described an Electrical Connection opportunity area to the south of the Generating Equipment Site, in which the Electrical Connection would be developed. Following publication of the Scoping Report, further studies were undertaken to refine the available options.

2.6.9 Based on these studies, it was determined that the most suitable location for the substation is likely to be next to the Generating Equipment Site within Rookery South Pit. However, a number of options still existed on the best way to connect the substation to the NETS. These included the use of an overhead line connection requiring new pylons.

2.6.10 Following further refinement studies and feedback received during Phase 1 Statutory Consultation, it was determined that the most appropriate method of connecting into the NETS would be via underground cables and SECs.

2.6.11 As a result of further consultation in 2017, along with discussions with National Grid, the Electrical Connection was refined to one option which includes two SECs and a double circuit tee-in, as described in section 2.5 above.

3 Assessment Findings

3.1 Introduction

3.1.1 This section sets out, by topic area, a summary of the assessment of likely significant environmental effects of the Project. Further detail can be found in the ES topic chapters (6-15).

3.1.2 In accordance with Planning Act 2008 and the EIA Regulations, the EIA process for the Project incorporates the following (further detail is provided in Chapter 3 of the ES):

- Establishing, through consultation, the Scope of the EIA including obtaining a Scoping Opinion from the Secretary of State;
- Consideration of any potential technical and environmental alternatives;
- Establishing a comprehensive understanding of the existing baseline environmental conditions for the Project Site and the relevant study areas for each topic;
- Identifying the likely significant environmental impacts resulting from the Project;
- Determining how the likely significant environmental impacts can be avoided, reduced or off-set through informed design and / or further mitigation and how its benefits may be enhanced;
- Assessing the significance of the likely significant environmental impacts in conjunction with other impacts arising from the Project and those from other neighbouring developments and / or sources (in-combination and cumulative impacts); and
- Proposing options as to how any significant residual impacts will be mitigated, managed and monitored.

3.1.3 As part of the EIA for the Project, MPL requested a Scoping Opinion from the Secretary of State in June 2014, who then consulted bodies such as CBC, Natural England and the Environment Agency to agree the scope of the assessment. The formal Scoping Opinion was received in July 2014 and is included in Appendix 2.1 of the ES. Further consultation was subsequently undertaken based on the 2014 PEIR, which was issued in October 2014. This provided preliminary environmental information up to the point of the Phase 1 Statutory Consultation, based on the environmental surveys undertaken up to that point.

3.1.4 Because the DCO application for the Project was put on hold in 2015, MPL then prepared a revised PEIR and undertook a further round of statutory consultation in 2017.

3.1.5 Throughout the following sections, the terms construction, operation and decommissioning have been used. These are defined as follows:

- Construction – Construction of the Project. Depending on the final plant selection, this is anticipated to take approximately 22 months, starting 2020;
- Operation – Operation of all aspects of the Project, including maintenance. The Project is anticipated to have a lifetime of approximately 25 years; and
- Decommissioning – Removal of some plant items and site reinstatement when the Project has reached the end of its operational life. This is anticipated to take a similar time to construction.

3.1.6 The following assumptions have been made prior to and in the carrying out of the assessment:

- Embedded mitigation will be employed - namely design/standard control measures, such as working within best practice guidance, which will routinely be incorporated for the Project or for most similar projects constructed in the UK, and as such will be used to produce the initial assessment as to the likely significant effects of the Project. Embedded mitigation includes the implementation of a Construction Environmental Management Plan (CEMP), which is a document designed to ensure best practice working methods are maintained on construction sites so that any risk of causing environmental harm is minimised as far as is reasonably practicable, such as spill prevention plans, correct storage of waste and prevention of pollution to land, air and water.
- A worst case scenario for assessment has been undertaken for each topic. For the majority of topics this worst case scenario assumes one Gas Turbine Generator will be built on the Generating Equipment Site, with a stack of up to 35 m in height. For air quality and ecology, a worst case scenario has been assessed assuming that one Gas Turbine Generator will be built on the Generating Equipment Site, with a stack up to 32.5 m in height. This is because a lower stack gives rise to potentially more significant emissions. Further detail is provided in Section 6.4 and 8.4 of the ES.. All Chapters have assumed that the full length Access Road will be built out.
- The Generating Equipment will be decommissioned and removed at the end of its operational life;
- The Gas Pipeline will be left in situ at the end of its operational life;
- The decommissioning phase will be similar in duration to the construction phase;
- The Generating Equipment would operate intermittently for up to 2,250 hours per year. This could be at any time during the year and for any length of time up to but not exceeding 2,250 hours and not exceeding 1,500 hours on a five year rolling average;

- The Power Generation Plant will have a rated electrical output of between 50 and up to 299 MW;
- Current surrounding land uses do not change, with the exception of the developments to be cumulatively assessed with the Project that have been identified as referred to in Paragraph 3.1.13 below; and
- Assessments are based on published sources of information and primary data collection.

3.1.7 The assessments consider the sensitivity of a receptor and the magnitude of impact on a receptor. The significance of the effect on the receptor is then determined. Further detail is provided in the methodology section for each environmental topic in the ES (Chapters 6 - 15). A brief summary is provided below.

3.1.8 The sensitivity of a receptor is categorised from very high (for example an internationally designated site such as a Special Area of Conservation), high (for example a nationally designated site such as a Site of Special Scientific Interest), medium (for example a regionally designated site), low (for example a locally designated nature conservation site) to negligible (no sensitivity to change). The magnitude of impact on a receptor is categorised from major, moderate, minor, negligible to no change. The significance of the effect is then determined following the method shown below:

Table 1 – Determining Significance of Effect

		Magnitude of Impact				
		No Change	***Negligible***	***Minor***	***Moderate***	***Major***
Receptor Sensitivity	***Very High***	Neutral	Slight	Moderate	Large	Very Large
	High	Neutral	Slight	Moderate	Large	Large
	Medium	Neutral	Slight	Slight	Moderate	Large
	Low	Neutral	Slight	Slight	Slight	Moderate
	Negligible	Neutral	Neutral	Neutral	Neutral	Neutral

3.1.9 Unless otherwise stated, effects of moderate significance or above are considered to be significant for the purposes of the EIA Regulations.

3.1.10 The following topic chapters are covered by this assessment:

- 6 - Air Quality;
- 7 - Noise;
- 8 - Ecology;
- 9 - Water Quality and Resources;
- 10 - Ground Conditions;
- 11 - Landscape and Visual Impacts;
- 12 - Traffic and Transport;
- 13 - Historic Environment;
- 14 - Socio-economics; and
- 15 - Other topics considered, including waste and electromagnetic fields (EMF).

3.1.11 Schedule 4, Part 1 (para 20) of the EIA Regulations requires an ES to include "....a description of the likely significant effects of the development on the environment, which should cover.....cumulative effects".

3.1.12 For the assessment of cumulative effects, the effects of the Project, together with other major developments that are proposed or consented but not yet built have been assessed.

3.1.13 The developments which have been included in the assessment of cumulative effects comprise:

- Covanta RRF Project to the north of the Generating Equipment Site - immediately adjacent to Generating Equipment Site;
- Integrated Waste Management Operations at Rookery South, Bedfordshire – immediately adjacent to Generating Equipment Site;
- Phase 2 of the East-West Rail Scheme, approximately 50 m west of the Electrical Connection;
- Land at Moreteyne Farm at Wood End in Marston Moretaine proposed for residential properties – approximately 2 km west of the Project Site;
- Land at Warren Farm on Flitwick Road in Ampthill proposed for residential properties – approximately 3.5 km south of Gas Connection AGI;
- New settlement at Wixams (under construction) – approximately 5km north east of closest point of Access Road;

- Land off Marston Road, Lidlington – proposed residential development of 31 dwellings - approximately 2km west of Electrical Connection;
- Land opposite The Lane & Lombard Street, East of Marston Road, Lidlington – proposed residential development of 40 dwellings approximately 2km west of Electrical Connection;
- Lower Shelton Road, Marston Moretaine - proposed residential development of 15 dwellings approximately 4km north of Access Road;
- Land East of Ampthill Road and North of Bedford Road, Houghton Conquest - proposed mixed use development including 650 dwellings, park, sports pitches and education use approximately 4km north-east of Generating Facility;
- Land east of Duck End Lane, Wilstead – up to 250 dwellings approximately 5km north-east of Access Road;
- Land off Chapel End Road, Houghton Conquest – proposed residential development of 125 dwellings approximately 4km north-east of Generating Facility;
- Land South of Fields Road and East of Cranfield Road, Wootton – proposed residential development of 600 dwellings – approximately 5km north of Access Road.
- Land at the former Fullers Earth Quarry, Ampthill Road, Clophill – 50 dwellings approximately 6km south-east of Gas Connection;
- Marston Vale Business Park, land south of Fields Road, Wootton – commercial/retail approximately 6km north of Access Road;
- Kiln Road, Kempston Hardwick – B1 office building and auction hall approximately 7km north of Access Road;
- Land to the West of Mill Road, Cranfield - residential development of 230 units approximately 7km west of Generating Equipment Site;
- Chantry Avenue, Kempston – redevelopment to provide 52 dwellings approximately 8km north of Access Road;
- Cemetery Road, Kempston – construction of 55 dwellings approximately 8km north of Access Road;
- Four Winds Industrial Estate, West End, Haynes, Bedford, MK45 3QT - Redevelopment and expansion of waste transfer station and materials recycling facility approximately 6km south-east of Gas Connection;
- Land East of Anglia Way, Great Denham – 48 dwellings and associated infrastructure approximately 7km north of Access Road;

- Brogborough Landfill 11kV compound – Reinstatement of two engines to generate 2.3MW of energy using natural gas, and associated infrastructure approximately 7 km south-west of Power Generation Plant Site;

- Brogborough Landfill 33kV compound – Conversion of 10 landfill gas powered engines (either by refurbishment or replacement) to natural gas powered engines, plus associated infrastructure (approximately 7 km south-west of Power Generation Plant Site); and

- The Brickmakers Arms PH Woburn Road Kempston – 16MW Gas fuelled electricity generating plant and associated works, Green Frog Power Ltd approximately 4.5 km north of Access Road.

