

The Keadby 3 Low Carbon Gas Power Station Project

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The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order

**Land at and in the vicinity of the Keadby Power Station site,
Trentside, Keadby, North Lincolnshire**

Gas Connection Statement

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(p), 6(1)(a)(ii) and 6(4)

Applicant: Keadby Generation Limited

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GLOSSARY

Abbreviation	Description
AGI	Above Ground Installation – compound for ancillary equipment at or near to the point of connection to the natural gas pipeline.
AIL	Abnormal Indivisible Load - a load that cannot be broken down into smaller loads for transport without undue expense or risk of damage. It may also be a load that exceeds certain parameters for weight, length and width.
APFP	Applications: Prescribed Forms and Procedure
CCGT	Combined Cycle Gas Turbine – a highly efficient form of energy generation technology. An assembly of heat engines work in tandem using the same source of heat to convert it into mechanical energy which drives electrical generators and consequently generates electricity.
CCP	Carbon Capture Plant – plant used to capture carbon dioxide (CO ₂) emissions produced from the use of fossil fuels in electricity generation and industrial processes.
CCUS	Carbon Capture, Usage and Storage – group of technologies designed to reduce the amount of carbon dioxide (CO ₂) released into the atmosphere from coal and gas power stations as well as heavy industry including cement and steel production. Once captured, the CO ₂ can be either re-used in various products, such as cement or plastics (utilisation), or stored in geological formations deep underground (storage).
CEMP	Construction Environmental Management Plan – a plan to outline how a construction project will avoid, minimise or mitigate effects on the environment and surrounding area.
DBA	Design and Build Agreement - follows the design and build procurement route
DCO	Development Consent Order – made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a Nationally Significant Infrastructure Project. A DCO can incorporate or remove the need for a range of consents which would otherwise be required for a development. A DCO can also include rights of compulsory acquisition.

Abbreviation	Description
EIA	Environmental Impact Assessment - a term used for the assessment of environmental consequences (positive or negative) of a plan, policy, program or project prior to the decision to move forward with the proposed action.
EPC	Engineering, Procurement and Construction (EPC) contractor
ES	Environmental Statement – a report in which the process and results of an Environment Impact Assessment are documented.
HDD	Horizontal Directional Drilling – advanced pipeline construction technique used to place sections of pipe without the need for trenches.
kV	Kilovolt - unit of power
MOC	Minimum Offtake Connection – for connection to the National Gas Grid.
MW	Megawatt – unit of energy.
NEP	The Northern Endurance Partnership – a partnership between bp, Eni, Equinor, National Grid, Shell and Total to develop infrastructure to transport and store CO ₂ emissions.
NGG	National Gas Grid - the national gas transmission network.
NLC	North Lincolnshire Council
NPS	National Policy Statement – Statement produced by Government under the Planning Act 2008 providing the policy framework for Nationally Significant Infrastructure Projects. They include the Government’s view of the need for and objectives for the development of Nationally Significant Infrastructure Projects in a particular sector such as energy and are used to determine applications for such development.
NSIP	Nationally Significant Infrastructure Project – defined by the Planning Act 2008 and cover projects relating to energy (including generating stations, electric lines and pipelines); transport (including trunk roads and motorways, airports, harbour facilities, railways and rail freight interchanges); water (dams and reservoirs, and the transfer of water resources); wastewater treatment plants and hazardous waste facilities. These projects are only defined as nationally significant if they satisfy a statutory threshold in terms of their scale or effect.
NTS	National Transmission System – network of gas pipelines throughout the UK that supply gas to power stations and large industrial users from natural gas terminals.
PCC	Proposed Power and Carbon Capture (PCC) Site

Abbreviation	Description
PIG	Pipeline Inspection Gauge – device used to perform the inline inspection of gas pipelines by progressing through the pipeline between entry points or traps.
PINS	Planning Inspectorate - executive agency of the Department for Communities and Local Government of the United Kingdom Government. It is responsible for determining final outcomes of town planning.
SoS	Secretary of State - title typically held by Cabinet Ministers in charge of Government Departments
ZCH	Zero Carbon Humber - a consortium of energy and industrial companies and academic institutions with a shared vision to transform the Humber region into the UK's first net-zero carbon cluster by 2040.

