PLANNING STATEMENT

LNG powered generators for the provision of flexible energy generation

Land at Redbrook Industrial Estate
Barugh, Barnsley
S75 1HS
(Site Four)

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APPENDICES

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1 INTRODUCTION

1.1 THE PLANNING APPLICATION

1.1.1 This planning application is submitted to Barnsley Metropolitan Borough Council, on behalf of Reliance Energy Limited in respect of a proposal for a 120m^3/49 tonne liquefied natural gas (LNG) tank and associated infrastructure for the provision of fuel for the adjacent permitted flexible energy generation facility (FlexGen) at land at Redbrook Industrial Estate, Barugh, Barnsley, S75 1HS.

1.1.2 The submission includes the following information, documents and drawings:

Documents

- Planning Application Form;
- Certificates; and
- Appendices

Drawings

- GPP/RE/B/17/01 Revision 1: Site Location Plan;
- SK21 Revision B: Proposed Site Two Layout;
- SK23 Revision C: Proposed Site Two Elevations;
- SK24: Proposed Substances Location Plan, and
- SK25: Substance Location Plan LNG Area

2 SITE INFORMATION

2.1 SITE

2.1.1 The site sits between a railway line and Whaley Road on the eastern side of Redbrook Industrial Estate, Barugh, Barnsley as shown on Drawing GPP/RE/B/17/01.

2.1.2 The site is roughly rectangular in shape, covering an area of approximately 0.5001ha.

2.1.3 The site is currently vacant, although it has been previously developed and therefore is considered brownfield land.

2.1.4 Access to the site is gained off Whaley Road.

2.1.5 Immediately to the east of the site is the Barnsley to Wakefield railway line, beyond which is open countryside.

2.1.6 To the south of the site is a concrete product manufacturing business and vacant industrial land to the south west.

2.1.7 A further 200m to the south west of the site are a number of car distributors.

2.1.8 The nearest residential properties are located off Coppice Avenue, Wilthorpe at over 325m to the south east of the site. The concrete product manufacturing business and other industrial units at Zenith Park however lie in between.

2.1.9 There is also a concrete crushing operation adjacent to the Site.

LOCAL AREA DESIGNATIONS

2.1.10 The site is not located within 5km of any Sites of Special Scientific Interest (SSSI's).

2.1.11 There are, however, Local Nature Reserves (LNR) located approximately 3.2km to the south east and 3.3km north east of the site.

2.1.12 The site is located within Flood Zone 1, which has a low risk of flooding. This categorization means that there is a less than 1 in 1000 annual probability of river or sea flooding (<0.1%).

2.1.13 There are no Public Rights of Way across the site.

PLANNING HISTORY

2.1.14 Planning permission for "*the construction and operation of gas powered generators for the provision of flexible energy generation at land at Redbrook Industrial Estate, Barugh, Barnsley, S75 1HS (Site A*)" was granted on 14th November 2017 (Ref: 2017/0615). This site sits immediately to the north west of the Application Site.

2.1.15 A second application for "*the construction and operation of a gas-powered generators for the provision of flexible energy generation at land at Redbrook Industrial Estate, Barugh, Barnsley, S75 1HS (Site B)"* was submitted but withdrawn by the Applicant before a decision could be made (Ref: 2017/0616).

2.1.16 The Site had previously benefitted from planning permission for "*use of land for crushing and screening of inert waste in the open and associated ancillary activities*" permitted on 6th December 2011 (Ref: 2011/0604). That development originally commenced in 2006.

2.1.17 A site immediately to the south of the application site is occupied by a concrete manufacturing firm. The most recent permission recorded for the site is for the "*erection of new offices and workshop for manufacture of concrete products*" granted on 14 August 2007 (Ref: 2007/0815).

2.1.18 There is limited information on the Council's web-site for the use of the land to the west and north. The most recent permission recorded is for "*Renewal of B/00/0662/DT for offices and workshop*", granted in July 2000.

2.1.19 To the west of Whaley Road an application has recently been submitted to Barnsley MBC for the "*Installation of a Short-Term Operating Reserve*" (STOR) (Reference: 2016/1180). This application was subsequently withdrawn before determination.

3 CURRENT OPERATIONS

3.1 SITE CONTEXT

3.1.1 Planning permission was granted in 14th November 2017 (Planning Reference 2017/0615) for the installation and operation of flexible energy generators utilising natural gas from the Grid as a fuel source.

3.1.2 The subsequent realisation that larger transformers were required in order to secure the operation of the permitted site (2017/0615) meant that an application under Section 73 of the Town and Country Planning Act 1990 (as amended). The application seeks a variation to Condition 2 to vary the site layout approved under planning permission 2017/0615 at land at Redbrook Industrial Estate, Barugh, Barnsley, S75 1HS and was submitted to Barnsley Metropolitan Borough Council on 25th January 2018. At the time of writing, this application is yet to be determined.

3.1.3 An application for full planning permission was submitted parallel to the Section 73 application, proposing an extension of the permitted site eastwards in order to facilitate the amendments to the site layout proposed under the Section 73 application. At the time of writing, the application is yet to be determined.

3.2 OVERVIEW

3.2.1 The permitted FlexGen facility will provide up to 20MW of electricity to the National Grid and comprises the following elements:

- 20x 1.0MW containerised gas-powered generators;
- Transformers;
- A switch room;
- Substation;
- PIR unit;
- Standby generators; and

- Gas incomers.

4 PROPOSED DEVELOPMENT

4.1 OVERVIEW

4.1.1 The Proposed Development seeks to amend the fuel source for the recently permitted FlexGen operation as well as the installation of the necessary ancillary equipment. A 120m^3/ 49 tonne LNG tank will therefore be required in order to operate the permitted FlexGen Facility.

4.1.2 It will also be necessary to install 8 vapourisers and 2 power block units, all of which will be located within a secure LNG compound as shown on Drawing SK21 Revision B: Proposed Site Two Layout. The fuel tank measures at a height of 5.4m, whilst the proposed vapourisers sit at 7.2m high as shown on SK23 Revision C: Proposed Site Two Elevations.

4.1.3 The Proposed LNG tank and ancillary infrastructure will be located to the southeast of the permitted FlexGen Facility, utilising the access road permitted under planning permission 2017/0615 for deliveries of fuel.

4.1.4 The Proposed LNG tank and associated ancillary infrastructure will be located in a standalone compound immediately southeast of the permitted FlexGen Facility. The compound is organised into a rectangular area benefitting from palisade fencing on all sides for safety and security. The Proposed LNG tank will be positioned horizontally to the northeast of the compound as shown on Drawing SK21, Revision B.

4.2 FUEL

4.2.1 Due to insufficient quantities of natural gas available from the Grid, it is proposed that the FlexGen Facility at Barugh will be operated using Liquefied Natural Gas (LNG).

4.2.2 LNG is a natural gas that has been converted to liquid form for ease of transport and storage. It is odourless, colourless, non-toxic and non-corrosive and the resultant emissions arising from burning the fuel in the generators are no different to those arising from natural gas.

4.2.3 The LNG facility will consist of a storage tank containing Liquefied Natural Gas and a number of ambient vapourisers. The vapourisers use the temperature of ambient air to convert the gas from a liquid into a gas that can be used in the engines.

4.2.4 LNG will be delivered to the Site by specialised HGV road tankers. The Site has been designed to facilitate the safe and straightforward delivery of fuel as shown on Drawing SK25:

Substance Location Plan LNG Area which provides tanker swept paths.

4.2.5 LNG is classed as a hazardous substance and therefore an application for Hazardous Substances Consent is being submitted imminently, after the advertisement period for such expires.

4.3 CONSTRUCTION

4.3.1 Construction of the proposed LNG compound will be integrated with the construction of the permitted FlexGen Facility (Planning Reference 2017/0615).