3.1.14 This list has been agreed with CBC as part of pre-application consultation.

3.1.15 As part of the initial scoping of the EIA it was determined that certain topics are more likely to give rise to likely significant cumulative effects than others, based on the nature of the Project and surrounding development proposals. Therefore, certain topic assessments have focused specifically on quantitative potential cumulative effects and interactions. These topics are air quality, noise and traffic and transport.

3.2 Air Quality

Introduction

3.2.1 The construction, operation and decommissioning of the Project have the potential to affect air quality both through the generation of dust and particulate matter during the construction and decommissioning phases and the generation of stack emissions during operation.

3.2.2 A desk based assessment, together with air dispersion modelling has been carried out to assess any potential air quality effects resulting from the Project on identified human receptors within 10 km of the Project Site and ecological receptors within 2 km of the Project Site. These include properties at South Pillinge Farm, Stewartby and Houghton Conquest and Rookery Clay Pit County Wildlife Site. The assessment for this topic is provided in Chapter 6 of the ES. A brief summary is provided below.

Baseline

3.2.3 The nearest Air Quality Management Area (AQMA) to the Project Site is within Ampthill, approximately 4 km south of the Project Site. This is a specially designated area where national air quality objectives designed to protect human health are not being met or are in danger of not being met.

3.2.4 Monitored concentrations of pollutants within the 10 km of the Project Site (the study area) are presented in Section 6.6 of the ES. However, no exceedances of air quality objectives have been identified.

Construction and Decommissioning

3.2.5 The main potential effects resulting from construction and decommissioning of the Project on air quality are from dust and particulate matter generated from construction activities (e.g. excavation for new foundations, stockpiling, materials transport, excavation of the gas pipeline route and excavation for the electrical cable and SECs). There is also a small potential for effects arising from exhaust emissions from construction traffic. Potential receptors are humans and ecological sites.

3.2.6 Despite this, it is considered unlikely that levels of dust or particulate matter would be generated which would constitute a health hazard or nuisance to human or ecological receptors in the vicinity of the Project Site. Although the potential for dust generation through construction of the Project is large (given the scale of the Project Site) when taken into consideration alongside the low sensitivity of the study area (largely agricultural land, with scattered small scale residential development and the potential for bare soils during normal use) as well as the fact that the LLRS works will be responsible for the majority of site preparation, together with the nature of the Gas Turbine Generator which is such that it is largely pre-fabricated, means that risks of dust generation and deposition are low for all project elements.

3.2.7 The limited numbers of vehicle movements associated with the Project also means that there are not anticipated to be any impacts from exhaust emissions and in accordance with best practice guidance, these potential impacts were scoped out of the assessment.

3.2.8 Impacts would be minimised through implementation of a CEMP, which would incorporate appropriate dust mitigation measures such as damping down or covering of stock piles and excavations during dry and windy weather. Additionally, the majority of particulates from construction activities settle within a very short distance of the construction site. Therefore, there are expected to be no likely significant effects during construction and decommissioning on human and ecological receptors relating to dust.

Operation

3.2.9 The main potential effects arising from operation of the Project are associated with the stack emissions arising as a result of the combustion of natural gas in the Generating Equipment. Emissions from the stack which have the potential to cause impacts on human or ecological receptors are limited to Nitrous Oxides (NO_x), which can increase ground level concentrations of nitrogen dioxide (NO_2) which could impact human receptors or lead to nitrogen and acid deposition which could impact sensitive ecological habitats.

3.2.10 However, modern gas fired power plants are inherently clean and produce far lower emissions than other fossil fuel power plants (e.g. coal) when compared on an energy output basis. Emissions of NO_x are strictly limited under national and international guidelines such as the Industrial Emissions Directive (IED). Operation of the Generating Equipment will also be regulated by the

Environment Agency under an Environmental Permit, which will limit emissions in line with national guidelines.

3.2.11 Air quality modelling has shown that an appropriate stack height which will achieve adequate dispersion of NO_x to meet legislative limits and prevent any likely significant effects to identified receptors is between 32.5 m and 35 m. It is concluded that there are expected to be no likely significant effects during operation of the Generating Equipment on human or ecological receptors.

3.2.12 In terms of the Gas Connection and Electrical Connection, they will not directly generate any emissions during operation. Only very infrequent maintenance visits will take place, generating very few traffic movements. There is therefore considered to be a negligible effect on air quality from operation of the Gas Connection or Electrical Connection or from traffic emissions and these have been scoped out of the assessment.

Cumulative Effects

3.2.13 The construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13. However, most of the proposed developments are greater than 2 km from the Project Site and outside of the study area for this topic within which potentially significant effects could occur. As such it is considered that no cumulative effects are likely to arise in relation to these projects in respect of air quality.

3.2.14 The only projects listed in Paragraph 3.1.13 which are considered relevant to the cumulative effects assessment for air quality are the Integrated Waste Management Facilities proposed at Rookery South Pit and the Covanta RRF Project at Rookery South Pit.

3.2.15 The proposed Integrated Waste Management Facilities development is at an early stage and very little information is available regarding potential impacts on air quality as a result of this project. Should it go ahead it will have to consider the Project to ensure that no significant cumulative impacts will arise between it and the Project. As such, any mitigation that is needed in future in relation to cumulative effects as between this scheme and the Project would be assessed as part of (and could be secured through) the permission process for the proposed Integrated Waste Management Facilities development.

3.2.16 The ES for the Covanta RRF Project concluded that although there were potential impacts arising from air quality during construction or decommissioning from dust, the implementation of embedded mitigation measures such as adhering to a CEMP would negate any effects on air quality.

3.2.17 Similarly, potential impacts from dust deposition were identified for the Project. However, applying the embedded mitigation described in this Chapter, there are expected to be no likely significant effects arising from the construction and de-commissioning of the Project from deposition of dust either. Based on professional judgement and experience and knowledge of other schemes, there

are therefore not anticipated to be any likely significant effects from construction related dust deposition cumulatively from both projects.

3.2.18 It is concluded that, based on professional judgement, with the implementation of the embedded mitigation along with the implementation of embedded mitigation in the Covanta RRF project, no potential cumulative likely significant effects will arise in relation to dust as part of construction and decommissioning.

3.2.19 The proposed Covanta RRF project to the north of the Generating Equipment Site will release both oxides of nitrogen and carbon monoxide from the combustion process. However, the exhaust stack for the Covanta RRF will be much higher than the stack for the Project (105 m compared to 32.5 m) and therefore the location of maximum ground level concentrations will be different from those associated with the Project.

3.2.20 Modelling has been undertaken of the emissions from the Covanta RRF and the Generating Equipment together and the results are contained in Appendix 6.1 of the ES. There are not predicted exceedances of the assessment levels for human health impacts for the two plants operating together and therefore the cumulative effect is expected to be negligible and not significant.

3.2.21 It is considered that, based on professional judgement, with the implementation of the embedded mitigation described in the ES, along with the embedded mitigation in the Covanta RRF Project, no likely significant cumulative effects will arise as between the Project, the Covanta RRF Project and the other developments referred to in Paragraph 3.1.13.

Conclusions / Residual Impacts

3.2.22 No likely significant effects are anticipated on air quality, human or ecological receptors as a result of the construction, operation or decommissioning of the Project either cumulatively with other projects proposed in the vicinity or in isolation.

3.3 Noise and Vibration

Introduction

3.3.1 The construction, operation, and decommissioning of the Project all have the potential to affect local noise levels and generate vibration, which may affect sensitive receptors (e.g. residential properties) in the vicinity of the Project Site.

3.3.2 Noise surveys and noise modelling have been undertaken at the nearest noise sensitive receptors to the Project Site to assess the potential noise effects that may be caused by the Project. The assessment for this topic is provided in Chapter 7 of the ES. A brief summary is provided below.

Baseline

3.3.3 The baseline noise climate in the area of the Project Site is largely dominated by distant road traffic / railway traffic / farm traffic and animal noise. Construction

works associated with the LLRS are also ongoing which currently contribute to the background noise climate.

3.3.4 Background noise measurements were made at two residential properties deemed to be Noise Sensitive Receptors in the vicinity of the Project Site in order to determine the existing baseline noise climate (refer to the ES for further information). One of these locations was concentrated on the Power Generation Plant Site and Electrical Connection (South Pillinge Farm) and one was the closest residential property to the Gas Connection AGI (Lower Farm). These locations were agreed in consultation with CBC and are shown in Figure 7.1 of the ES.

Construction and Decommissioning

3.3.5 Construction and decommissioning activity inevitably leads to some degree of noise disturbance at locations in close proximity to these activities. Noise at the Project Site during construction and decommissioning could arise from e.g. excavation for foundations, delivery of plant, and excavation of the trenches to lay the Gas Connection and Electrical Connection. This will however be a temporary source of noise. Based on a conservative, worst case assessment, where numerous large plant items are operating simultaneously across the Project Site, the significance of the overall effect of construction and decommissioning noise from the Project is predicted to be neutral for the Power Generation Plant, slight adverse for the Electrical Connection and slight adverse for the Gas Connection (and therefore not significant in all cases).