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APPENDIX A - LETTER FROM NATIONAL GRID GAS REGARDING THE PROPOSED NATURAL GAS CONNECTION

EXECUTIVE SUMMARY

- 1 Keadby Generation Limited (the Applicant) is seeking development consent for the construction, operation and maintenance of a new low carbon Combined Cycle Gas Turbine (CCGT) Generating Station ('the Proposed Development'). The Proposed Development is a new gas fired electricity generating station of up to 910 megawatts (MW) of gross electrical output with state-of-the art carbon capture technology and including cooling water, electrical, gas and utility connections, construction laydown areas and other associated works on land to the west of the existing Keadby 2 Power Station, under construction. The Proposed Development will therefore make a significant contribution toward the UK reaching its Net Zero greenhouse gas emissions target by 2050.
- 2 This document sets out who will be responsible for designing and building the proposed gas connection ('the Natural Gas Connection') for the Proposed Development and demonstrates that there is no reason why a gas connection would not be possible.
- 3 The preferred route for the Natural Gas Connection has been determined based on technical and environmental considerations. It is anticipated that the proposed gas pipeline would connect the Proposed Development via a new natural gas reception facility within the Proposed Development Site to the existing high pressure National Transmission System (NTS) gas pipeline (Feeder 7 – Eastoft) (**Work No. 2**).
- 4 The indicative pipeline route is shown on the Indicative Gas Supply Pipeline Connection Plans (**Application Document Ref. 4.11**).
- 5 The Applicant has engaged with National Grid Gas (NGG) for the location of the new Minimum Offtake Connection (MOC), expected to be supplied via the existing Keadby spur pipeline, and has agreed the indicative connection routing as feasible.

1.0 INTRODUCTION

1.1 Overview

- 1.1.1 This Gas Connection Statement (**Application Document Ref. 5.3**) has been prepared by AECOM on behalf of Keadby Generation Limited (the 'Applicant') which is a wholly owned subsidiary of SSE plc. It forms part of the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the 'SoS') for Business, Energy and Industrial Strategy, under section 37 of 'The Planning Act 2008' (the '2008 Act').
- 1.1.2 The Applicant is seeking development consent for the construction, operation and maintenance of a new low carbon Combined Cycle Gas Turbine (CCGT) Generating Station ('the Proposed Development') on land at, and in the vicinity of, the existing Keadby Power Station, Trentside, Keadby, Scunthorpe DN17 3EF (the 'Proposed Development Site').
- 1.1.3 The Proposed Development is a new electricity generating station of up to 910 megawatts (MW) gross electrical output, equipped with carbon capture and compression plant and fuelled by natural gas, on land to the west of Keadby 1 Power Station and the (under construction) Keadby 2 Power Station, including connections for cooling water, electrical, gas and utilities, construction laydown areas and other associated development. It is described in **Chapter 4: The Proposed Development of the Environmental Statement (ES) (ES Volume 1 - Application Document Ref. 6.2)**.
- 1.1.4 The Proposed Development falls within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) under Section 14(1)(a) and Sections 15(1) and (2) of the 2008 Act, as it is an onshore generating station in England that would have a generating capacity greater than 50MW electrical output (50MWe). As such, a DCO application is required to authorise the Proposed Development in accordance with Section 31 of the 2008 Act.
- 1.1.5 The DCO, if made by the SoS, would be known as 'The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order' ('the Order').

1.2 The Applicant

- 1.2.1 The Applicant, Keadby Generation Limited, is the freehold owner of a large part of the Proposed Development Site and is a wholly owned subsidiary of the FTSE 100-listed SSE plc, one of the UK's largest and broadest-based energy companies, and the country's leading developer of renewable energy generation. Over the last 20 years, SSE plc has invested over £20bn to deliver industry-leading offshore wind, onshore wind, CCGT, energy from waste, biomass, energy networks and gas storage projects. The Applicant owns and operates the adjacent Keadby 1 Power Station and is in the process of constructing Keadby 2 Power Station. SSE operates the Keadby Windfarm which lies to the north and south of the Proposed Development Site and

generates renewable energy from 34 turbines, with a total installed generation capacity of 68MW.

- 1.2.2 SSE has produced a ‘Greenprint’ document (SSE plc, 2020a) that sets out a clear commitment to investment in low carbon power infrastructure, working with government and other stakeholders to create a net zero power system by 2040. This includes investment in flexible sources of electricity generation and storage for times of low renewable output which will complement other renewable generating sources, using low carbon fuels and/ or capturing and storing carbon emissions. SSE is working with leading organisations across the UK to accelerate the development of carbon capture, usage and storage (CCUS) clusters, including Equinor and National Grid Carbon.
- 1.2.3 The design of the Proposed Development demonstrates this commitment. The Proposed Development will be built with a clear route to decarbonisation, being equipped with post-combustion carbon capture technology, consistent with SSE’s commitment to reduce the carbon intensity of electricity generated by 60% by 2030, compared to 2018 levels (SSE plc, 2020b). It is intended that the Proposed Development will connect to infrastructure that will be delivered by the Zero Carbon Humber (ZCH) Partnership¹ and Northern Endurance Partnership (NEP)² for the transport and offshore geological storage of carbon dioxide.