4.3.2 The construction of the FlexGen facility and the proposed LNG compound will take approximately 6-8 months and will involve the formation of a series of concrete plant bases, service trenches, an access road, fencing, CCTV and gates.

4.3.3 Local labour will be used to construct the facility and, where possible, materials will be sourced locally.

4.3.4 In order to align and integrate with the construction schedule of the permitted FlexGen facility, it is proposed that the construction of the proposed LNG compound will take place during the following hours in accordance with the conditions of the FlexGen permission:

- Monday-Friday 07:00-18:00; and
- Saturday 07:00-13:00.

4.3.5 No construction work will take place on Sundays or Bank Holidays.

4.4 OPERATIONS

4.4.1 LNG will be transported to the Site by HGV tanker with a 19-tonne capacity.

4.4.2 There will be approximately three deliveries of LNG to the site to fill the tank at the outset. Thereafter two deliveries per day are anticipated.

4.4.3 Aside from this, the only vehicles required to attend the site when the facility is operational will be those associated with security and maintenance.

4.4.4 The whole facility will be maintained 24/7 by an off-site security team through their installed

CCTV.

4.4.5 During normal operation, there will be no permanent staff as the FlexGen Facility is operated remotely by the National Grid and operators from their offices. However, engineers will visit the Site on a daily basis to check and undertake general maintenance.

4.4.6 No vehicles will be parked at the Facility overnight.

4.5 DESIGN LIFE

4.5.1 The Proposed LNG tank and associated ancillary equipment will be expected to operate for the next 25 years in order to align with the lifespan of the permitted development. After the 25 years, both the tank and associated ancillary equipment will be safely decommissioned and the land returned back to its previous use.

5 PLANNING POLICY CONTEXT

5.1 INTRODUCTION

5.1.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 states that the determination of a Planning Application must be made in accordance with the Development Plan unless material considerations indicate otherwise. In this case, the Development Plan consists of the following documents;

- Local Development Framework Core Strategy (Adopted September 2011); and
- Unitary Development Plan (Adopted December 2000).

5.1.2 Other material considerations include the National Planning Policy Framework (2012), National Planning Practice Guidance (2016) and the Overarching National Policy Statement for Energy (2011).

5.1.3 Relevant policies of the Development Plan are identified below along with the main documents that are likely to be considered material to the application.

5.2 THE DEVELOPMENT PLAN

LOCAL DEVELOPMENT FRAMEWORK CORE STRATEGY (ADOPTED SEPTEMBER 2011)

5.2.1 This document provides a spatial strategy for the future development of Barnsley up to the year 2026.

5.2.2 The Core Strategy outlines the key elements of the planning framework for Barnsley.

5.2.3 Paragraph 4.12 explains that promoting sustainable development and reducing the Borough's impact on climate change are considered to be the overarching principles of the Core Strategy. It then goes on to state that the use and development of land will be assessed against the objective of securing sustainable development within Barnsley and to meet its environmental, economic and social needs. Proposals will be supported where they deliver (inter alia);

- *Efficient use of land and infrastructure, particularly by utilising previously developed 'brownfield land';*
- *Protection or enhancement of the quality of natural assets including water, air, soil,*

minerals and biodiversity; and

- *Renewable energy generation to reduce the cause of climate change.*

5.2.4 Policy CSP1: Climate Change states that;

Development will be expected to;

- *Reduce and mitigate the impact of growth on the environment and carbon emissions;*
- *Ensure existing and new communities are resilient to climate change; and*
- *Harness the opportunities that growth, and its associated energy demands, brings to increase the efficient use of resources through sustainable construction techniques and use of renewable energy.*

We will take action to adapt to climate change by;

- *Giving preference to development of previously developed land in sustainable locations;*
- *Locating and designing development to reduce the risk of flooding;*
- *Promoting the use of sustainable drainage systems; and*
- *Promoting investment in Green Infrastructure to promote and encourage biodiversity gain.*

5.2.5 Policy CSP4: Flood Risk states that;

The extent and impact of flooding will be reduced by;

- *Not permitting new development where it would be at an unacceptable risk of flooding or would give rise to flooding elsewhere;*
- *Requiring developers with proposals in Flood Zone 2 and 3 to provide evidence of the sequential test and exception test where appropriate;*
- *Requiring Site Specific Flood Risk Assessment for proposals over in a Flood Zone 1 and all proposals in Flood Zone 2 and 3;*
- *Expecting proposals over 1000m^2 floorspace or 0.5 hectares in Flood Zone 1 to*

demonstrate how the proposal will make a positive contribution to reducing or managing flood risk.

- *Expecting all development proposals on brownfield sites to reduce surface water run off by at least 30% and development on greenfield sites to maintain or reduce existing run-off rates;*
- *Requiring development proposals to use Sustainable Drainage Systems (SUDs) in accordance with Policy CSP3;*
- *Not culverting or building over water courses and encouraging the removal of existing culverts where practicable;*
- *Using flood resilient design in areas of high flood risk.*

5.2.6 CSP6: Development that Produces Renewable Energy states that;

We will allow development that produces renewable energy as long as there are no significantly harmful effects on;

- *The character of the landscape and appearance of the area;*
- *Living conditions; biodiversity, geodiversity and water quality;*
- *Heritage assets, their setting and cultural features and areas;*
- *Highways safety; and*
- *Infrastructure including radar.*

5.2.7 CSP28: Reducing the Impact of Road Travel states that;

We will reduce the impact of road travel by;

- *Developing and implementing robust, evidence-based air quality action plans to improve air quality;*
- *Working with our sub-regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions; and*
- *Implementing measures to ensure the current road system is used efficiently.*

5.2.8 CSP30: The Historic Environment states that;

We will positively encourage the management, conservation and enjoyment of Barnsley's historic environment and make the most of heritage assets which define Barnsley's local distinctiveness.

Development which affects the historic environment and Barnsley's heritage assets and their settings will be expected to protect or improve;

- *The character and/or appearance of Conservation Areas;*
- *The character and/or appearance of Scheduled Ancient Monuments;*
- *The character and/or appearance of Listed Buildings (including any locally listed buildings or buildings of archaeological significance);*
- *Archaeological remains of local or national importance;*
- *The character and/or the appearance of historic parks and gardens and other landscapes including key views from within these landscapes.*

5.2.9 CSP 36: Biodiversity and Geodiversity states that;

Development will be expected to conserve and enhance the biodiversity and geodiversity features of the Borough by;

- *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified in Section 74 of the Countryside and Rights of Way Act 2000 and the Barnsley Biodiversity Action Plan;*
- *Maximising biodiversity and geodiversity opportunity in and around new development;*
- *Conserving and enhancing the form, local character and distinctiveness or the river corridors of the Dearne and Dove as natural floodplains and important strategic wildlife corridors.*

Development which may harm a biodiversity or geodiversity feature will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

5.2.10 CSP40: Pollution Control and Protection states that;

Development will demonstrate that it is not likely to result, directly or indirectly, in an increase in air, surface water and ground water, noise, smell, dust, vibration, light or other pollution which would unacceptably affect or cause a nuisance to the natural and built environment or to people.

Development will be expected to minimise the effects of any possible pollution and provide mitigation measures where appropriate.

5.2.11 CSP41: Development in Air Quality Management Areas states that;

Development in Air Quality Management Areas will be expected to demonstrate that it will not have a harmful effect on the health or living conditions of any future users of the development in terms of air quality (including residents, employees, visitors and customers) or that any harmful effects can be mitigated against.

We will only allow residential development in Air Quality Management Areas where the developer provides an assessment that shows living conditions will be acceptable for future residents.

We will only allow development in Air Quality Management Areas which could cause more air pollution where the developer provides an assessment that shows there will not be a significantly harmful effect on air quality.