3.3.6 For the project as a whole, the effect is predicted to be slight adverse (and therefore not significant) at all receptor locations following the implementation of embedded mitigation measures, including the implementation of a CEMP, which will include (but is not limited to) the following measures:

- All construction activities would be undertaken in accordance with the recommendations of BS 5228 ‘Noise and Vibration Control on Construction and Open Sites’ Part 1 Noise and Part 2 Vibration;
- Only plant conforming with relevant national or international standards, directives or recommendations on noise or vibrations emissions would be used;
- Construction plant will be operated and maintained appropriately, having regard to the manufacturer’s written recommendations or using other appropriate operation and maintenance programmes which reduce noise and vibration emissions; and
- All ancillary plant such as generators, compressors and pumps would be positioned so as to cause minimum noise disturbance (e.g. as far away as practicable from sensitive receptors). If necessary, temporary acoustic barriers or enclosures would be provided.

3.3.7 It is considered that there would be no likely significant effects from noise generated by construction traffic using existing local roads given that the increase in traffic flow during construction would not be significant.

3.3.8 Given the distances involved between the Project Site and sensitive receptors (over 90m away), any vibration impact (e.g. from piling activities) has been scoped out of further assessment.

Operation

3.3.9 During operation, noise disturbance could potentially occur from the rotating components of the Generating Equipment (e.g. the Gas Turbine Generator unit and cooling equipment) when operational. There may also be a limited amount of noise from the Access Road from the small number of vehicles associated with the operation of the Generating Equipment, although this will not be significant when compared to the existing traffic noise.

3.3.10 In order to predict operational noise, background noise measurements taken at the nearest sensitive residential receptors was modelled alongside noise levels predicted for typical Generating Equipment similar to that expected for the Project.

3.3.11 Calculations indicated that noise levels at the nearest sensitive residential receptors would be below the measured background noise levels and therefore, no likely significant effects are anticipated.

3.3.12 During operation, there will be small amounts of noise generated by the AGI. This may be a low ‘hum’ noise or ‘hiss’ type of noise as the AGI regulates the flow of gas from the National Transmission System to the Power Generation Plant.

3.3.13 This noise is rarely perceptible except when in very close proximity to the AGI. Given that the closest residential property is over 100 m away, it is considered that the operational noise from the Gas Connection would be neutral. Operational noise from the Gas Connection and AGI was scoped out of further assessment due to this.

3.3.14 No impacts are anticipated from operation of the Electrical Connection, given the typically imperceptible noise levels generated from an underground electrical cable. Operational noise from the Electrical Connection has therefore not been modelled as, although there will be a low level electrical hum produced at the substation this will not be perceptible at the Noise Sensitive Receptors.

Cumulative Effects

3.3.15 The construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13. However, most of the proposed developments are greater than 2km from the Project Site and outside of the study area for this topic within which potentially significant effects could occur. As such it is considered that no

cumulative effects are likely to arise in relation to these projects in respect of noise and vibration during construction, decommissioning or operation.

3.3.16 The only projects listed in Paragraph 3.1.13 which are considered relevant to the cumulative effects assessment for noise and vibration are the Integrated Waste Management Facilities proposed at Rookery South Pit and the Covanta RRF Project at Rookery South Pit.

3.3.17 The proposed Integrated Waste Management Facilities development is at an early stage and very little information is available regarding potential impacts on noise and vibration as a result of this project. Should it go ahead it will have to consider the Project to ensure that no significant cumulative impacts will arise between it and the Project. As such, any mitigation that is needed in future in relation to cumulative effects as between this scheme and the Project would be assessed as part of (and could be secured through) the permission process for the proposed Integrated Waste Management Facilities development.

3.3.18 A cumulative noise assessment has been undertaken with the Project and the Covanta RRF project for construction and operation, assuming that the construction and operational phases of the projects would occur simultaneously. The results of the modelling are presented in Chapter 7 of the ES. It is considered that provided the noise limits detailed within the ES are achieved no likely significant effects are likely to arise with both projects operating together.

Conclusions / Residual Effects

3.3.19 Provided that the measures and limits identified in the ES are met no likely significant effects are anticipated from noise as a result of the construction, operation and maintenance or decommissioning of the Project. These measures and limits will be secured within the CEMP and as DCO Requirements.

3.4 Ecology

Introduction

3.4.1 The construction, operation and decommissioning of the Project have the potential to affect ecological receptors (e.g. flora and fauna). The Project also has the potential to provide ecological value, for example, through the introduction of screen planting, which could provide additional habitat for some species.

3.4.2 In order to assess the potential for the Project to affect sensitive ecological receptors, desk studies and site walkover studies known as “Phase 1 habitat surveys” were undertaken.

3.4.3 Once the Phase 1 habitat surveys were completed, the resulting information obtained from them was then used to inform species specific surveys. These surveys involved field based assessments to determine the presence / absence of notable species and their population size if present.

3.4.4 Phase 2 surveys have been undertaken for the following species:

- Invertebrates;
- Great Crested Newts;
- Breeding Birds;
- Reptiles;
- Bats;
- Otters and Water Voles; and
- Badgers.

3.4.5 The study area is 10 km from the Project Site for European and nationally designated sites, 2 km for local/non-statutory designated sites and up to 1 km for desk study records of protected and notable species (extended to 10 km from the Project Site for bat species). Field surveys were undertaken in individually defined survey areas.

Baseline

3.4.6 Baseline conditions at the Generating Equipment Site comprise the Rookery South Clay Pit which forms part of the Rookery Clay Pit CWS. Part of the Access Road is located adjacent to Rookery North Pit (also a former clay pit which has been flooded). The Gas and Electrical Connections are mainly located within agricultural land interspersed with ditches, hedgerows and woodland.

3.4.7 The Extended Phase 1 surveys undertaken in both 2014 and 2017 confirmed that the base of the south western corner of Rookery South Pit presently comprises sparsely vegetated ground, swamp vegetation (including drying reedbeds) and bare ground.

3.4.8 Desk studies identified that there are no Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites within 10 km of the Project Site.

3.4.9 There is one SSSI within 2 km of the Project Site, Coopers Hill SSSI, which is approximately 1.4 km to the south east.

3.4.10 A further 11 non-statutory designated sites are present within 2 km of the Project Site. These include the large water bodies that dominate the base of the Marston Vale as well as woodland and grassland sites which are present both in the base and on the sides of the Marston Vale.

3.4.11 The grid references and principal reasons for designation of these sites are set out in Appendix 8.1 of the ES.

3.4.12 At the time that the Project is constructed, it is assumed that all great crested newts and reptiles will have been removed from the base of the Rookery South Pit and surrounding area as part of the translocation operation which has recently been completed. In addition, the LLRS re-profiling works will replace any terrestrial habitat currently suitable for great crested newts, reptiles, breeding birds and/or invertebrates within Rookery South Pit with clay, rendering it of negligible nature conservation value for these species.

Construction and Decommissioning

3.4.13 The potential effects on ecological receptors during the construction and decommissioning phases are likely to be from indirect noise, vibration and lighting, as well as direct disturbance of habitats or indirect impacts from pollution (e.g. silt entering watercourses). The impacts could lead to effects on habitats and species within and adjacent to the Project Site.

3.4.14 However, work is being carried out (as part of the LLRS scheme) to translocate certain ecological species, (for example, Great Crested Newts) from the Project Site so that by the time the Project starts construction, the Power Generation Plant Site will be of negligible ecological value. Furthermore, the areas where the Gas Connection and Electrical Connection would be located have been found to be of limited ecological value due to intensive agricultural practices on the land.

3.4.15 Furthermore, mitigation measures would be put in place to further limit potential impacts to ecology, including the careful timing of vegetation removal and maintaining an appropriate buffer around sensitive ecological sites during construction works. Compensatory planting and ponds would also be created as part of the Landscape and Ecology Mitigation and Management Strategy (LEMMS) for the Project (see Appendix 11.3 of the ES). Therefore, no likely significant effects are predicted as a result of construction or decommissioning of the Project.

Operation

3.4.16 During operation, the main potential effects on ecological receptors are likely to result from stack emissions impacting on sensitive ecological sites. An increase in nitrogen deposition can cause a change in plant communities. An increase in acid deposition above the critical load can cause a decrease in soil base saturation and may cause toxicity to plants.

3.4.17 However, air quality modelling (see Section 3.2 of this ES NTS and Chapter 6 of the ES) has shown that setting the stack height at between 32.5 and 35 m will not result in any impacts to sensitive ecological sites. Therefore, no likely significant effects are predicted from operation of the Project on ecological receptors on the basis that the stack will be a minimum of 32.5 m in height.

Cumulative Effects

3.4.18 The construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13. However, most of the proposed developments are greater than 2 km from the Project Site and outside of the 2 km study area for this topic within which potentially significant effects could occur. As such it is considered that no cumulative effects are likely to arise in relation to these projects in respect of ecology during construction, decommissioning or operation.

3.4.19 The only projects listed in Paragraph 3.1.13 which are considered relevant to the cumulative effects assessment for ecology are the Integrated Waste Management Facilities proposed at Rookery South Pit and the Covanta RRF Project at Rookery South Pit.

3.4.20 The proposed Integrated Waste Management Facilities development is at an early stage and very little information is available regarding potential impacts on ecology as a result of this project. Should it go ahead it will have to consider the Project to ensure that no significant cumulative impacts will arise between it and the Project. As such, any mitigation that is needed in future in relation to cumulative effects as between this scheme and the Project would be assessed as part of (and could be secured through) the permission process for the proposed Integrated Waste Management Facilities development.

3.4.21 The ES for the Covanta RRF Project concluded that there were no potential likely significant effects arising from construction, operation or decommissioning of the project on ecology.

3.4.22 The Landscape Strategy associated with the Covanta RRF has been taken into account when designing the outline LEMMS in Appendix 11.3 of the ES. All areas of planting and habitat creation proposed associated with the Covanta Scheme has been taken into account in the context of the Strategy. Where planting associated with the Covanta Project is disturbed by the Project it would be replaced or an equivalent volume planted elsewhere. This will ensure that the biodiversity enhancements proposed associated with the Covanta Scheme can still be delivered.