1.3 What is Carbon Capture, Usage and Storage?

- 1.3.1 CCUS is a process that removes carbon dioxide emissions at source, for example emissions from a power station or industrial installation, and then compresses the carbon dioxide so that it can be safely transported to secure underground geological storage sites. It is then injected into layers of solid rock filled with interconnected pores where the carbon dioxide becomes trapped and locked in place, preventing it from being released into the atmosphere. Plate 1 shows what is involved in the process.

¹ <https://www.zerocarbonhumber.co.uk/the-vision/>

² <https://www.zerocarbonhumber.co.uk/news/northern-endurance-partnership/>

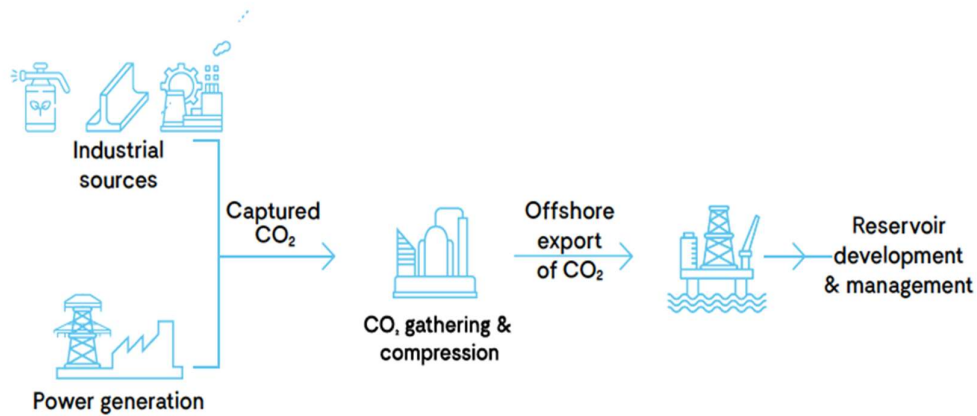


Plate 1: Schematic illustration of carbon capture, usage and storage

- 1.3.2 The technologies used in CCUS are proven and have been used safely across the world for many years. Geological storage sites are located far underground and are subject to stringent tests to ensure that they are geologically suitable. It is expected that the storage sites will be located offshore, in areas such as the North Sea. The NEP has been formed to develop the offshore infrastructure to transport and store carbon dioxide emissions in the North Sea.
- 1.3.3 CCUS is crucial to reducing carbon dioxide emissions and combatting global warming. The UK Government has committed to achieving Net Zero in terms of greenhouse gas emissions by 2050. This is a legally binding target. UK Government policy further states that the *'deployment of power CCUS projects will play a key role in the decarbonisation of the electricity system at low cost'* (HM Government, 2020a, page 47).
- 1.3.4 The Proposed Development will provide up to 910MWe (gross) of dispatchable capacity and capture some 2 million tonnes of carbon dioxide per annum, dependent upon the turbine equipment chosen and the running hours of the plant. The Proposed Development could be up and running by the mid-2020s and will facilitate the timely development of a major CCUS cluster in the Humber region, making an important contribution towards the achievement of Net Zero by 2050.

1.4 The Proposed Development

- 1.4.1 The Proposed Development will work by capturing carbon dioxide emissions from the gas-fired power station and connecting into the ZCH Partnership export pipeline and gathering network for onward transport to the Endurance saline aquifer under the North Sea.
- 1.4.2 The Proposed Development would comprise a low carbon gas fired power station with a gross electrical output capacity of up to 910MWe and associated buildings, structures and plant and other associated development defined in the

Schedule 1 of the draft DCO (**Application Document Ref. 2.1**) as **Work No. 1** – 11 and shown on the Works Plans (**Application Document Ref. 4.3**).

1.4.3 At this stage, the final technology selection cannot yet be made as it will be determined by various technical and economic considerations and will be influenced by future UK Government policy and regulation. The design of the Proposed Development therefore incorporates a necessary degree of flexibility to allow for the future selection of the preferred technology in the light of prevailing policy, regulatory and market conditions once a DCO is made.