UNITARY DEVELOPMENT PLAN (ADOPTED DECEMBER 2000)

5.2.12 The Unitary Development Plan (UDP) covers the period between 1986 and 2001 and, as such, is significantly outdated. The UDP is set to be replaced by new Local Plan however the saved policies of the UDP will remain in force until the new Local Plan is adopted.

5.2.13 The UDP is made up of two parts:

- Volume 1: Strategy, Policy and Justification - this contains borough wide development strategies and policies; and
- Volume 2: Community Areas - this contains details of allocations for housing, employment, and other land uses and specific policies for 12 community areas and is accompanied by proposals maps.

5.2.14 The Site is identified by the adopted UDP as being designated for existing employment use in accordance with Policy BA5.

5.2.15 Policy BA5 states that 'in accordance with Policy ED7, the following areas shown on the proposals map will remain in employment use'.

5.2.16 The Proposed Development is identified in BA5/3 which states that Claycliffe Industrial Estate '*is a well-established, previously allocated industrial area'* within the Barnsley Urban Area Local Plan. It is approximately 2 miles from Barnsley Town Centre. It will benefit from further improvements to communications on completion of the current programmed highway schemes between Claycliffe and Hough.

5.2.17 Policy ED7: Existing Employment Areas states that:

Areas defined on the proposals map as Employment Policy Areas will remain in employment use. Unless otherwise states in Community Area Volumes, development will normally be permitted for business, industry and storage and distribution. Other employment generating uses may also be permitted if they are compatible with adjoining uses. Class A1(Shops) and Class A2 (Financial and Professional Services) will not be permitted.

5.2.18 The Council has also consulted on a new Local Plan, which ran from 24 June to 19 August 2016. The Local Plan Publication Consultation (June 2016) document was produced to guide the future development of the borough up to the year 2033. The document follows on from the Consultation Draft Local Plan 2014 and the Additional Consultation 2015. The Council is now satisfied that it has a sound Local Plan and intends to submit this version to the Secretary of State for Communities and Local Government for examination.

5.3 OTHER MATERIAL CONSIDERATIONS

National Planning Policy Framework

5.3.1 The National Planning Policy Framework (NPPF) was adopted at the end of March 2012 and is designed to consolidate policy statements, circulars and guidance documents into a single concise document.

5.3.2 At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan making and decision taking. For plan making it means that;

- *Local Planning Authorities should positively seek opportunities to meet the development needs of their area; and*
- *Local Plans should meet objectively assessed needs, with sufficient flexibility to adapt to rapid changes, unless;*
  - *Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits when assessed against the policies in this Framework taken as a*

whole; or

- *Specific policies in this Framework indicate that development should be restricted.*

For decision-taking, this means;

- *Approving development proposals that accord with the Development Plan without delay; and*
- *Where the development plan is absent, silent or relevant policies are out of date, granting permission unless;*
  - *Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits when assessed against the policies in this Framework taken as a whole; or*
  - *Specific policies in this Framework indicate development should be restricted.*

5.3.3 The NPPF also supports the conservation and enhancement of the natural environment through the planning system. It states that the planning system should contribute to and enhance the natural and local environment by;

- *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *Recognising the wider benefits of ecosystem services;*
- *Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; and*
- *Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.*

5.3.4 It then goes on to state that;

In preparing to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least

environmental or amenity value, where consistent with other policies in this Framework.

5.3.5 This is then supported with a statement that reads;

To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that the new development is appropriate for its location. The effects (including cumulative effects) of pollution or health, the natural environment or general amenity, and the potential sensitivity of the area of proposed development to adverse effects from pollution, should be taken into account.

National Planning Practice Guidance

5.3.6 National Planning Practice Guidance supplements the NPPF offering further guidance in regard to renewable and low carbon energy.

5.3.7 The Guidance recognises the need to increase the amount of energy from renewable and low carbon technologies will help to ensure that the UK has a secure energy supply and that the planning system has an important role to play in the delivery of appropriate infrastructure to support this in locations where the local environmental impact is acceptable.

5.3.8 With regard to developments which have the potential to generate noise, the NPPG offers the following guidance:

Local Planning Authorities' plan making and decision taking should take into account of the acoustic environment and in doing so consider;

- *Whether or not a significant adverse effect is occurring or likely to occur;*
- *Whether or not an adverse effect is occurring or likely to occur; or*
- *Whether a good standard of amenity can be achieved.*

5.3.9 In line with the explanatory role of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase, wherever applicable) is or would be, above or below the significant observed adverse effect level for the given situation as noise is a complex technical issue, it may be appropriate to seek specialist assistance when applying this Policy.

Overarching National Policy Statement for Energy (EN-1)

5.3.10 The Overarching National Policy Statement for Energy (EN-1) is part of a suite of national policy statements issued by the Secretary of State for Energy and Climate Change. It sets out the Government's policy for the delivery of major energy infrastructure. EN-1 provides useful guidance on both large and small-scale energy developments. Paragraph 2.2.4 of EN-1 states

that the role of the planning system is to provide a framework which allows for the construction of the types of infrastructure in areas of need that are acceptable in planning terms.

5.3.11 In England and Wales, National Policy Statements are likely to be material considerations in decision making for applications that fall under the Town and Country Planning Act 1990 (as amended).

5.3.12 The UK has a legally binding commitment to cut greenhouse gas emissions by at least 80% by 2050, compared to 1990 levels. In order to achieve this, the Government requires significant investment in new technology, the electrification of heating, industry and transport alongside the prioritisation of sustainable bioenergy and cleaner power generation.

5.3.13 It is forecast that the demand for electricity will increase significantly over the coming decades. Factors contributing to such growth include the development of new housing and business premises and the increased use of electricity in domestic and industrial heat and transport.

5.3.14 The Statement warns that the lack of sufficiently robust electricity networks can cause, or at least contribute to, large scale interruptions and new electricity infrastructure projects have the potential to increase the reliability of the national energy supply.

5.3.15 EN-1 recognises that a flexible approach to energy generation is required to provide back-up supply for intermittent renewable energy. Paragraph 3.3.12 states that:

We need more total electricity capacity than we have now, with a larger proportion being built only or mainly to perform back-up functions.

5.3.16 Paragraph 3.3.29 states that:

The Government would like to see decentralised and community energy systems such as microgeneration make a much greater contribution to our targets of reducing carbon emissions and increasing energy security from current levels of these systems. These technologies could lead to some reduction in demand on the main generation and transition system.

5.3.17 However, the supplementary commentary highlights that the Government does not believe that such systems are ever likely to be seen as a replacement of the larger scale infrastructure but suggests that its role in a supportive and complementary capacity is invaluable in the medium to long term.

5.3.18 EN-1 recognises the role of gas in meeting the increasing demands of the UK energy market.

It states that gas is the cleanest and most reliable fossil fuel and, as such, is likely to continue to be a central part of Great Britain's energy mix during the transition to a low carbon economy.

National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)

5.3.19 The National Policy Statement for Fossil Fuels (EN-2) must be read in conjunction with EN-1. It provides specific policies in relation to energy infrastructure proposals such as gas and oil fuelled electricity generation.

5.3.20 Paragraph 3.6.8 of EN-1 covers the reduction of fossil fuel generation stations, and although this capacity is likely to be replaced by new nuclear and renewable energy generating capacity in due course, the Policy Statement clearly indicates that there must be some form of fossil fuel generating capacity in order to provide back-up for when generation from intermittent renewable energy capacity is low and aide in the transition to low carbon energy generation.

5.3.21 It goes on to state that fossil fuel power can;

Play a vital role in providing reliable electricity supplies; they can be operated flexibly in response to changes in supply and demand and provide diversity in our energy mix. They will continue to play an important role in our energy mix as the UK mix makes its transition to a low carbon economy.