3.4.23 Modelling has been undertaken of the emissions from the Covanta RRF and the Generating Equipment together and the results are contained in Appendix 6.1 of the ES.

3.4.24 For the ecological features, all but one of the predicted annual mean oxides of nitrogen process contributions is insignificant, i.e. above 1% of the assessment level when the plants are operating simultaneously. In one case, (at Rookery Clay Pit CWS) there is a minor breach in annual mean oxides of nitrogen process contributions, at 1.7% of the assessment level. However, when combined with the background concentrations, no breaches of the critical level are predicted to occur and therefore the significance of effect is minor and not significant. The predicted daily mean oxides of nitrogen concentrations are not

significant in EIA terms, and when added to the background concentrations, no breaches of the daily mean critical level are predicted to occur.

3.4.25 It is considered that, based on professional judgement, with the implementation of mitigation described in the ES along with mitigation in the Covanta RRF Project, no likely significant cumulative effects will arise as between the Project, the Covanta RRF Project and the other developments referred to in Paragraph 3.1.13.

Conclusions / Residual Effects

3.4.26 Based on the assessment, no likely significant effects are anticipated on ecological receptors as a result of the construction, operation or decommissioning of the Project either cumulatively with other projects proposed in the vicinity or in isolation.

3.5 Water Quality and Resources

Introduction

3.5.1 The construction, operation and decommissioning of the Project all have the potential to affect water quality and resources, for example through introduction of pollutants and sediments to water bodies or for the Project to be impacted by flooding, or to cause flooding elsewhere.

3.5.2 It is however noted here that the Power Generation Plant would utilise air cooling, substantially reducing the need for water during operation.

3.5.3 A desk based assessment has been carried out with regards to water quality and resources. This has identified all surface water resources within the vicinity of the Project Site, as well as previous pollution incidents which may have impacted on water bodies. The potential for the Project to be impacted by flooding, or for development of the Project to result in an increased likelihood of flooding occurring elsewhere has also been fully assessed by undertaking a detailed Flood Risk Assessment including hydraulic modelling (Document Reference 5.4).

Baseline

3.5.4 The Mill Brook watercourse flows to the north and west of the Project Site, close to the western boundary of Rookery South Pit, and drains a predominantly rural catchment of approximately 4.5 km^2. It passes through a culvert beneath the Marston Vale Railway Line and ultimately outfalls to Stewartby Lake a further 400 m downstream. A tributary watercourse draining a catchment of 1.5 km^2 joins the Mill Brook to the east of South Pillinge Farm. These constitute the main watercourses in the vicinity of the Project Site and are shown in Figure 9.1 of the ES.

Construction and Decommissioning

3.5.5 The main potential impacts that may result from construction and decommissioning of the Project are contaminated material entering a surface water body or for the Generating Equipment Site to become inundated with flood water.

3.5.6 However, there are not anticipated to be any effects on the water bodies identified (see Figure 9.1 of the ES) as best practice working methods and mitigation will be employed. These mitigation measures include having appropriate spill response plans in place, the refuelling of vehicles away from watercourses, and the siting of stockpiles and materials away from watercourses. These mitigation measures will be contained within the CEMP. The Gas Connection will need to cross two minor watercourses (drainage ditches). In order to minimise adverse effects best practice would be employed during construction of the Gas Connection to protect the water environment, in accordance with guidelines published by the Environment Agency and Internal Drainage Board. These include re-routing of drainage ditches if necessary and undertaking work at a time of year when ditches are likely to have lowest flow (e.g. summer) wherever possible.

3.5.7 It is predicted that following the implementation of embedded mitigation and best practice construction methods referred to above, any effects on water quality and resources will be negligible. Therefore, no likely significant effects are predicted as a result of construction or decommissioning of the Project.

Operation

3.5.8 During operation, the Power Generation Plant Site would be equipped with a surface water drainage system (which would tie into the drainage system developed as part of the LLRS) and a sewerage system which would feed to a septic tank, with waste tankered off site. The surface water drainage system would remove any potentially polluted runoff through the use of oil interceptors and silt traps, prior to discharge into an attenuation pond created as part of the LLRS.

3.5.9 Due to the very limited water demand of the Power Generation Plant once operational (only required for fire water tanks and cleaning the blades of the Gas Turbine Generator), all water is anticipated to be tankered to the Power Generation Plant Site and stored in water storage tanks adjacent to the administration buildings. However, there is also the possibility that MPL would connect into a mains water supply brought to the Covanta RRF project site, immediately north of the Generating Equipment Site. In either instance no surface water or groundwater abstraction would be required.

3.5.10 Any water generated during washing of turbine blades will be retained on the Power Generation Plant Site in a storage tank and subsequently tankered off-site by a licensed contractor.

3.5.11 The Project will lead to an increase in the amount of runoff from within the Power Generation Plant Site boundary due to the increase in hardstanding. However, part of the LLRS works to Rookery Pit mean that any excess surface water (e.g. from a large storm event) will be effectively managed through the construction of a new surface water drainage system, which will discharge to an attenuation pond, therefore posing no risk to the Project Site from flooding. Further details regarding the LLRS drainage strategy are provided in Section 9.6 of the ES.

3.5.12 Neither the Gas Connection nor Electrical Connection will require water during operation, nor will they have any impact on flooding or run off rates. It is anticipated that soakaway drains will surround the AGI and SECs which will effectively manage increased surface water runoff from an increased amount of hardstanding.

3.5.13 It is predicted that there will be no likely significant effects on water quality and resources during operation of the Project.

Cumulative Effects

3.5.14 The construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13. However, most of the proposed developments are greater than 2km from the Project Site and outside of the study area for this topic within which potentially significant effects could occur (1km). As such it is considered that no cumulative effects are likely to arise in relation to these projects in respect of water quality and resources during construction, decommissioning or operation.

3.5.15 The only projects listed in Paragraph 3.1.13 which are considered relevant to the cumulative effects assessment for water quality and resources are the Integrated Waste Management Facilities proposed at Rookery South Pit and the Covanta RRF Project at Rookery South Pit.

3.5.16 The proposed Integrated Waste Management Facilities development is at an early stage and very little information is available regarding potential impacts on water quality and resources as a result of this project. Should it go ahead it will have to consider the Project to ensure that no significant cumulative impacts will arise between it and the Project. As such, any mitigation that is needed in future in relation to cumulative effects as between this scheme and the Project would be assessed as part of (and could be secured through) the permission process for the proposed Integrated Waste Management Facilities development.

3.5.17 The ES for the Covanta RRF Project concluded that there were no potential impacts arising from construction, operation or decommissioning of the project on water quality and resources.

3.5.18 It is considered that, based on professional judgement, with the implementation of the embedded mitigation described in the ES along with the embedded mitigation in the Covanta RRF Project, no likely significant cumulative effects will arise between the Project, the Covanta RRF Project and the other

developments referred to in Paragraph 3.1.13 in respect of water quality and resources.

Conclusions / Residual Effects

3.5.19 Based on the assessment, no likely significant effects are anticipated on water quality and resources or from flooding as a result of the construction, operation or decommissioning of the Project either cumulatively with other projects proposed in the vicinity or in isolation.

3.6 Ground Conditions

Introduction

3.6.1 The construction, operation and decommissioning of the Project have the potential to affect ground conditions, for example, the removal of agricultural land or from contamination (existing or created) impacting on human health and other sensitive receptors.

3.6.2 A desk based assessment has been carried out to assess the baseline geology and ground conditions underlying the Project Site. The assessment studied information regarding previous land uses of the Project Site and the surrounding area, the soils and geology present at the Project Site, any potential contamination issues resulting from former site uses and any potential ground stability hazards. Groundwater monitoring was also undertaken to establish groundwater quality in the study area (1km from Project Site) and previous site investigations were also studied to assess ground conditions.

Baseline

3.6.3 Baseline conditions at the Power Generation Plant Site comprise the Rookery South former clay extraction pit. The Gas and Electrical Connections are mainly located within agricultural land to the south of the pit interspersed with ditches, hedgerows and woodland.

3.6.4 The geological sequence underlying the Project Site broadly comprises the Oxford Clay formation overlying the Kellaways Formation (sand and clays) which overlie Blisworth clay and limestone. Superficial deposits of alluvium have also been recorded across the Project Site. There are no significant groundwater bodies underlying the Project Site.

Construction and Decommissioning

3.6.5 During construction of the Power Generation Plant, the main potential impacts on ground conditions will be from;

- Disturbance of any existing contamination and therefore causing effects to receptors through the creation of pollution pathways;
- Unstable slopes associated with deep excavations or cuttings into the sides of Rookery South Pit;

- Uplift from high groundwater levels; and
- Creation of pollution incidents from e.g. spillages.

3.6.6 Further information is provided in Section 10.6 of the ES.

3.6.7 However, embedded mitigation measures such as working within best practice guidelines and adhering to a detailed CEMP will be employed to prevent any contamination or pollution incidents impacting on ground conditions. This will include having an appropriate spill response plan (should any spillage of hazardous material occur), correct re-fuelling of vehicles and plant on hardstanding and the correct storage of potentially hazardous substances in bunded storage tanks. Thus there are expected to be no likely significant effects. Furthermore, given the historical extraction of clay undertaken in the Power Generation Plant Site there are no designated geological sites or minerals or fertile agricultural land underlying the Power Generation Plant Site which could be affected or lost during construction.

3.6.8 Construction of the Gas Connection and Electrical Connection will result in the loss of a small amount of agricultural land. However, this will be a relatively narrow corridor and most effects would be temporary as the land would be re-instated. The area for the SECs and the AGI would be affected long term (for the lifetime of the Project) although these are small areas (0.32ha and 0.5ha respectively). Additionally, the land is deemed to be of moderate agricultural quality and in the case of the SECs has already been taken out of agricultural tenancy. It is therefore not anticipated that there would be a significant impact on soil resources or agricultural land as a result of the Project.