1.4.4 The Proposed Development will include:

- a carbon capture equipped electricity generating station including a CCGT plant (**Work No. 1A**) with integrated cooling infrastructure (**Work No. 1B**), and carbon dioxide capture plant (CCP) including conditioning and compression equipment, carbon dioxide absorption unit(s) and stack(s) (**Work No. 1C**), natural gas receiving facility (**Work No. 1D**), supporting uses including control room, workshops, stores, raw and demineralised water tanks and permanent laydown area (**Work No. 1E**), and associated utilities, various pipework, water treatment plant, wastewater treatment, firefighting equipment, emergency diesel generator, gatehouse, chemical storage facilities, other minor infrastructure and auxiliaries/ services (all located in the area referred to as the ‘Proposed Power and Carbon Capture (PCC) Site’ and which together form **Work No. 1**);
- natural gas pipeline from the existing National Grid Gas high pressure (HP) gas pipeline within the Proposed Development Site to supply the Proposed PCC Site including an above ground installation (AGI) for National Grid Gas’s apparatus (**Work No. 2A**) and the Applicant’s apparatus (**Work No. 2B**) (the ‘Gas Connection Corridor’);
- electrical connection works to and from the existing National Grid 400kV Substation for the export of electricity (**Work No. 3A**) (the ‘Electrical Connection Area to National Grid 400kV Substation’);
- electrical connection works to and from the existing Northern Powergrid 132kV Substation for the supply of electricity at up to 132kV to the Proposed PCC Site, and associated plant and equipment (**Work No. 3B**) (the ‘Potential Electrical Connection to Northern Powergrid 132kV Substation’);
- Water Connection Corridors to provide cooling and make-up water including:
 - underground and/ or overground water supply pipeline(s) and intake structures within the Stainforth and Keadby Canal, including temporary cofferdam (**Work No. 4A**) (the ‘Canal Water Abstraction Option’);
 - in the event that the canal abstraction option is not available, works to the existing Keadby 1 power station cooling water supply pipelines and intake structures within the River Trent, including temporary cofferdam (**Work No. 4B**) (the ‘River Water Abstraction Option’);

- works to and use of an existing outfall and associated pipework for the discharge of return cooling water and treated wastewater to the River Trent (**Work No. 5**) (the 'Water Discharge Corridor');
- towns water connection pipeline from existing water supply within the Keadby Power Station to provide potable water (**Work No. 6**);
- above ground carbon dioxide compression and export infrastructure comprising an above ground installation (AGI) for the undertaker's apparatus including deoxygenation, dehydration, staged compression facilities, outlet metering, and electrical connection (**Work No. 7A**) and an above ground installation (AGI) for National Grid Carbon's apparatus (**Work No. 7B**);
- new permanent access from A18, comprising the maintenance and improvement of an existing private access road from the junction with the A18 including the western private bridge crossing of the Hatfield Waste Drain (**Work No. 8A**) and installation of a layby and gatehouse (**Work No. 8B**), and an emergency vehicle and pedestrian access road comprising the maintenance and improvement of an existing private track running between the Proposed PCC Site and Chapel Lane, Keadby and including new private bridge (**Work No. 8C**);
- temporary construction and laydown areas including contractor facilities and parking (**Work No. 9A**), and access to these using the existing private roads from the A18 and the existing private bridge crossings, including the replacement of the western existing private bridge crossing known as 'Mabey Bridge' over Hatfield Waste Drain (**Work No. 9B**) and a temporary construction laydown area associated with that bridge replacement (**Work No. 9C**);
- temporary retention, improvement and subsequent removal of an existing Additional Abnormal Indivisible Load (AIL) Haulage Route (**Work No. 10A**) and temporary use, maintenance, and placement of mobile crane(s) at the existing Railway Wharf jetty for a Waterborne Transport Offloading Area (**Work No. 10B**);
- landscaping and biodiversity enhancement measures (**Work No. 11A**) and security fencing and boundary treatments (**Work No. 11B**); and
- associated development including: surface water drainage systems; pipeline and cable connections between parts of the Proposed Development Site; hard standings and hard landscaping; soft landscaping, including bunds and embankments; external lighting, including lighting columns; gatehouses and weighbridges; closed circuit television cameras and columns and other security measures; site preparation works including clearance, demolition, earthworks, works to protect buildings and land, and utility connections; accesses, roads, roadways and vehicle and cycle parking; pedestrian and cycle routes; and temporary works associated with the maintenance of the authorised development.