Barnsley Local Plan Draft Submission 2016

5.3.22 The Draft Local Plan sets out the key elements of the planning framework for Barnsley and the approach to its long-term physical development up to 2033.

5.3.23 Draft Policy RE1: Low Carbon and Renewable Energy states that:

We will allow development that produces renewable energy as long as there are not significant harmful effects on:

- *The character of the landscape and appearance of the area;*
- *Living conditions;*
- *Biodiversity, geodiversity and water quality;*
- *Heritage assets, their settings and cultural features and areas;*
- *Key views of, from or to scenic landmarks or landscape features;*

- *Highway safety; or*
- *Infrastructure (including radar).*

In assessing effect, we consider the extent to which appropriate mitigation could reduce the effect to a less than significantly harmful effect.

Proposals must be accompanied by information that shows how the local environment will be protected and that the site will be restored when production ends.

5.3.24 Draft Policy SD1: Presumption in Favour of Sustainable Development states that:

When considering development proposals, we will take a positive approach that reflects a presumption in favour of sustainable development and in the NPPF. We will work proactively with applicants jointly to find solutions which means that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

Planning applications that accord with other relevant policies will be approved without delay, unless material considerations indicate otherwise taking into account whether:

- *Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits when assessed against the policies in the NPPF taken as a whole; or*
- *Specific policies in the framework indicate that development should be restricted.*

5.3.25 Draft Policy GD1: General Development states that:

Proposals for development will be approved if;

- *There will be no significant adverse effect on living conditions and residential amenity of existing and future residents;*
- *They are compatible with neighbouring land and will not significantly prejudice the current or future use of neighbouring land;*
- *They will not adversely affect the potential for development of a wider area of land which could otherwise be available for development and safeguards access to adjacent land;*
- *They include landscaping to provide a high-quality setting for buildings, incorporating existing landscape features and ensuring that plant species and the way they are planted, hard surfaces, boundary treatments and other features appropriately affect reflect, protect and improve the character of the local*

landscape;

- *Any adverse impact on the environment, natural resources, waste and pollution is minimised and mitigated;*
- *Adequate access and internal road layouts are provided to allow the complete development of the entire site for residential purposes, and to provide appropriate vehicular and pedestrian links throughout the site and into adjacent areas;*
- *Any drains and culverts are considered;*
- *Appropriate landscaped boundaries are provided where sires are adjacent to the open countryside;*
- *Any pylons are considered in the layout; and*
- *Existing trees that are to remain on site are considered in the layout in order to avoid overshadowing.*

5.4 ENVIRONMENTAL IMPACT ASSESSMENT

5.4.1 The Town and Country Planning (Environmental Impact Assessment) (EIA) Regulations, 2017 set out descriptors for Schedule 1 development for which an EIA is mandatory and a list of Schedule 2 developments for which an EIA may be required.

5.4.2 Schedule 1 identifies twenty different categories in which EIA is mandatory. The Proposed Development is not listed as Schedule 1 development.

5.4.3 In terms of Schedule 2 of the EIA Regulations 2017, the Proposed Development falls within subparagraph 3a as "industrial installations of the production of electricity, steam and hot water" which states that an EIA may be required should the area of land exceed the indicative threshold of 0.5ha and if the thermal output of the Proposed Development is in excess of 50MW. In this case, the Application Site area is approximately 0.5001ha and therefore sits on the indicative threshold in terms of area.

5.4.4 The basic test for the need for EIA in a particular case is the likelihood of significant adverse effects on the environment. Planning Practice Guidance states that the more environmentally sensitive the location, the more likely it is that the effects will be significant and require an assessment.

5.4.5 An assessment of the Schedule 2 criteria against the Proposed Development concluded that whilst the Proposed Development does marginally exceed the indicative threshold of 0.5ha, it does not have a thermal output that exceeds 50MW and is not located within a sensitive location. Therefore, the Proposed Development does not require an EIA.

6 PLANNING CONSIDERATIONS

6.1 INTRODUCTION

6.1.1 The starting point for the assessment of this proposal is the Development Plan. From an assessment of the pertinent Development Plan policies, and other material planning considerations, the main issues in the determination of this Planning Application are considered to be;

- Supporting National Energy Needs;
- Land Use; and
- Environmental Impacts.

6.2 SUPPORTING NATIONAL ENERGY NEEDS

6.2.1 The principle and need of decentralised, flexible energy-related development has been established through the grant of planning permission reference 2017/0615. It was considered that the development supported and complemented the existing energy supply from the National Grid by promoting the flexible generation of electricity when demand necessitates it.

6.2.2 Policy CSP6 of the Core Strategy relates to renewable energy and is supportive of development that produce renewable energy, provided that there are no unacceptable adverse environmental impacts resulting from the proposed development (environmental impacts are of the proposed development are assessed individually in Chapter 7.4 of this Planning Statement). Whilst the Proposed LNG tank and ancillary equipment do not constitute renewable energy, the use of LNG is considered to be a low carbon alternative to traditional energy sources. The nature, scale and function of the Proposed Development is intended to support the permitted FlexGen facility therefore serving as a support mechanism to the Local Distribution Network and ensure efficiency and consistency during the transition to renewable energy.

6.2.3 The proposed development is therefore entirely compliant with local and national policy as well as meeting both local and national energy needs and should be afforded significant weight in the planning balance.

6.3 LAND USE

6.3.1 The Proposed Development is located within an Employment Policy Area as identified in the adopted UDP and this is proposed to continue within the emerging Barnsley Local Plan. Policy BA5 of the adopted UDP states that land shall remain in employment use. Policy ED7 of the UDP furthers this by stating that 'development will normally be permitted for business, industry and storage and distribution'.

6.3.2 Similarly, Policy CSP19 of the Core Strategy is clear that existing employment land or land last used for employment purposes will be retained in order to safeguard existing or potential jobs.

6.3.3 The extant planning permission at the Application Site is for inert recycling (Planning Reference 2011/604) which does not fall within the Use Class Order and is considered a *sui generis* land use. This planning permission was the renewal of a 2006 planning permission, which therefore means that the principle of a *sui generis* land use at the Site has been established for over 10 years.

6.3.4 Employment uses are typically classified as B1, B2 or B8 uses. It is commonly understood that a *sui generis* use is considered to be akin to an employment use. Under this rationale, it would mean that both the inert recycling facility and the Application Site are considered employment uses for the purposes of Policy CSP19.

6.3.5 Planning permission 2017/0615 was granted on 14th November 2017 for the "*construction and operation of gas powered generators for the provision of flexible energy generation"* to the land immediate northwest of the Application Site. The granting of this permission suggests that the siting of a FlexGen Facility within existing employment land is an appropriate land use that does not in conflict with Policy ED7 of the UDP and Policy CSP19 of the adopted Core Strategy.

6.3.6 Whilst the Proposed Development occupies a separate, standalone site, the proposed LNG tank is a form of essential infrastructure directly associated with the permitted FlexGen Facility (2017/0615). Both the permitted FlexGen Facility and the Proposed Development generate employment during construction and operation. The Proposed Development will attract both direct and indirect employment at the Site through the construction phase of development. Beyond this, the Proposed Development will require routine deliveries of LNG to the facilities alongside routine security and maintenance visits for the lifetime of the operation, thereby safeguarding employment for the 25-year lifespan of the Proposed

Development.

6.3.7 The land-use acceptability of the permitted FlexGen Facility was considered appropriate for existing employment land given its ability to attract and retain employment at the site in the long-term. The Proposed Development offers the same reassurances with regards to employment and therefore is considered not considered to be in conflict with Policy CSP19 of the Core Strategy and Policy ED7 of the UDP.