Operation

3.6.9 The assessment has highlighted the potential for high groundwater levels in Rookery South Pit, which may have the potential to result in ground heave in the base of buried structures (e.g. foundations) associated with the Generating Equipment. If it occurred, this could result in the potential for uncontrolled release of groundwaters. However, given the placement of engineered low permeability fill across the base of the Rookery South Pit as part of the LLRS, widespread heave is not expected to occur. However, this cannot be confirmed until further ground investigations have been undertaken (as described in Section 10.9 of the ES) and therefore a precautionary approach has been taken to the assessment.

3.6.10 These further assessments will form part of the additional mitigation measures required and will include Phase 2 investigations to confirm findings of Phase 1 studies to date, along with the determination of an appropriate foundation solution and a subsequent reappraisal of risk. These measures will be secured within the CEMP and as DCO Requirements. There are not expected to be any likely significant effects following the implementation of these additional mitigation measures.

Cumulative Effects

3.6.11 The construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13. However, most of the proposed developments are greater than 2km from the Project Site and outside of the study area for this topic within which potentially significant effects could occur (1km). As such it is considered that no cumulative effects are likely to arise in relation to these projects in respect of ground conditions during construction, decommissioning or operation.

3.6.12 The only projects listed in Paragraph 3.1.13 which are considered relevant to the cumulative effects assessment for ground conditions are the Integrated Waste Management Facilities proposed at Rookery South Pit and the Covanta RRF Project at Rookery South Pit.

3.6.13 The proposed Integrated Waste Management Facilities development is at an early stage and very little information is available regarding potential impacts on ground conditions as a result of this project. Should it go ahead it will have to consider the Project to ensure that no significant cumulative impacts will arise between it and the Project. As such, any mitigation that is needed in future in relation to cumulative effects as between this scheme and the Project would be assessed as part of (and could be secured through) the permission process for the proposed Integrated Waste Management Facilities development.

3.6.14 The ES for the Covanta RRF Project concluded that there were no potential impacts arising from construction, operation or decommissioning of the project on ground conditions.

3.6.15 It is considered that, based on professional judgement, with the implementation of the embedded mitigation described in the ES along with the embedded mitigation in the Covanta RRF Project, no likely significant cumulative effects will arise as between the Project, the Covanta RRF Project and the other developments referred to in Paragraph 3.1.13 in respect of ground conditions.

Conclusions / Residual Effects

3.6.16 Based on the assessment, no likely significant effects are anticipated on ground conditions as a result of construction, operation or decommissioning of the Project either cumulatively with other projects proposed in the vicinity or in isolation.

3.7 Landscape and Visual Impacts

Introduction

3.7.1 The Project has the potential to affect the landscape and people's views and visual amenity due to the processes involved in construction (e.g. ground clearance, use of large plant), operation from the introduction of new large structures into the landscape (e.g. the stack of the Generating Equipment and

SECs associated with the Electrical Connection) and decommissioning (e.g. dismantling structures, restoring land).

3.7.2 A desk based assessment and site visits have been undertaken to determine the baseline landscape character in which the Project would sit and the sensitive receptors which may be affected by the visual appearance of the Project. This study identified landscape character areas, landscape designations (such as registered parks and gardens and conservation areas), public rights of way, residential settlements and existing infrastructure.

3.7.3 Photographs were taken from a range of representative viewpoints in order to produce photographic models (photomontages) showing how the Project would look in the landscape. Key viewpoints were agreed with consultees and include, amongst others, residential areas, public rights of way and historic monuments. In line with best practice guideline, all the viewpoints are from publicly accessible locations.

Baseline

3.7.4 Baseline conditions at the Generating Equipment Site comprise the Rookery South Pit which forms part of the Rookery Clay Pit CWS. The Access Road is located adjacent to Rookery North Pit (also a former clay pit which has been flooded). The Gas and Electrical Connections are mainly located within agricultural land to the south of the pit interspersed with ditches, hedgerows and woodland.

3.7.5 Most of the Project Site lies within National Character Area 88: Bedfordshire and Cambridgeshire Claylands but the southern part of the Project Site (including, e.g. the AGI) is within National Character Area 90: Bedfordshire and Greensand Ridge.

3.7.6 There are a number of footpaths surrounding the Project Site, as well as several small groups of residential properties. Key sensitive visual receptors include Houghton House, Ampthill Park House and footpath 7 which lies within the Project Site.

Construction and Decommissioning

3.7.7 The main potential sources of landscape and visual effects during construction of the Project are earthworks, site clearance works, removal of vegetation (in the case of the Gas Connection and Electrical Connection), presence of construction traffic, the presence of construction site lighting and the temporary diversion of footpaths. Given the limited construction period (22 months) and the relatively modest construction operations, these effects are considered to be not significant in the majority of cases.

3.7.8 However, from several distant and medium distance viewpoints and a small number of local viewpoints to the south and south-east, significant visual effects are anticipated.

3.7.9 These are from:

- From Katherines Cross, Ampthill;
- Cottages near to Houghton House;
- Footpath on the outskirts of Ampthill;
- Public Footpath near Ampthill Park House;
- Marston Vale Forest Centre including the approach track;
- Marston Vale Millennium Country Park;
- Footpath within the Country Park near the railway; and
- Footpath 7, near to Vehicle Proving Ground, to the south of the Generating Equipment Site.

3.7.10 There will be also significant landscape effects on public rights of way and woodlands, trees and hedgerows during construction as footpaths will be temporarily diverted and there will be some loss of vegetation.

3.7.11 However, these effects will be temporary.

Operation

3.7.12 During operation, effects on landscape and visual amenity will result from the introduction of permanent structures, particularly the stack of the Generating Equipment, which will be the largest structure on the Power Generation Plant Site.

3.7.13 However, the Project will be largely screened from views as a large proportion is sited within the Rookery South Pit. The Project will also be viewed in the context of other industrial development such as large towers of the former Stewartby Brick Works, the existing Sundon to Grendon overhead line and towers and the wind turbine at the Millennium Country Park.

3.7.14 The stack of the Generating Equipment will be visible in some views from the south and south-east, particularly along the Greensand Ridge and from Footpath 7. However, the only significant visual effects during the operational phase will be the local viewpoints due to their proximity to the Project.

3.7.15 It is anticipated that 15 years after commencement of operation of the Project all but one of these effects will have reduced to not significant as new mitigation planting including woodland belts and hedgerows will have matured to provide effective screening.

3.7.16 Most of the significant landscape effects on public rights of way and woodlands, trees and hedgerows during the construction period will have reduced to not significant during operation. By year 15 these will have become significant benefits with the maturing of new woodland areas and hedgerows.

Cumulative Effects

3.7.17 Construction, operation or decommissioning of the Project could occur simultaneously with other projects in the vicinity of the Project Site. However, the assessment has shown that in the majority of cases there will be no significant effects on landscape or visual amenity arising from the Project during construction, operation or decommissioning alongside other planned developments.

3.7.18 However, significant effects are predicted in views from the south, particularly Footpath 7, and in views from the south-east. Should construction of other developments occur simultaneously, then a significant cumulative effect may arise. However, the implementation of appropriate mitigation will limit these effects. Furthermore, other developments would also be required to mitigate any construction effects, such as through screen planting or use of hoardings.

3.7.19 During operation, there is the potential for cumulative effects to arise from the Project together with other planned developments. The most significant of these other planned developments, from a landscape and visual impacts perspective, are anticipated to be from large scale industrial or power developments such as the Covanta Rookery RRF Project.

Conclusions

3.7.20 Based on the assessment, most of the predicted significant landscape and visual effects will occur during the construction period. Few significant effects persist into the operational period and some significant benefits are predicted with the maturing of new woodlands and hedgerows.

3.8 Traffic and Transport

Introduction

3.8.1 The construction, operation and decommissioning of the Project has the potential to affect the local transport network, through the generation of additional traffic movements to the area in the vicinity of the Project Site.

3.8.2 A desk based assessment and on-site traffic count has been carried out as part of the EIA. This identified and assessed the following:

- Pedestrian and cycle facilities;
- Public transport services including bus and rail services;
- Private transport services including parking provision;
- Highways networks and junctions;
- Road safety and collision statistics; and

- Impacts from increased traffic movements as a result of construction, operation and decommissioning of the Project.

Baseline

3.8.3 Access to the Power Generation Plant Site is proposed from the north near Stewartby via Green Lane. Green Lane links to Bedford Road and the A421 to the west, and Stewartby Way and the B530 to the east. There is a junction on Green Lane leading to an access track on the previously unexcavated land on the western side of Rookery North Pit which extends southwards into Rookery South Pit.

3.8.4 A new purpose built access road would be constructed within the Power Generation Plant Site from Green Lane to the Generating Equipment Site (the "Access Road") (should the Covanta RRF project not be constructed prior to the Project). The route of the Access Road from Green Lane would follow the existing track which borders the lake within Rookery North Pit. On reaching Rookery South Pit, the Access Road (as would also be the case for the Covanta RRF Project's access road) would use the access ramp (built to agricultural standard as part of the LLRS) to enter into the pit and cross through the base of the pit until it reaches the Generating Equipment Site. It is proposed that the 2.2 km long Access Road would be bitumen construction formed with kerbs and footway where needed, and would be approximately 6 m wide allowing for two-way traffic.

3.8.5 Should the Covanta RRF project be constructed ahead of the Project, their access road would be suitable for use for the Project together with the Covanta RRF project. However, MPL would also construct the ‘Short Access Road’ from the Covanta RRF project site to the Generating Equipment Site, Gas Connection and Electrical Connection.