- 1.4.5 The Applicant will be responsible for the construction, operation (including maintenance) and eventual decommissioning of the Proposed Development, with the exception of the National Grid Gas compound works (**Work No. 2A**), the works within the National Grid Electricity Transmission 400kV substation (part of **Work No. 3A**), the works within the Northern Powergrid 132kV substation (part of **Work No. 3B**), and the National Grid Carbon compound works (**Work No. 7B**), which will be the responsibility of those named beneficiaries.
- 1.4.6 The Proposed Development includes the equipment required for the capture and compression of carbon dioxide emissions from the generating station so that it is capable of being transported off-site. ZCH Partnership will be responsible for the construction, operation and decommissioning of the carbon dioxide gathering network linking onshore power and industrial facilities including the Proposed Development in the Humber Region. The carbon dioxide export pipeline does not, therefore, form part of the Proposed Development and is not included in the Application but will be the subject of separate consent applications by third parties, such as the Humber Low Carbon Pipeline DCO Project by National Grid Carbon³.
- 1.4.7 The Proposed Development will operate 24 hours per day, 7 days per week with programmed offline periods for maintenance. It is anticipated that in the event of CCP maintenance outages, for example, it will be necessary to operate the Proposed Development without carbon capture, with exhaust gases from the CCGT being routed via the Heat Recovery Steam Generator (HRSG) stack.
- 1.4.8 Various types of associated and ancillary development further required in connection with and subsidiary to the above works are detailed in Schedule 1 'Authorised Development' of the draft DCO (**Application Document Ref. 2.1**). This along with **Chapter 4: The Proposed Development** (ES Volume I - **Application Document Ref. 6.2**) provides further description of the Proposed Development. The areas within which each numbered Work (component) of the Proposed Development are to be built are defined by the coloured and hatched areas on the Works Plans (**Application Document Ref. 4.3**).

1.5 The Proposed Development Site

- 1.5.1 The Proposed Development Site (the 'Order Limits') is located within and near to the existing Keadby Power Station site near Scunthorpe, Lincolnshire and lies within the administrative boundary of North Lincolnshire Council (NLC). The majority of land is within the ownership or control of the Applicant (or SSE associated companies) and is centred on national grid reference 482351, 411796.

³ <https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/humber-low-carbon-pipelines/>

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- 1.5.2 The existing Keadby Power Station site currently encompasses the operational Keadby 1 and (under construction) Keadby 2 Power Station sites, including the Keadby 2 Power Station Carbon Capture and Readiness reserve space.
- 1.5.3 The Proposed Development Site encompasses an area of approximately 69.4 hectares (ha). This includes an area of approximately 18.7ha to the west of Keadby 2 Power Station in which the generating station (CCGT plant, cooling infrastructure and CCP) and gas connection will be developed (the Proposed PCC Site).
- 1.5.4 The Proposed Development Site includes other areas including:
- previously developed land, along with gas, towns water and other connections, and access routes, within the Keadby Power Station site;
 - the National Grid 400kV Substation located directly adjacent to the Proposed PCC Site, through which electricity generated by the Proposed Development will be exported;
 - Emergency Vehicle Access Road and Potential Electrical Connection to Northern Powergrid Substation, the routes of which utilise an existing farm access track towards Chapel Lane and land within the existing Northern Powergrid substation on Chapel Lane;
 - Water Connection Corridors:
 - Canal Water Abstraction Option which includes land within the existing Keadby Power Station site with an intake adjacent to the Keadby 2 Power Station intake and pumping station and interconnecting pipework;
 - River Water Abstraction Option which includes a corridor that spans Trent Road and encompasses the existing Keadby Power Station pumping station, below ground cooling water pipework, and infrastructure within the River Trent; and
 - a Water Discharge Corridor which includes an existing discharge pipeline and outfall to the River Trent and follows a route of an existing easement for Keadby 1 Power Station;
 - an existing river wharf at Railway Wharf (the Waterborne Transport Offloading Area) and existing temporary haul road into the into the existing Keadby 1 Power Station Site (the 'Additional Abnormal Indivisible Load (AIL) Route');
 - a number of temporary Construction Laydown Areas on previously developed land and adjoining agricultural land; and
 - land at the A18 Junction and an existing site access road, including two existing private bridge crossing of the Hatfield Waste Drain lying west of Piffrey Farm (the western of which is known as Mabey Bridge, to be

replaced, and the eastern of which is termed Skew Bridge) and an existing temporary gatehouse, to be replaced in permanent form.

- 1.5.5 In the vicinity of the Proposed Development Site the River Trent is tidal, therefore parts of the Proposed Development Site are within the UK marine area. No harbour works are proposed.
- 1.5.6 Further description of the Proposed Development Site and its surroundings is provided in **Chapter 3: The Site and Surrounding Area (ES Volume I - Application Document Ref. 6.2)**.

1.6 The Development Consent Process

- 1.6.1 As a NSIP project, the Applicant is required to obtain a DCO to construct, operate and maintain the generating station, under Section 31 of the 2008 Act. Sections 42 to 48 of the 2008 Act govern the consultation that the promoter must carry out before submitting an application for a DCO and Section 37 of the 2008 Act governs the form, content and accompanying documents that are required as part of a DCO application. These requirements are implemented through the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) ('APFP Regulations') which state that an application must be accompanied by an ES, where a development is considered to be 'EIA development' under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations).
- 1.6.2 An application for development consent for the Proposed Development has been submitted to the Planning Inspectorate (PINS) acting on behalf of the Secretary of State. Subject to the Application being accepted (which will be decided within a period of 28 days following receipt of the Application), PINS will then examine it and make a recommendation to the Secretary of State, who will then decide whether to make (grant) the DCO.