6.4 ENVIRONMENTAL CONSIDERATIONS

6.4.1 Having regard to the Development Plan and the National Planning Policy Framework, the main environmental considerations regarding the proposed development are;

- Air Quality;
- Noise;
- Traffic and Transportation;
- Flood Risk;
- Landscape and Visual Impact; and
- Ecology

6.4.2 CSP6 relates to Renewable Energy and the Policy allows development that produces renewable energy providing that there are no significant adverse environmental effects on;

- The character of the landscape and appearance of the local area;
- Biodiversity, geodiversity and water quality;
- Heritage assets, their setting and cultural features;
- Highway safety; and
- Infrastructure including radar.

6.4.3 Policy RE1 of the Draft Local Plan echoes the sentiments of the CSP6 of the adopted Core Strategy. It states that the Authorities will permit development that produces renewable energy as long as there are no significant harmful effects on the environment. Whilst the Proposed Development itself does not constitute renewable energy, the provision of FlexGen

Facilities is considered supportive to the transition to a low carbon economy.

Air Quality

6.4.4 A detailed assessment has been undertaken of the potential impact on local air quality of operations to be carried out at a Flexible Generation (FlexGen) power generation facility to be installed on land within Redbrook Industrial Estate, Barnsley. An earlier report considered the potential impact on local air quality due to the operation of the natural-gas fired FlexGen Facility operating for up to 3,000 hours per year, generating up to 20MW of electricity on an 'as required' basis for supply to the Local Distribution Network which forms part of the National Grid.

6.4.5 Subsequent to the submission of the planning application for the FlexGen facility, a second application was received by Barnsley Council for a 22MW natural gas-fired power generation plant on the same industrial estate. At the request of Barnsley Council, the air quality assessment for Reliance Energy's FlexGen facility has been updated to take account of the cumulative impact of the two power generation facilities operating concurrently. It is noted that application has been withdrawn, so the assessment presents an absolute worst-case scenario.

6.4.6 The atmospheric dispersion modelling study has been carried out to assess the potential cumulative impact on local air quality due to releases of atmospheric pollutants from the exhausts of the natural gas-fired engines associated with the two power generation facilities. The assessment focussed on the impact of emissions of oxides of nitrogen (NO_x) on ambient concentrations of nitrogen dioxide (NO_2) the most significant pollutant associated with the operation of the natural gas-fired engines.

6.4.7 It should be noted that the engines specified for installation at Reliance Energy's FlexGen facility were based upon a guaranteed NO_x emission concentration of 480mg Nm^{-3} and formed the basis for the previous air quality assessment undertaken in July 2017. The cumulative impact assessment has been based upon NO_x emissions at the higher level to provide a worst-case basis for assessment.

Cumulative Air Quality Assessment

Nitrogen Dioxide

6.4.8 Figure 4-1 of the appended Air Quality Assessment shows annual NO_2 contribution contours associated with the operation of the Reliance FlexGen Facility, operating for 3,000 hours per

year.

6.4.9 Figure 4-1 shows that near to Claycliffe Road, the annual mean process contribution concentrations due to the STOR facility are in the range of 0.2 to 2.0µg m^{-3}. The figure also shows the maximum NO_2 concentration from the 2016 diffusion tube monitoring in the vicinity of this area is 32.8µg m^{-3}, measured at the kerbside at the intersection of Claycliffe Road and Barugh Lane. Residential properties along Claycliffe Road to the south east of the diffusion tube location will be exposed to lower NO_2 concentrations than the measured concentration.

Impacts Within the Orange and Red Contour Lines

6.4.10 The area enclosed by red and orange contours is limited predominantly to land within the industrial area surrounding the site and land to the north east of the railway line.

6.4.11 DEFRA guidance states that the annual mean objective only applies at locations where members of the general public might be regularly exposed for the duration of the objective averaging period and therefore, places of work are not regarded as relevant receptors for members of the public. As such, there are no relevant receptors within the red and orange lines and therefore there will be no impacts within these areas.

Impacts Within the Blue Contour Line

6.4.12 There are approximately 250 residential dwellings within the blue contour line. The maximum nitrogen concentration from monitoring in this area is 32.8µg m^{-3} which is mounted on a lamp post on the kerbside at the intersection of Claycliffe Road and Barugh Lane. The diffusion tube monitoring location is nearer to road traffic emission sources than any of the residential properties and therefore, it is reasonable to assume that roadside concentrations along Claycliffe road will be lower than this measured concentration.

6.4.13 The withdrawn STOR facility was predicted to contribute 0.2 to 1.0µg m^{-3} within Area 1. Assuming that the STOR facility was operational then maximum Predicted Environmental Concentration at any location is expected to be below 33.8µg m^{-3}. Accordingly, for residential properties nearest to Claycliffe Road that are influenced by emissions from road traffic, the Predicted Environmental Concentration may be potentially greater than 28.0µg m^{-3}. Therefore, there may be some slight adverse impacts, although most will be negligible.

6.4.14 For the residential properties to the south east away from Wilthorpe Road, where the only direct contribution to nitrogen dioxide concentrations are emissions from minor roads, the baseline concentrations can be expected to be closer to the predicted DEFRA estimated

background concentration of approximately 16µg m^{-3}. Emissions from the STOR facility will add approximately 0.2 to 1.0µg m^{-3} to the DEFRA estimated background concentration.

6.4.15 When considered cumulatively with the impact of emissions from the permitted FlexGen facility, the resulting Predicted Environmental Concentration will be well below the 28µg m^{-3} threshold and the impacts in Areas 2 and 3 will be negligible.

6.4.16 In conclusion, the impacts within the blue contour line are estimated to be between negligible and slight adverse depending on the proximity to major roads. In cases where measurements are taken close to major roads, baseline concentrations may exceed 28.0µg $m^{-3,}$ the impacts may be slight adverse, but will be negligible elsewhere.

Impacts within the Green Contour Line

6.4.17 There are a number of residential properties located within the green contour line but outside of the blue contour line.

6.4.18 Assuming the STOR facility is operational then the maximum process contribution at the residential receptors between the green and blue contour lines in around 0.5µg m^{-3}, As such, all other concentrations are expected to be below 33.3µg $m^{-3.}$

6.4.19 This falls well below the threshold for negligible impacts for the 0.2 to 0.6µg m^{-3} contour and therefore the impact of the resulting Predicted Environmental Concentrations in these areas will be negligible.

Nitrogen Dioxide: Short Term Impacts

6.4.20 Relevant locations for the short-term objectives are locations where members of the general public may spend one hour or more at least 18 times per year. Whilst the majority of the industrial estate would not satisfy this criterion, there is a café which would be considered a relevant location. There are also several car showrooms located on the industrial estate, the forecourts of which, may be considered a relevant receptor for the hourly average NO_2 AQS objective value, as members of the general public may spend extended periods of time browsing cars,

6.4.21 Baseline hourly average NO_2 concentrations within the study area, excluding the process contributions from the two power generation facilities can be represented as follows:

- Short term background concentrations in the area surrounding the two sites are

approximately 30µg m^{-3} (twice the annual mean background concentration of around 15µg $m^{-3;}$

- Short term roadside concentrations in the area are approximately 66µg m^{-3} (twice the annual mean measured concentration of approximately 32.8µg m^{-3}); and
- Short term concentrations near to the M1 Motorway are not likely to exceed 80µg m^{-3} (twice the annual mean concentration of 40µg m^{-3}) because the area is located outside the M1 Motorway.

6.4.22 Relevant receptors located within the orange band would be exposed to a >1% chance of a breach of the hourly average NO_2 AQS objective given that the baseline annual average NO_2 concentration is estimated to be approximately 15µg m^{-3} giving a Predicted Environmental Concentration of >200µg m^{-3}.