3.8.6 Two access routes will be used with regard to access for the Gas Connection, depending on which part of the Gas Connection is being accessed. These access routes are shown on Figure 12.2 of the ES, and are as follows:

- through the Rookery South Pit, from the Power Generation Plant Site; or
- from the A421, northwards along the A5141, westwards then southwards for approximately 7km along the B530 (referred to variously along its route as Ampthill Road / Hardwick Road / Bedford Road / Hazelwood Lane) to Millbrook Road.

3.8.7 Two access routes will be used for construction access for the Electrical Connection, depending on which part of the Electrical Connection is being accessed. They are shown on Figure 12.2 of the ES and are as follows:

- through the Rookery South Pit, from the area of the Power Generation Plant Site; or
- from the A421, northwards along the A5141, westwards then southwards for approximately 7 km along the B530 (Ampthill Road / Hardwick Road /

Bedford Road / Hazelwood Lane) to Millbrook Road, Houghton Lane and Station Lane. The secondary access into the southern side of Rookery South Pit that is being constructed as part of the LLRS would then be used to access the Electrical Connection. One or two short spur tracks would be created to allow permanent access to the SECs from the LLRS secondary access track.

3.8.8 Any off-road site construction access would be temporary in nature, and would be removed following completion of the Access Road. In addition, any operational access requirement would have minimal and short-term ephemeral usage.

3.8.9 The Public Rights of Way (PROW) in the vicinity of the Generating Equipment Site are shown on the plan in Appendix 12.3 of the ES.

Construction and Decommissioning

3.8.10 During construction, the Power Generation Plant is anticipated to require up to 40 HGV movements and 118 car movements per day during normal construction works. Construction / decommissioning of the Gas Connection will require up to 13 HGV and 41 car movements at the construction peak, and the Electrical Connection will require approximately 9 HGV and 25 car movements.

3.8.11 The construction / decommissioning of the Project will also require the delivery / removal of large plant items such as the Gas Turbine Generator, stack, cables associated with the Electrical Connection and sections of gas pipeline. There is therefore the potential to impact on the surrounding road network through for example, temporary road closures and requirement for escort vehicles.

3.8.12 The increase in daily traffic flows on the surrounding road network has been calculated in terms of percentage increase over existing flows. The impact of these increases has then been calculated on sensitive receptors including KIimberley College, the Water Sports Club on Green Lane, footways and cyleways on Green Lane and users of footpaths and public rights of way.

3.8.13 In terms of Pedestrian Severance, Pedestrian Amenity and Fear and Intimidation the assessment has shown that all of these relatively limited-duration construction movements are generally well below the level at which changes can be perceived, and the significance of effect is therefore no greater than slight at any receptors and therefore not significant.

3.8.14 Although peak construction movements on Green Lane are anticipated to be around 125 HGVs for a short period of time (1 to 2 days), the effect of this has been calculated as slight and therefore not significant.

3.8.15 In addition, the relatively minor traffic flows associated with construction movements forecast are all below the level at which changes in road user delay or accidents and safety can be perceived or measured, and the significance of effect is therefore neutral and not significant.

3.8.16 Notwithstanding, to minimise the impact of the contractor's vehicles on local towns and villages (particularly Stewartby), the Applicant would agree a contractor's Route Management Plan at the detailed design stage of the Project, to ensure the vehicles stick to agreed access routes and avoid built up residential areas as far as reasonably practical.

3.8.17 Given these measures, together with the temporary nature of the construction phase, and the relatively few numbers of abnormal loads anticipated the effects on traffic and transport are predicted to be neutral and therefore there are predicted to be no likely significant effects during construction and decommissioning of the Project.

Operation

3.8.18 During normal operation of the Project, up to five members of staff would be working at the Generating Equipment Site at any one time. Three shifts per day are assumed, to provide 24 hour coverage. These shift changes would be timed to avoid the network peak hour i.e. morning and evening rush hours, hence the highway impact would be minimised. Additionally, there will be infrequent maintenance visits by one or two engineers.

3.8.19 During the annual maintenance of the Generating Equipment, there may be up to 40 additional staff on site for a typical maintenance period of one month. It is assumed that all these trips would all be made by car, assuming 1.6 occupants per car, as per the average Journey to Work car occupancy within the National Travel Survey. Reflecting the typical working hours on construction sites, it is assumed that majority of these movements would be made outside of the network peak. However, in order to provide a robust assessment, it has been assumed that up to 25% of these movements would occur at peak times and a further 4 HGV movements per day are assumed during maintenance.

3.8.20 Neither the Gas Connection, nor Electrical Connection will be manned. They will have very infrequent service and maintenance visits (less than 1 per week).

3.8.21 Even during the higher traffic generating periods in the short-term maintenance period, all of these operational phase movements are so low that they are well below the level at which changes can be perceived, and that they are therefore neutral and not significant.

3.8.22 Therefore, normal operation of the Project is not anticipated to have any likely significant effects on the local road network.

Cumulative Effects

3.8.23 The Construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13.

3.8.24 The projects which are considered to be of relevance to the cumulative assessment have been agreed with consultees and the traffic numbers generated by these developments have been built into predicted 'future year

growth forecasts' which set out likely traffic numbers on the local road network taking into consideration future developments proposed for the area.

3.8.25 The total cumulative traffic generation anticipated from projects included in the future year growth forecast are compared have been compared to the likely traffic generation from the Project during construction, operation and decommissioning.

3.8.26 This analysis has shown that the trip generation from other developments is significantly greater than that from the Project.

3.8.27 The small increase in traffic movements generated by the Project, together with the relatively low sensitivity of the surrounding road network, mean that the addition of the Project makes no difference to the level of effect resulting from all other developments and therefore the cumulative effect of the Project is not significant.

3.8.28 Given the proximity of the Covanta RRF project and the potential for overlapping construction and operational phases, the likely worst case potential cumulative effects would arise from the operation of Covanta RRF Project (779 vehicles) with the peak in construction of the Project (288 vehicles). The CTMP (Appendix 12.1 of Document Reference 6.2) provides for a traffic management scheme at the Green Lane level crossing taking into account Covanta RRF traffic which would limit any impacts so that they are not significant. Key to this traffic management scheme is timing of construction movements so they do not coincide with the busiest times of waste delivery for the Covanta RRF.

3.8.29 The Covanta RRF ES concluded that whilst an increase in vehicle movements along the A421 and Green Lane would result in a significant increase in terms of percentage change for HGVs, traffic levels would remain relatively low in absolute terms and as such the traffic levels were deemed to be at an acceptable level.

3.8.30 Further to this, the TA (Appendix 12.1 Document Reference 6.2) provides an assessment of potential impacts on junction capacity taking into consideration the Project cumulatively with other proposed projects in the vicinity. Junctions assessed were Green Lane / Project Access Road and Bedford Road / Green Lane. This assessment has concluded that the impact on the links is shown to be minimal and that the junctions both operate well within capacity with minimal queuing or delay.

3.8.31 Taking the above into consideration, the Project is not anticipated to give rise to any significant cumulative effects with other projects in the vicinity of the Project Site.

Conclusions / Residual Effects

3.8.32 Based on the assessment, no likely significant effects are anticipated from traffic and transport as a result of the construction, operation or decommissioning of

the Project either cumulatively with other projects proposed in the vicinity or in isolation.

3.9 Historic Environment

Introduction

3.9.1 The construction, operation and decommissioning of the Project has the potential to affect both above ground and buried archaeological assets, as well as the potential to affect the setting and appreciation of assets of Cultural Heritage importance, including, for example, surrounding Listed Buildings, Registered Parks and Gardens, Scheduled Monuments and Conservation Areas.

3.9.2 An archaeological desk based assessment and site visit were carried out as part of the archaeological assessment which identified archaeological and cultural heritage assets in the vicinity of the Project Site.

3.9.3 The full assessment for this topic is provided in Chapter 13 of the ES. A brief summary of the likely significant effects identified is provided below.

Baseline

3.9.4 The Power Generation Plant is depicted on historic maps as being agricultural fields until the 1970s when the Rookery Pits are first shown. By 1988-89 Rookery north and south were both disused. Land on which the Gas Connection and Electrical Connection will be sited has remained as undeveloped land according to the earliest historical mapping data available.

3.9.5 No significant features or structures of archaeological or historic interest have been recorded on the Bedfordshire Historical Environmental Record (HER) within the Power Generation Plant Site, representative of the fact that the majority of it is located within a former clay extraction pit.

3.9.6 A number of crop marks of possible archaeological origin have been recorded within the vicinity of the Gas Connection, although previous excavations in the area did not reveal any archaeological remains.

3.9.7 A number of cropmarks of possible archaeological origin have been recorded within the vicinity of the Electrical Connection, which relate to Romano-British remains.

3.9.8 A review of the National Heritage List for England confirmed there to be no designated heritage assets within the Power Generation Plant Site or within the Gas Connection or Electrical Connection. Tables 13.5 to 13.9 in the ES list the designated assets within the wider study area (5 km from the Project Site). They include 12 Scheduled Monuments and 22 listed buildings, 5 Conservation Areas and 1 Registered Park and Garden.

Construction and Decommissioning

3.9.9 The extent of any previous disturbance to buried archaeological remains is an important factor in assessing the potential impact of the Project.

3.9.10 Given that the Power Generation Plant Site is within formerly developed land (e.g. previously excavated Rookery clay pits) which are subject to ongoing construction works as part of the LLRS, it is likely that any archaeology would have already been removed. Therefore, the assessment has concluded that there will be no physical direct impacts on any heritage assets. The assessment has shown that no features or structures of archaeological interest have been recorded on the Bedfordshire HER within the area of the Power Generation Plant.

3.9.11 The majority of the construction works will not be visible outside of Rookery South Pit and therefore will have no impacts on the setting of any heritage assets.