1.7 The Purpose and Structure of this Document

- 1.7.1 The purpose of this document is to meet the requirements of Regulations 6(1)(a)(ii) and 6(4) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (APFP Regulations) (UK Government, 2009), which require the Applicant to provide a statement setting out who will be responsible for designing and building the proposed natural gas connection to the Proposed Development and to provide details of the proposed pipeline (name, owner, start and end points, length in km, external diameter in mm, what will be conveyed, and whether any rights in land or consents for road or river crossings are required and can be obtained by agreement).
- 1.7.2 The document is structured as follows:
- Section 2 sets out the proposed gas pipeline, including the name, route, length, points of connection (start and end points) and diameter;

- Section 3 outlines contractual agreements for the proposed Natural Gas Connection;
- Section 4 provides details on the design, build, operation and maintenance responsibilities for the proposed Natural Gas Connection, including ownership of the pipeline;
- Section 5 outlines land ownership in respect of the land required for the proposed Natural Gas Connection;
- Section 6 provides information on the consents required for the proposed Natural Gas Connection works; and
- Section 7 provides the summary and conclusions to the Statement.

2.0 PROPOSED GAS PIPELINE ROUTE AND CONNECTION

2.1 Overview

- 2.1.1 The Applicant has included within this Statement the proposed route and connection point for the 'Natural Gas Connection to the Low Carbon Electricity Generating Station' (**Work No. 1A**) located within the Proposed PCC Site.
- 2.1.2 **Work No. 2** (inclusive of **Work Nos. 2A** and **2B**) covers the construction and operation of the gas pipeline, MOC, AGI (the term used in the Application documents to refer to the compound for NGG's apparatus), connection point and associated infrastructure. This includes cathodic protection posts, marker posts, underground electrical supply cables, transformers and control systems cables, telemetry and communication systems, valves and flanges, remotely operated valve and valve bypass, pressurisation bridle, instrumentation and electrical kiosks, Pipeline Inspection Gauge (PIG) receiving facility.
- 2.1.3 The National Transmission System (NTS) high pressure gas transmission network traverses the Proposed Development Site and runs within the Order Limits within the south of the Proposed PCC Site where it is proposed that an AGI for National Grid Gas (NGG) and underground pipeline to the NTS would be created (**Work No. 2A**).
- 2.1.4 Subject to agreement with NGG, natural gas will be supplied via a tie-in to the gas transmission network (the start point). The high-pressure gas supply will then be transported to the Low Carbon Electricity Generating Station (the end point) (**Work No. 1A**) through a high pressure steel pipeline (**Work No. 1D**) of up to 800mm (nominal bore) external diameter which will be tied into the gas transmission network via an MOC/ AGI for the Undertaker (**Work No. 2B**) (as shown on **Figure 3.3** (ES Volume III – **Application Document Ref. 6.4**)).
- 2.1.5 The proposed Natural Gas Connection corridor, which includes the working areas and space required, is shown on the Indicative Gas Supply Pipeline Connection Plans (**Application Document Ref. 4.11**).
- 2.1.6 Environmental effects associated with the construction of the Natural Gas Connection are assessed as part of the Environmental Impact Assessment (EIA), which is reported in the ES (**Application Document Refs. 6.1 - 6.4**).

3.0 CONTRACTUAL AGREEMENTS

3.1 Overview

- 3.1.1 Engagement has been ongoing with NGG throughout 2020 to begin identifying the selected Natural Gas Connection point to the NTS, engineering configuration options, indicative timeline and availability of sufficient gas capacity within the NTS to meet the requirements of the Proposed Development. These discussions have indicated that a suitable Natural Gas Connection point is available for the Proposed Development within the anticipated timescales and a schedule has been generated to aid optimisation of the application process for the Proposed Development. There is currently sufficient capacity in the system, however this is to be reviewed on an annual basis.
- 3.1.2 The Applicant intends to formalise discussions through submission of a formal connection application in late 2021, initiating the Feasibility Study process. On receipt of a positive outcome from the Feasibility Study, the Applicant proposes to trigger the Design and Offer process within three months which is the final stage before receiving a formal offer that could be made contractual through the Applicant's acceptance. Once the Design and Offer process is triggered, NGG will have six months to provide the Applicant with a connection offer and the Applicant will have a minimum of three months to decide whether to accept the terms of the offer.
- 3.1.3 On acceptance of the offer, a Design and Build Agreement (DBA) with NGG will be reached for the construction of the MOC/ AGI. The DBA will set the timescales for MOC/ AGI delivery.
- 3.1.4 Natural Gas Connection works on the gas pipeline route shown on the Indicative Gas Supply Pipeline Connection Plans (**Application Document Ref. 4.11**) will be carried out by NGG and other specialist contractor(s) employed by the Applicant.
- 3.1.5 The contractual agreement process with NGG is summarised in Plate 2 below.