6.4.23 Relevant receptors located within the blue band would potentially be exposed to a >1% chance of a breach of hourly average NO_2 AQS objective if the baseline annual average NO_2 concentration is greater than 15µg m^{-3} but is less than 33µg m^{-3} but less than 40µg $m^{-3.}$

6.4.24 Relevant receptors located outside the green band baseline concentrations would need to be significantly elevated (annual mean >40µg m^{-3}) for there to be a risk of a breach of the hourly average NO_2 AQS objective, which is extremely unlikely.

6.4.25 The Process Contribution contours are confined predominantly to land within the industrial estate. There is an extremely low risk of a breach of the hourly average NO_2 AQS objective outside of the industrial estate.

6.4.26 Accordingly, the results from the cumulative assessment indicate that the simultaneous operation of the Reliance Energy 'FlexGen' facility and the additional STOR facility is unlikely to give rise to a breach of the hourly average NO_2 AQS objective at any sensitive location.

Conclusions

6.4.27 The results from the cumulative impact assessment can be summarised in relation to the annual average and hourly average NO_2 AQS objectives:

Annual Average NO_2 Process Contribution

6.4.28 The conclusion from the cumulative assessment of long-term air quality impacts can be

summarised as follows:

- There will be no significant effects outside of the contours shown in Figure 4-1 of the appended Air Quality Assessment.
- Within these contours, impacts will depend on the sensitivity of any receptors exposed to the additional emissions due to the FlexGen facility and STOR facility. Based upon the assessment criteria, impacts are predicted to be negligible to slight adverse with the resulting Predicted Environmental Concentrations well below the annual mean objective.

Hourly Average NO_2 Process Contribution

6.4.29 The conclusions from the cumulative assessment of short term air quality impacts can be summarised as follows:

- The results from the cumulative impact assessment indicate that there is an insignificant risk of a breach of the hourly NO_2 AQS objective at relevant receptors when both facilities are operating simultaneously.

6.4.30 The overall conclusion from the cumulative assessment is that air quality effects due to the simultaneous operation of the FlexGen facility and the STOR facility in respect to existing local emission sources will be 'not significant'. The situation without the STOR facility and with the LNG tank compound will ensure that the operational FlexGen facility will not give rise to a breach of Air Quality Regulations.

6.4.31 The results of the Air Quality Assessment render the Proposed Development as compliant with Policy CSP6 and CSP40 of the adopted Local Plan alongside RE1 of the draft Local Plan and National Planning Policy.

Noise

Introduction

6.4.32 Sol Acoustics Ltd (Sol) has been commissioned to conduct an environmental noise assessment to establish the environmental noise impact likely to be occurring on the surrounding environment from the operation of the proposed Flexible Generation Facility using liquefied natural gas (LNG). A previous assessment was carried out in respect of natural gas fired flexible generation and this is now consented. This assessment factors in the LNG compound

and associated infrastructure.

6.4.33 The purpose of this assessment is as follows:

- To identify the nearest pre-existing noise sensitive housing to the site (i.e. receptors), which are most likely to be affected by environmental noise arising from plant and/or processes associated with the Development Site during the proposed operating periods (e.g. daytime weekdays and weekends).
- To determine the prevailing daytime background noise climate at the nearest receptors (weekday and weekend periods).
- To identify all potentially significant proposed noise sources to be installed at the site and obtain suitable source noise level data.
- To calculate the resultant environmental noise contribution and impact arising at nearest noise sensitive receptors to the site as during the proposed hours of operation.
- To carry out an environmental noise assessment of the proposed development in accordance with the methodology prescribed in relevant Standards and guidance (i.e. British Standard 4142: 2014) to determine the significance of the potential environmental noise impact generated (likelihood of complaint).
- Should a significant impact be identified, determine suitable noise mitigation measures (in outline and performance specification terms) in order to control the anticipated noise emissions from the site to ensure that appropriate environmental noise levels can be achieved at the nearest (and all) noise sensitive receptors.

6.4.34 The outcome is presented in an Environmental Noise Impact Assessment (ENIA) attached as Appendix 2 to this Planning Statement.

Sensitive Receptors

6.4.35 The nearest noise sensitive premises to the Site are:

- Residential estate located on Claycliffe Road located approximately 420 metres to the west of the Site;
- Residential estate located approximately 390m to the south east of the Site

boundary.

6.4.36 The locations are set out in Figure 1 in the ENIA.

Characteristics of the FlexGen Facility

6.4.37 The purpose of the FlexGen facility is to provide reliable power to the National Grid on demand and as required.

6.4.38 The consented facility will result in the installation of 38 x 1042 kW Perkins TRS2 gas powered generators on the site. The generators would only be expected to operate between the hours of 07:00 – 23:00 but could operate 7 days a week. Condition 4 of the planning permission restricts operation to between these times.

6.4.39 The generators will now be fuelled by LNG which will be delivered to the site at a rate of around two deliveries per day.

6.4.40 In basic terms, each Generator consists of a gas engine which is to be housed within an acoustic enclosure of dimensions: 12.188 m (L) x 3.001m (W) x 2.503m (H). Intake air to the generator is provided via a roof mounted, attenuated penthouse louvre. The air outlet is proposed to be mounted on the wall of the generator enclosure. The engine exhaust is to be roof mounted, with the exhaust tailpipe at a height of 8.461m above local ground level. A single remote radiator will be mounted onto the roof of each generator in order to provide cooling for the engine.

6.4.41 The preliminary indicative general arrangement of each complete, packaged generator unit is provided in Figure 3 in the ENIA.

6.4.42 Sol have been in discussions with the manufacturer to review available noise data and agree a suitable mitigation strategy for the scheme. It should be noted that the proposed noise mitigation has been developed specifically for this scheme. Lindenberg Anlagen (LA) have confirmed that the proposed plant can be attenuated to achieve noise levels presented in Table 1.

Identified Noise Source	Sound Pressure Level, L_{Aeq} at one metre
Generator Enclosure (including Air Inlet and Outlet Louvres)	65dB
Air Inlet Penthouse Louvre	65dB
Engine Exhaust	65dB
Remote Radiator	65dB

Table 1: Assumed 1042kW Perkins TRS2 Gas Powered Generator Noise Level Data with mitigation.

6.4.43 The manufacturer has confirmed that the above is subject to a measurement tolerance of plus or minus 2dB. For the purpose of this assessment a correction of +2dB has been added to the noise levels in Table 1. Sol is satisfied, as are Barnsley Metropolitan Council, that the level and type of mitigation is achievable.

LNG Compound Data

6.4.44 Details of the proposed development are provided in Section 3 of this Statement.

6.4.45 Noise data has been supplied by Flogas Britain and is presented in Tables 2, 3 & 4 in the ENIA.

Noise Survey

6.4.46 In order to inform the assessment, an environmental noise survey was conducted by Sol between 20th and 24th April 2017. The purpose was to determine the prevailing background noise levels expected at the nearest noise sensitive premises to the Application site, for environmental noise benchmarking and assessment purposes.

6.4.47 Two environmental noise measurement positions were selected to inform the survey:

- Noise monitoring point 1: The microphone was positioned approximately 400m to the west of the Site and just to the east of residential premises on Medina Way. The microphone was installed at a height of approximately 2.4m above location ground level. The background noise levels measured at this position are considered to be representative of those expected at the residential estate on the west side of Claycliffe Road.

- Noise monitoring point 2: The microphone was positioned approximately 420m to the south east of the Site and approximately 20m just to the east of the residential premises on Coppice Avenue. The microphone was installed at a height of approximately 3 m above ground level. The background noise levels measured at

this position are considered to be representative of those expected at the residential estate off Wilthorpe Road.

6.4.48 The location of the noise monitoring positions is shown in Figure 1 in the ENIA.

6.4.49 The noise survey was carried out using Type 1 Precision Grade noise monitoring equipment, and the complete measuring systems were field calibrated immediately prior to, and following the noise survey period.