3.9.12 The Access Road will have no potential impacts on designated heritage assets.

3.9.13 The Gas and Electrical Connection are in previously undeveloped agricultural land, and therefore there remains the potential for impacts on as yet undiscovered buried archaeology. Although previous archaeological investigations in the vicinity of the Gas Connections did not reveal any significant archaeology, further assessment of this area will be undertaken prior to construction in order to fully characterise the extent of any archaeological deposits at the Project Site. This will involve stripping off and recording any discovered archaeology prior to construction, thereby limiting any effects. This will also be undertaken along the route of the Electrical Connection, in the proximity of previously identified cropmarks and Roman remains.

Operation

3.9.14 During operation, the introduction of the stack associated with the Generating Equipment has the potential to have minor adverse effects on surrounding cultural heritage assets such as listed buildings. There is also the potential for intervisibility between the stack of the Generating Equipment, the SEC associated with the Electrical Connection and the AGI of the Gas Connection and up to five Scheduled Monuments. However, in all cases effects are anticipated to be no more than a slight adverse indirect effect on the setting of any of the assets, and for the majority of assets, there will be a neutral indirect effect.

Cumulative Effects

3.9.15 The Construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13. However, most of the proposed developments are greater than 2 km from the Project Site and outside of the study area for this topic within which potentially significant effects could occur. As such it is considered that no

cumulative effects are likely to arise in relation to these projects in respect of archaeology and cultural heritage during construction, decommissioning or operation.

3.9.16 The only projects listed in Paragraph 3.1.13 which are considered relevant to the cumulative effects assessment for the historic environment are the Integrated Waste Management Facilities proposed at Rookery South Pit and the Covanta RRF Project at Rookery South Pit.

3.9.17 The proposed Integrated Waste Management Facilities development is at an early stage and very little information is available regarding potential impacts on archaeology and cultural heritage as a result of this project. Should it go ahead it will have to consider the Project to ensure that no significant cumulative impacts will arise between it and the Project. As such, any mitigation that is needed in future in relation to cumulative effects as between this scheme and the Project would be assessed as part of (and could be secured through) the permission process for the proposed Integrated Waste Management Facilities development.

3.9.18 The ES for the Covanta RRF Project concluded that there were no likely significant effects arising from construction, operation or decommissioning of the project on archaeology and cultural heritage.

3.9.19 It is considered that, based on professional judgement, with the implementation of the embedded mitigation, along with the embedded mitigation in the Covanta RRF Project, cumulative and combined operational impacts with Covanta are the same nature and magnitude as the Proposed Development on its own in respect of archaeology and cultural heritage.

Conclusions / Residual Effects

3.9.20 Based on the assessment, no likely significant effects are anticipated on archaeology and cultural heritage as a result of the construction, operation or decommissioning of the Project either cumulatively with other projects proposed in the vicinity or in isolation. Further work will be undertaken to confirm the potential effects of the Gas Connection and Electrical Connection on buried archaeology prior to construction in the form of trial trenching and recording of any discovered archaeology.

3.10 Socio-economics

Introduction

3.10.1 The Project has the potential to affect the socio-economic make-up of the surrounding area due to increased investment to the local economy and labour market distortions. It also has the potential to affect community infrastructure by placing pressure on facilities used by construction workers and their families. Additionally, the Project could have potential effects on the tourism economy should it cause potential tourist to be dissuaded from visiting the area.

3.10.2 The study area's socio-economic position has been described using standard indicators. This provides a baseline from which potential impacts and effects can be assessed:

- Socio-economic/ labour market: research has been undertaken into the business and labour market structure of the local economy;
- Tourism economy: the area's visitor attraction has been profiled including: visitor attractions; visitor accommodation; tourism volume and value; and the local tourism economy;
- Community Infrastructure: an audit of community infrastructure including GP facilities, education facilities, sport and recreation facilities, pharmacies and dentists has been prepared; and
- Policy Context: planning, economic development and other relevant policy has been reviewed to identify related economic, social and regeneration objectives which the Project may affect.

3.10.3 The study areas are as follows:

- The socio-economic assessment is based on drive time catchment areas from the Project. The 'local area' is defined within a 30 minute drive time, 'wider area' within a 45 minute drive time, and 'wider region' within a 60 minute drive time.
- The tourism / recreation study area is based on a 10km radius from the Project Site.
- The community infrastructure assessment is focussed on the area defined within an approximate 5 km radius from the Project Site.

Baseline

3.10.4 The baseline socio-economic status of the local area surrounding the Project is characterised by a pattern of population increase since 2001 which is expected to continue until 2035. The area has a declining work age population with more than one fifth of the population expected to be at retirement age by 2035. This is also coupled with high economic activity which is considerably higher than the UK average. Retail work is the main employment category in the local area, and is above the national average.

3.10.5 Tourism volume and value in Central Bedfordshire recovered strongly during the period 2011 to 2013 but has decreased slightly between 2013 to 2015 and now accounts for approximately one third of Bedfordshire's tourism economy. Previously Central Bedfordshire accounted for approximately a quarter of Bedfordshire's tourism volume and value.

3.10.6 An initial audit of community facilities shows there is sufficient capacity to accommodate additional demand from construction workers.

3.10.7 The community infrastructure audit has identified:

- 17 schools within approximately 5 km of the Project Site (capacity for 1,027 pupils);
- Six GP surgeries (all accepting new patients);
- One hospital;
- Five pharmacies; and
- One library.

Construction and Decommissioning

3.10.8 The Project will have slight positive effects on the socio-economic status of the area through both employment creation and capital expenditure and worker spending in the local economy. It is anticipated that up to 122 construction workers would be required at the Project Site during peak periods at any one time. Project construction would support up to nine permanent full time equivalent construction jobs.

3.10.9 These workers would not only benefit the economy directly, but would also have knock on effects on other businesses (e.g. slight positive impact to accommodation providers in providing accommodation for temporary workers).

3.10.10 No likely significant effects are predicted on tourism and community infrastructure as a result of the Project from traffic and accessibility, noise, landscape and visual and air quality impacts, given that assessments in Chapters 12 and 6 respectively have concluded that there will be no likely significant effects arising from these areas.

Operation

3.10.11 During operation, there will be up to 5 members of staff at the Project Site. This is anticipated to bring minor beneficial effects to the area in the vicinity of the Project Site through the generation of jobs and investment of staff from e.g. spending their wages locally.

3.10.12 No likely significant impacts are predicted on tourism and community infrastructure as a result of operation of the Project from visual, noise, traffic and accessibility and air quality impacts, given that assessments in Chapters 11, 7, 12 and 6 respectively have concluded that there will be no likely significant effects arising from these areas on tourism or community assets.

Cumulative Effects

3.10.13 Construction, decommissioning and operation of the Project could occur simultaneously with other projects in the vicinity of the Project Site, as listed in Paragraph 3.1.13.

3.10.14 A total of 6,734 temporary construction jobs would be required to build nearby projects, including the Covanta RRF Project. The assessment shows that there is sufficient labour in a 60-minute drive time of the Project to build all of the cumulative projects The cumulative projects could therefore be built using labour from the Project labour market area without creating any minor labour market distortions. The projects would therefore contribute to an overall slight benefit in terms of job creation.

3.10.15 The air quality and traffic Chapters (6 and 12 respectively) conclude that there would be no significant adverse cumulative effects. Therefore, it has been concluded that cumulative impacts on tourism and recreation receptors would also be not significant during the construction/decommissioning process, especially given that there are limited tourism and recreation receptors in close proximity to the Project Site.

Conclusions / Residual Effects

3.10.16 No likely significant effects are anticipated on socio-economics as a result of the construction, operation or decommissioning of the Project in isolation or cumulatively with other projects in the vicinity. However, there are likely to be minor beneficial effects from investment and job creation at all stages of the Project.

3.11 Other Issues Considered

3.11.1 It is recognised that some of the statutory consultees have raised concerns that the Project may give rise to environmental impacts over and above those described in this ES NTS. Specifically, it has been requested that the Applicant assesses waste arising from the Project and Electromagnetic Fields (EMF) arising from operation of the Electrical Connection.

Waste

3.11.2 As part of the construction works, there is likely to be limited potential for the generation of waste given that the LLRS will ensure that a level platform is created in the base of the Rookery South Pit on which to site the Generating Equipment. There may be small amounts of waste spoil produced from excavations for foundations, for the Pipeline associated with the Gas Connection and for the trench associated with the Electrical Connection, although it is hoped that as much of this as possible can be re-used on site.

3.11.3 The Project will operate in full accordance with the Waste Framework Directive, the EPR and the Waste (England and Wales) Regulations 2011 (where relevant). The Applicant, at all phases of the Project, will seek to apply the waste hierarchy as part of their waste prevention and management policy.

3.11.4 The waste hierarchy consists, in order of preference, of:

- Prevention;
- Re-use;

- Recycling;
- Other recovery (e.g. energy recovery); and
- Disposal.

3.11.5 A CEMP will be produced, which provides for the submission of construction method statements for approval by the local authority prior to commencement of construction, secured by a requirement attached to the DCO.

3.11.6 Measures will include, amongst others, the stockpiling of excavated spoil and testing for Waste Acceptance Criteria, to determine whether it can be re-used on- or off-site, and the testing and removal, as appropriate, of any water from de-watering activities which will be handled by a suitably licensed waste contractor.

3.11.7 In order to facilitate the implementation of the Waste Framework Directive during decommissioning, many of the structures and equipment for the proposed Project will be made of materials suitable for recycling as far as is practicable. For example, a large proportion of the buildings will be constructed of pre-fabricated steel and will therefore be of interest to scrap metal merchants.