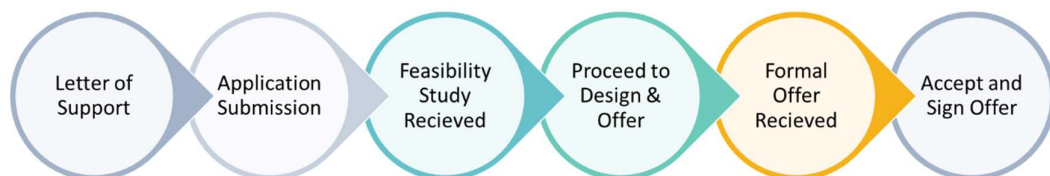


Plate 2: Contractual Agreement Process

3.1.6 The current status of discussions between the Applicant and NGG is confirmed in a letter from NGG attached in Appendix A.

4.0 RESPONSIBILITIES FOR DESIGNING AND BUILDING THE NATURAL GAS CONNECTION

4.1 Design

- 4.1.1 The chosen Engineering, Procurement and Construction (EPC) contractor will undertake detailed design, engineering and construction of the Natural Gas Connection.
- 4.1.2 The detailed design of the Natural Gas Connection will be secured by DCO Requirement 5 in Schedule 2 of the draft DCO (**Application Document Ref. 2.1**).

4.2 Build

- 4.2.1 The Natural Gas Connection adopted will be constructed by suitably qualified contractors, with tie-in connection works coordinated with NGG. The construction of the MOC from the National Grid AGI (**Work No. 2A**) will be undertaken by a National Grid approved contractor. The construction of the MOC will require stripping and storing soil/ made ground and excavation to approximately 1m below the depth of the existing gas main along a length of approximately 12m (6m either side of the connection point).
- 4.2.2 A concrete pad and supports for the existing gas main either side of the connection point will then be installed together with a new 'tee' piece and construction valve. The existing gas main will then be drilled using specialist pressure drilling equipment (whilst the gas main is in operation), and the construction valve will be closed until the new connection pipeline is completed.
- 4.2.3 The construction of the contractor's compound adjacent to the MOC/ AGI will require excavation of a trench up to the interface with the MOC/ AGI compound to allow installation of a swan neck to bring the pipework above ground for the Applicant's compound (**Work No. 2B**), and installation of valves and pipework, the PIG trap (if required), and electrical and telemetry equipment. Following installation of below ground infrastructure, the area will be backfilled, and excess soils will be used in the landscaping of the compound perimeter.
- 4.2.4 The gas pipeline (**Work No. 1D**) connecting the AGI and or MOC to the Low Carbon Electricity Generating Station (**Work No. 1A**) will be constructed using an open-cut method. These works will generally be as follows:
- fencing off works area and fit safety signage;
 - stripping and storing of topsoil;
 - facilitating a working area of around 35m to allow for temporary trackway, welding and soils storage;
 - excavation of a trench;

- pipe laid (welding pipe sections together at grade level (pipe stringing), within approximately 1.2m below ground level; and
- testing the pipe integrity, re-instating land drainage, and then backfilling subsoil, reinstating topsoil and re-planting to the original state as required.

4.2.5 The corridor working width required for open cut pipeline construction is generally around 35m. This is the minimum working width that is required to facilitate ease of construction. This width allows topsoil and spoil to be excavated and stored adjacent to the point of generation, stringing and welding of sections of pipe, access along the route and laying of the pipe within the trench prior to backfilling.

4.2.6 Access arrangements during construction of the pipeline, MOC and AGI are presented in **Chapter 5: Construction and Programme Management** (ES Volume I – **Application Document Ref. 6.2**) and impacts on local roads are considered in **Chapter 10: Transport and Traffic** (ES Volume I – **Application Document Ref. 6.2**).

4.2.7 The construction of the Natural Gas Connection is anticipated to take around six months. All works would be undertaken in accordance with the measures outlined in a Construction Environmental Management Plan (CEMP) to be prepared by the contractor. A Framework CEMP is provided as **Application Document Ref. 7.1**.