6.4.50 Meteorological data was recorded at the measurement position during the course of the noise survey. During all environmental noise measurements, the prevailing weather conditions remained favourable for the purposes of environmental noise assessment throughout the entire survey period, with a light breeze (with a mean wind speed of 1m/s) and no rain occurring. Further details of the identified weather conditions are provided in Appendix A of the ENIA.

6.4.51 Notwithstanding the weather conditions recorded, the microphone systems were entirely weatherproofed and fitted with all-weather environmental windshields, each with bird spike.

Noise Survey Results

Background Noise Climate

6.4.52 Table 5 provides a basic summary of the typical overall, A-weighted noise levels measured at the various noise monitoring locations, in LAeq and LA90 terms, as during daytime and night time periods, weekdays and weekends. The specific, measured noise levels pertinent to the BS4142 environmental noise assessment are highlighted in bold, italic text. The key observations are provided below:

Position	Date	Daytime (07:00 - 23:00)		Night Time (23:00 – 07:00)	
		dB $L_{Aeq,16hour}$	dB $L_{A90,15min}$ (Typical)	dB $L_{Aeq,8hour}$	dB $L_{A90,15min}$ (Typical)
1	Thursday 20 April 2017	62*	***48***	58	44
	Friday 21 April 2017	62	50	57	35
	Saturday 22 April 2017	63	***44***	56	35
	Sunday 23 April 2017	62	***44***	57	36
	Monday 24 April 2017	64*	58	-	-
2	Thursday 20 April 2017	48*	***43***	49	39
	Friday 21 April 2017	53	***43***	48	27
	Saturday 22 April 2017	51	***37***	48	31
	Sunday 23 April 2017	49	38	49	36
	Monday 24 April 2017	64*	48	-	-
	* Measurement not conducted for the full 16-hour assessment period				

Table 2: Summary of Typical, Measured Broadband Environmental Noise Levels.

Appendix A of the ENIA provides further information, including detailed noise time-history graphs for all the measured receptor daytime, night time, weekday and weekend background noise survey data.

Environmental Noise Impact Assessment

BS4142 Assessment Methodology and Adopted Environmental Noise Targets

6.4.53 BS 4142: 2014: Method for assessing and assessing Industrial and commercial sound (BS 4142) is intended to be used to assess noise of an industrial nature, which includes sound from fixed installations, which comprise mechanical and electrical plant and equipment.

6.4.54 The procedure contained in BS 4142 for assessing the likelihood of complaints is to compare the measured or predicted noise level from the source in question, the 'specific noise level'

immediately outside the noise sensitive premises, with the background noise level. Where the noise contains attention attracting characteristics such as tonal, impulsive, intermittent elements, it may be appropriate to apply a correction to the specific noise level to obtain the 'rating level'.

6.4.55 BS 4142 states that the significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. Typically, the greater this difference, the greater the magnitude of the likelihood of noise complaints:

- Typically, the greater this difference, the greater the likelihood of complaint.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

6.4.56 For the daytime, this assessment is carried out over a one-hour period, and over a fifteen-minute period at night. The daytime and night-time periods are defined as 07:00 to 23:00 hours and 23:00 to 07:00 hours respectively.

6.4.57 In BS4142 assessment terms, it is considered appropriate to limit the combined Rating Level from the Development Site to not exceed the typical measured weekday and weekend daytime background noise levels.

6.4.58 On this basis, and based upon the results of the environmental noise survey, the following daytime maximum permissible Rating Level limits apply at the nearest noise sensitive premises:

Measurement Positions	Residential Dwellings	Assessment Period	Maximum Permissible Rating Level Limit, dB $L_{Ar,Tr}$
1	Residential Estate on Claycliffe Road	Weekday Daytime (07:00 - 23:00)	48
		Weekend Daytime (07:00 - 23:00)	44
		Weekday Night time (07:00 - 23:00)	44
		Weekend Night time (07:00 - 23:00)	35
2	Residential estate off Wilthorpe Road and Proposed Development off Dearne Hall Road	Weekday Daytime (07:00 - 23:00)	43
		Weekend Daytime (07:00 - 23:00)	37
		Weekday Night time (07:00 - 23:00)	34
		Weekend Night time (07:00 - 23:00)	32

Table 3: Maximum Permissible Noise Rating Limits as NSR.

Methodology and Basis for the Assessment

6.4.59 In order to predict the likely resultant noise levels impinging the nearest residential receptors, 3D computer based environmental noise models were created using the DataKustik 'CadnaA' Noise Mapping software. The assumption used in the noise models are set out in Section 6 of the ENIA.

Predicted Daytime Environmental Noise Level Impact at Receptors

6.4.60 Table 4 presents the predicted cumulative specific sound level at each NSR during both the daytime and night time periods. In all cases, the noise levels have been predicted at 4m above local ground level. The corresponding noise map is provided in Appendix B of the ENIA.

6.4.61 A correction of +4 dB has been applied to the Specific Noise Level to determine the Rating Level to account for any clearly perceptible tone associated with the noise level emissions expected from the generators, the LNG compound and from LNG deliveries.

NSR	Plant source	Calculated specific noise level at NSR	
		Daytime (07:00 - 23:00), T = 1hour	Night time (23:00 – 07:00), T = 15min
Residential Estate on Claycliffe Road	Generators (including casing, exhaust, remote radiator)	32	-
	LNG Compound	14	-
	LNG Delivery	26	26
	Cumulative Specific Sound Level	**33**	**26**
Residential estate off Wilthorpe Road	Generators (including casing, exhaust, remote radiator)	32	-
	LNG Compound	17	-
	LNG Delivery	28	29
	Cumulative Specific Sound Level	**33**	**29**
Proposed residential estate off Dearne Hall Road	Generators (including casing, exhaust, remote radiator)	33	-
	LNG Compound	16	-
	LNG Delivery	26	26
	Cumulative Specific Sound Level	**33**	**26**

Table 4: Predicted Specific Sound Level at each NSR

6.4.62 Based upon the predicted specific noise level at each NSR, 5 presents the predicted overall A-weighted, BS4142-defined 'Rating Level' at the identified noise sensitive receptors during weekday and weekend daytime and night-time periods. The predicted Rating Level is compared to the existing background noise level in each instance, for each NSR.

6.4.63 A correction of +4dB has been applied to the Specific Noise Level to determine the Rating Level to account for any "clearly perceptible" tone associated with the noise level emissions expected from the generators, the LNG compound and from LNG deliveries.

6.4.64 The potential acoustic character associated with the impulsive operation of the generators has also been considered as part of the assessment, although no specific correction has been

applied. It is reasonable to suggest that the intermittent operation of individual generators is not expected to be audible when the majority/all of the other generators are operating. Given that there are 20 generators proposed, the combined noise level produced by all generators operating will be approximately 13dB higher than that produced by any individual generator, and as such the intermittent character of the noise of individual generators switching on/off is not expected to be discernible when the remainder of the generators are operating.

6.4.65 The acoustic character associated with the intermittent operation of generators could be expected to be more discernible when the majority/all of the other generators are switched off. However, in this instance, the specific noise level generated from the site would be lower and would not result in a higher noise level impact than that expected when all generators are operating. For example, applying an additional correction of +3dB for the intermittent operation of generators switching on/off but assuming that only up to, say, approximately 25% of the generators are operating (-6dB correction) would result in a lower Rating Level at the nearest noise sensitive premises than that expected when all generators are operating simultaneously.

6.4.66 On this basis, the assessment has assumed that all generators are operating simultaneously, with no correction applied for the acoustic character associated with the intermittent operation of generators as this scenario represents the worst case.