3.11.8 Only small quantities of potentially hazardous waste will be stored on the Project Site at any time, and any such substances will be held in secured containers to prevent contaminant migration. Closed storage facilities or suitable dampening techniques will be utilised within the Project where emissions of dust etc. from waste are possible. All mitigation measures will be in full accordance with industry good practices.

3.11.9 The CEMP will ensure that all construction waste will be dealt with in a manner that complies with relevant legislation and (upon leaving the Project Site) waste will be treated and disposed of by suitably licensed contractors. Where hazardous waste is transported from the Project Site, it will be handled in accordance with relevant regulations, and, where necessary, be transported in sealed tankers.

3.11.10 During operation a feature of the Gas Turbine Generator technology to be incorporated in the Project is that waste generated should be minimal and will be restricted to the following:

- General office wastes;
- Used air intake filters (typically replaced annually);
- Used ion exchange resins or used membranes (typically replaced every 5 to 10 years);
- Separated oil / sludge from oil / water separators; and
- Used oil, chemicals or chemical containers.

3.11.11 Based on the above, it can be concluded that that the Project will result in no likely significant effects with respect to waste.

Human Health

3.11.12 The potential for likely significant effects of the Project on human health relate primarily, to exposure to excessive levels of noise, pollutants released during construction or operation of the Project (to the air, water or land) as well as effects relating to EMFs.

Air Quality

3.11.13 It is considered unlikely that levels of atmospheric dust would be generated which would constitute a health hazard or nuisance to local people in the vicinity of the Project Site (Chapter 6, section 6.7). The limited numbers of vehicle movements associated with the Project means that significant effects on human health from exhaust emissions are not anticipated.

3.11.14 Air quality modelling has shown that the stack height selected for the Project of 32.5 – 35 m will achieve adequate dispersion of NOx to meet legislative limits and prevent any impacts to identified receptors. It is concluded, therefore, that there will not be any likely significant effects on human health as a result of NOx emissions during the operational phase of the Project.

Noise and Vibration

3.11.15 A numerical model has been created which assesses likely construction related noise in comparison to measured background levels of noise at the Project Site. Based on a conservative, realistic worst case assessment, where numerous large construction plant items are operating simultaneously, the likely significance of the overall effect of construction and decommissioning noise from the Power Generation Plant is predicted to be neutral at all receptor locations and therefore not significant following the implementation of embedded mitigation measures.

3.11.16 In order to predict operational noise, background noise measurements taken at nearest noise sensitive receptors were modelled alongside noise levels predicted for typical Generating Equipment similar to that expected for the Project.

3.11.17 The predicted noise levels are below the proposed significant observed adverse effect level (SOAEL). This is defined as the level at which significant health effects on receptors is likely to occur or when noise causes a material change in behaviour and/or attitude, e.g. having to keep windows closed most of the time; avoiding certain activities during periods of intrusion; potential for sleep disturbance resulting in difficulty in getting back to sleep; or quality of life diminished due to change in acoustic character of the area. There are therefore not predicted to be any likely significant effects on noise receptors.

Pollution and Contamination

3.11.18 Mitigation measures such as working within and adhering to a detailed CEMP during construction will be employed to prevent any contamination or pollution incidents impacting on ground conditions. This will include having an appropriate spill response plan, correct re-fuelling of vehicles and plant on hardstanding and the correct storage of potentially hazardous substances in bunded storage tanks. These mitigation measures will ensure that there will be no likely significant effects from pollution and contamination on human health.

3.11.19 During the operational phase, there is the potential for the contamination of surface water resulting from the flushing of silts and hydrocarbons from areas of hardstanding within the Project Site. However, such impacts would be controlled by the embedded mitigation measures implicit within the Project, comprising industry standard/best practice and measures required to ensure legislative compliance, contained within an operational environmental management plan secured through the EP. On this basis, the impact is considered to be negligible and is therefore not significant in terms of human health.

Electromagnetic Fields

3.11.20 The potential effects of electric and magnetic fields is a specialised area which relies upon extensive work of worldwide experts. UK Power developers (such as the Applicant) rely on national guidelines in accordance with Government advice to ensure that new installations consider health risks based on current knowledge. The UK's Health Protection Agency provides independent recommendations to the Government based on reviews of international study results.

3.11.21 In the absence of statutory regulations to limit the exposure of people to power-frequency electric or magnetic fields, guidelines published in 1998 by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) are adopted in the UK as recommended by the NRPB.

3.11.22 The proposed substation would be surrounded by an earthed metal fence and consequently the electric field outside of this fence due to the substation equipment it encloses would comply with ICNIRP exposure guidelines for the public.

3.11.23 There are no external electric fields associated with underground cables. Electric fields associated with underground cable are contained by the sheath of the cable itself. The public would thus not be exposed to electric fields from the proposed underground cables.

3.11.24 Some equipment within the substation would produce magnetic fields, but these fields tend to diminish rapidly with increasing distance from the equipment. Magnetic fields outside the substation due to these items of equipment are inherently compliant with public exposure limits, as discussed above.

3.11.25 The prospective magnetic field strength due to the proposed underground cables is calculated to remain below the public exposure basic restriction levels.

3.11.26 There will be a magnetic field due to the underground cable from the SECs beside the existing overhead line to the Substation. However, this will be a relatively short length of cable and given the conclusions above, there will be no impacts arising from this which could give rise to public health issues

3.11.27 A full EMF report is included with the DCO Application (Appendix 15.1 of Document Reference 6.2).

Cumulative Effects on Human Health

3.11.28 The assessment described above has shown no likely significant effects are anticipated to arise from construction of the Project on human health.

3.11.29 The DCO for the Covanta RRF Project to the north of the Generating Equipment Site included a health impact assessment (HIA). The HIA concluded that although there were potential impacts arising from construction and decommissioning of the project on human health from air quality, noise, socio-economics, traffic and visual effects, the implementation of mitigation measures precluded any impacts from the construction of the Rookery RRF.

3.11.30 The results of cumulative assessments during construction and operation in terms of air quality, noise and vibration, and pollution and contamination (ground conditions) are set out in sections 3.2, 3.3 and 3.6 respectively.

3.11.31 These assessments have concluded that there would be no likely significant cumulative effects on sensitive receptors, including human health.

Residential Amenity

3.11.32 The amenity of a property can be affected by various factors including local changes in views from the property, external noise and changes in local air quality.

3.11.33 A consideration of these potential impacts on amenity at each property lying within 0.75 km of the Project was made from the nearest public vantage point. In the case of visual effects, this included a review of aerial photography to understand the orientation of windows and gardens towards the Project Site and the degree of screening from intervening vegetation that could be taken into account when assessing the magnitude and degree of visual effect.

3.11.34 Although there is no published guidance that sets out the criteria for establishing whether or not the visual presence of a development impacts unacceptably on living conditions, the distance of 0.75 km for the consideration of potential effects has been examined at several public inquiries.

3.11.35 The visual element of the assessment identified temporary significant visual impacts would occur during construction at six viewpoints. Of these, four viewpoints (VP5, VP6, VP7 and VP15) are considered representative of

residential receptors. However, only one of these were from properties within 0.75 km of the Project Site (VP15 on a publicly accessible footpath near to South Pillinge Farm). No other residential receptors lie sufficiently close to the Project Site to experience potentially overbearing visual amenity impacts.

3.11.36 In the longer term, visual effects would be mitigated by screen planting which would take approximately 15 years.

3.11.37 For properties where a significant visual impact would be likely to occur (in EIA terms), it was concluded that the potential impact on living conditions from views would be acceptable without the benefits of mitigation planting, and would not be overbearing or oppressive. The conclusion was based on the intervening distance, the extent of screening from existing vegetation, and the orientation of views from the properties.

3.11.38 Visual impacts would be further mitigated by the proposed screen planting which would have a noticeable affect approximately five years after planting and achieve its full effect after around fifteen years.

3.11.39 In order to predict operational noise, background noise measurements taken at nearest noise sensitive receptors were modelled alongside noise levels predicted for typical Generating Equipment similar to that expected for the Project.

3.11.40 This assessment has shown that South Pillinge Farm (the nearest residential receptor), the predicted noise levelis 38 dB.

3.11.41 The predicted noise levels are therefore below the measured background levels (39dB) and below the proposed SOAEL.

3.11.42 As such, predicted noise levels from the Project to external amenity areas of residential dwellings are considered unlikely to cause annoyance.

3.11.43 Finally, in terms of Air Quality, the risk of a loss of amenity during construction at residential properties will be low due to on the embedded site mitigation measures inbuilt into the Project, and the distance from residential areas. In most cases, significant impacts are generally only seen within 20 m – 50 m of construction activities.

3.11.44 During operation of the Project, the impacts of the emissions will be imperceptible. Gas combustion does not produce any odorous compounds or particulate matter that would be visible, and will thus have no impact on local amenity.

4 Overall Conclusions

4.1.1 This ES NTS provides a background and sets the context of the Project and summarises (in non-technical language) the assessment of environmental effects from the Project.

4.1.2 It has concluded that the use of OCGT is the most appropriate technology choice for the Generating Equipment and that the Project Site is appropriate to support a project of this nature. Key features of the Project site are the close proximity to existing gas and electrical connection infrastructure.

4.1.3 The assessment of environmental effects has shown that the Project can be responsibly delivered without causing significant harm to the environment. No likely significant effects are predicted on local air quality, noise, ecology, water quality, ground conditions, traffic and transport and historic environment during the construction, operation or decommissioning phases in isolation, or cumulatively with those developments listed in Paragraph 3.1.13.

4.1.4 Minor positive effects are likely to result on the socio-economics of the area surrounding the Project Site due to an increase in workforce during all phases of the Project.

4.1.5 Based on the assessment, most of the predicted significant landscape and visual effects will occur during the construction period and are therefore of a limited duration. Few significant effects persist into the operational period and some significant benefits are predicted with the maturing of new woodlands and hedgerows.