4.2.8 Due to the proximity of the AGI and or MOC to the NTS, it is not expected that the connection pipeline will encounter barriers or require 'special crossings' (such as for roads or rivers), although at this stage in the pipeline design, its exact route and construction method has yet to be determined.

4.3 Operation and Maintenance

4.3.1 The Applicant will own and be responsible for the operation and maintenance of all on-site plant and apparatus (including Natural Gas Connection on the Proposed PCC Site) during operation of the Proposed Development.

4.3.2 Pipeline inspection plans will be prepared and if required, PIG launching and receiving facilities for intelligent pigging operations will be considered.

4.3.3 NGG would own and be responsible for the operation and maintenance of their respective pipelines and equipment within the Proposed Development Site.

5.0 LAND REQUIREMENTS

5.1 Overview

- 5.1.1 The Applicant has agreed the land rights within parts of the Proposed Development Site, as described in the Statement of Reasons (**Application Document Ref. 3.2**).
- 5.1.2 The Applicant, along with other companies in the same parent company group, has the freehold interest in all of the land on which the Natural Gas Connection (for the MOC, AGI and pipeline connection from the NTS to the Low Carbon Electricity Generating Station) will be made as shown on the Land Plans (**Application Document Ref. 4.2**) and Book of Reference (**Application Document Ref. 3.1**).
- 5.1.3 The connection agreement with NGG will provide the necessary rights for the Applicant for all purposes connected with the laying, installation and operation of the Natural Gas Connection and associated apparatus.

6.0 CONSENTS REQUIRED

- 6.1.1 The proposed Natural Gas Connection works are included within the DCO Application, and therefore no separate planning permission is required. The proposed Natural Gas Connection works (**Work No. 2**) in Schedule 1 of the DCO (**Application Document Ref. 2.1**) cover the construction and operation of the gas connection. Environmental impacts associated with the gas connection works are assessed in the topic chapters in the ES (**Application Document Ref. 6.2**).
- 6.1.2 No consents for road or river crossings are required for the Natural Gas Connection.

7.0 CONCLUSIONS

- 7.1.1 This Gas Connection Statement has been prepared to satisfy the requirements of Infrastructure Planning Applications: Prescribed Forms and Procedures Regulations 2009 Regulations 6(1)(a)(ii) and 6(4) and to demonstrate that there is no reason why a gas connection will not be possible for the Proposed Development.
- 7.1.2 The Statement has demonstrated that the proposed Natural Gas Connection and associated pipeline included within the Application (and assessed as part of the associated EIA reported in the ES (**Application Document Refs. 6.1 - 6.4**)) are feasible, that the necessary agreements are, or will be, secured, and appropriate powers are, or will be, secured and appropriate powers are included in the draft DCO (**Application Document Ref. 2.1**) to facilitate the delivery of the Natural Gas Connection.

8.0 REFERENCES

SSE (2020). *A Greenprint for a Cleaner Resilient Economy*. Available online:
<https://www.sse.com/media/l52kojcn/sse-a-greenprint-for-building-a-cleaner-more-resilient-economy.pdf>

UK Government (2009). Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (APFP Regulations) (SI 2009 No. 2264). Available online:
<https://www.legislation.gov.uk/uksi/2009/2264/contents/made>

APPENDIX A. LETTER FROM NATIONAL GRID GAS REGARDING THE PROPOSED NATURAL GAS CONNECTION

FAO: Kyle Murchie
Keadby Generation Limited
Keadby Power Station
Trentside
Keadby
Scunthorpe
DN17 3EF

Tim Dart
Gas Connections
Contract Manager
National Grid Gas plc

tim.dart@nationalgrid.com
www.nationalgrid.com

Date: 5 May 2021

Dear Kyle,

INITIAL ENGAGEMENT FOR NEW CONNECTION – Keadby Generation Limited

I write to you with regards to our recent communications regarding a potential NTS connection for a new power station at Keadby.

As per our discussion, this letter is to acknowledge that Keadby Generation Limited (“**KGL**”) has engaged with National Grid Gas plc (“**NGG**”) to initially enquire about a new connection near the existing NTS Exit Points of Eastoft (Keadby) and Keadby 2 Powerstation.

At this stage, the discussions have been preliminary and KGL would need to submit a Competent Connection Application as per the Uniform Network Code – Transportation Principal Document, Section V – General, 13 – NTS Connections, as well as make payment of the Connection Application Fee, in order for NGG to begin the application to offer process, which would lead to a Full Connection Offer. NGG look forward to engaging with KGL as and when the Connection Application is submitted.

Please contact me at tim.dart@nationalgrid.com or 07976 909505 if you wish to discuss this further.

Yours sincerely,



Tim Dart
Gas Connections Contract Manager
National Grid Gas plc