Residential Dwellings	Assessment Period	Predicted Rating Level, dB $L_{Ar,Tr}$	Typical Background Noise level, dB L_{A90}	Exceedance, dB
Residential Estate on Claycliffe Road	Weekday Daytime (07:00 - 23:00), T = 1hour	37	48	-
	Weekend Daytime (07:00 - 23:00), T = 1hour	37	44	-
	Weekday Night time (23:00 – 07:00), T = 15min	30	44	-
	Weekend Night time (23:00 – 07:00), T = 15min	30	35	-
Residential estate off Wilthorpe Road	Weekday Daytime (07:00 - 23:00), T = 1hour	37	43	-
	Weekend Daytime (07:00 - 23:00), T = 1hour	37	37	-
	Weekday Night time (23:00 – 07:00), T = 15min	33	34	-
	Weekend Night time (23:00 – 07:00), T = 15min	33	32	1
Proposed residential estate off Dearne Hall Road	Weekday Daytime (07:00 - 23:00), T = 1hour	37	43	-
	Weekend Daytime (07:00 - 23:00), T = 1hour	37	37	-
	Weekday Night time (23:00 – 07:00), T = 15min	30	34	-
	Weekend Night time (23:00 – 07:00), T = 15min	30	32	-

Table 5: Predicted operational noise levels at receptors, at 4m height

6.4.67 It can be seen from 5 that the predicted Rating Level is not expected to exceed the existing background noise level at any of the identified noise sensitive receptors during both the weekday and weekend daytime periods and during the weekday night time period. In accordance with BS4142, this is an indication that the development proposals will have a *low impact* on the nearest affected NSRs during the weekday and weekend daytime periods and during the weekday night time period.

6.4.68 However, the assessment indicates that predicted Rating Level is expected to exceed the existing background noise level at the existing residential estate off Wlithorpe Road by 1dB during the weekend night time period. In accordance with BS4142, this is still considered to be an indication that the development proposals will have a *low impact* on the nearest affected NSRs.

6.4.69 The main cause of this small noise level exceedance is the noise levels generated during LNG deliveries, in particular, the noise levels generated from the HGV pumping LNG into the compound. Whilst a 1dB exceedance is not considered to be significant, it is possible to ensure that the predicted Rating Level from the site is not expected to exceed the existing background noise level at any NSR at any time by restricting LNG deliveries to the following times:

- Monday to Friday: Anytime
- Saturday and Sunday: 07:00 – 23:00 only

Traffic and Transportation

6.4.70 There will be approximately two HGV movements to the Site per day to allow for the delivery of LNG to the Site. A tanker holds 19 tonnes of LNG, therefore, on this basis, it is estimated that would need to be three deliveries of LNG to the Site for the initial fill up of the tank. Thereafter, it is estimated that two HGV movements per day would allow for continued deliveries.

6.4.71 Access to the Site is gained via the existing access road permitted under planning permission 2016/0615. Drawing SK21 Revision B shows the sensitive design of the compound in order to allow sufficient manoeuvrability of vehicles when entering and exiting the Site.

6.4.72 Aside from this, the only vehicles required to attend the Site when the facility is operational will be those associated with security and maintenance.

6.4.73 The additional vehicle movements associated with the infrequent delivery of LNG to the site represents a small proportion of the overall number of vehicles using the wider industrial estate. The transport infrastructure both within the industrial estate and the wider strategic network is able to accommodate the additional vehicle movements associated with the Proposed Development.

6.4.74 In conclusion, there will be no additional pressures on the highway network or on highway safety as a result of the Proposed Development and the Proposed Development is therefore compliant with CSP28 of the adopted Core Strategy.

Flood Risk

6.4.75 Policy CSP1 and CSP4 of the LDF Core Strategy expects proposed development to adapt to climate change by locating the development to reduce the risk of flooding. It advocates for

any proposed development to be directed towards Flood Zone 1.

6.4.76 The Application Site is located within Flood Zone 1, which has a low risk of flooding. Therefore, the proposed location of the Development is considered to be appropriate and compliant with the Development Plan.

Landscape and Visual Impact

6.4.77 Policy CSP6 permits development that produce renewable energy provided that there are no significant adverse environmental effects on the character of the landscape and appearance of the local area.

6.4.78 The nearest residential properties are located over 325m to the southeast of the Application Site. The residential properties will be screened from the Proposed Development by the existing business at Zenith Park.

6.4.79 Drawing SK25, Revision C shows the elevations of the LNG compound in context with the permitted FlexGen facility. The vapourisers are the tallest elements but sit no higher than the permitted FlexGen exhaust stacks and are limited to 8m in number. The LNG tank and infrastructure will not give rise to landscape and visual impact.

Ecology

6.4.80 Policy CSP36 notes that any proposed development is expected to conserve the biodiversity of the Borough. It goes on to highlight that;

Development which may harm a biodiversity or geodiversity feature will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

6.4.81 In this case, the Site sits within a wider industrial estate of primarily B1, B2 and B8 uses. Therefore, its position within an operational industrial site means that is has very limited ecological value.

Heritage and Archaeology

6.4.82 CSP30 of the adopted Core Strategy seeks to actively encourage the management of the historic environment.

6.4.83 There are no historic features of interest or importance within the Application Site or its surroundings. The position of the Proposed Development within an operational industrial site means that there is very limited heritage and archaeological value within the setting.

6.4.84 As such, the Proposed Development is compliant with Policy CSP30 of the adopted Core Strategy.

7 SUMMARY AND CONCLUSIONS

7.1.1 This Planning Statement and a range of supporting documents demonstrate the nature of the Proposed Development, its compliance with national and local planning policy and provides detailed analysis of any potential impacts on the environment.

7.1.2 Planning permission has been granted on an adjacent site for a FlexGen facility utilising natural gas. Since receipt of planning permission, it has been identified that insufficient natural gas available from the Grid. Instead, it is proposed to utilise liquefied natural gas (LNG) which is proposed to be stored in an adjacent LNG tank.

7.1.3 This Planning Statement and a range of supporting documents demonstrate the nature of the Proposed Development, it compliance with national and local planning policy and provides detailed analysis of any potential impacts on the environment.

7.1.4 An Air Quality Assessment was undertaken as part of the FlexGen application to determine the potential worst case cumulative impact taking into consideration the least favourable meteorological conditions. This Assessment was based on natural gas a fuel source. LNG is a liquefied form of natural gas. It is transported as a liquid for safety reasons. It will be converted to its natural gas state in the proposed compound and used as a fuel. There will be no change in emissions as a result of the fuel change. As a result, the conclusions of the previous assessment work remain valid and the proposed development will not result in adverse impacts or a breach of Air Quality Regulations.

7.1.5 An environmental noise assessment has been carried out to establish the noise impact arising from the LNG compound in combination with the FlexGen facility. The predicted Rating level is expected to marginally exceed the existing background noise level by 1dB at a single noise sensitive receptor during the weekend night time period, only.

7.1.6 While the identified exceedance is not considered to be significant, it is possible to ensure that there is no exceedance by limiting LNG deliveries over the weekend period.

7.1.7 The Proposed Development will only give rise to an additional two HGV movements on the estate each day which will not give rise to traffic impact. Similarly, the Proposed Development is unlikely to cause significant adverse impacts on ecology, flood risk or have a negative landscape and visual impact.

7.1.8 In conclusion, it has been demonstrated that the proposed development is compliant with the relevant national and local planning policies, and that there will be no detrimental impact on

the environment as a result of the development. In light of the above, it is concluded that there are no known reasons why this planning application should not be considered favourably by the Local Planning Authority.

APPENDIX ONE: AIR QUALITY ASSESSMENT (APRIL 2017)

APPENDIX TWO: ENVIRONMENTAL NOISE IMPACT ASSESSMENT (FEBRUARY 2018)