

# KEADBY 3 CARBON CAPTURE POWER STATION

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A collaboration between **SSE Thermal** and **Equinor**

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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**

**Statement of Common Ground with  
National Grid Electricity Transmission and  
National Grid Gas**

**The Planning Act 2008**

**Applicant: Keadby Generation Limited**

**Date: December 2021**



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## GLOSSARY

<b>Abbreviation</b>	<b>Description</b>
ADMS	Atmospheric Dispersion Modelling System
AGI	Above ground installation
AIL	Additional Abnormal Indivisible Load
AQMAU	Air Quality Modelling and Assessment Unit
BAT	Best available techniques
CCGT	Combined Cycle Gas Turbine
CCP	Carbon dioxide capture plant
CEMP	Construction Environmental Management Plan
CHP	Combined heat and power
DCO	Development Consent Order
dDCO	Draft Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
FFL	Finished floor level
FRA	Flood Risk Assessment
HP	High pressure
HRSG	Heat Recovery Steam Generator
MW	megawatts
NGET	National Grid Electrical Transmission Plc
NGG	National Grid Gas Plc
NLC	North Lincolnshire Council
NSIP	Nationally Significant Infrastructure Project

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<b>Abbreviation</b>	<b>Description</b>
PCC	Proposed Power and Carbon Capture
PINS	Planning Inspectorate, The
WFD	Water Framework Directive
ZCH	Zero Carbon Humber

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## 1.0 INTRODUCTION

### 1.1 Overview

- 1.1.1 This Statement of Common Ground ('SoCG') (**Application Document Ref. 8.7**) has been prepared on behalf of Keadby Generation Limited ('the Applicant') which is a wholly owned subsidiary of SSE plc, and National Grid Electricity Transmission and National Grid Gas. 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 commissioning) 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 I - APP-047)**.
- 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 Proposed Development

- 1.2.1 The Proposed Development will work by capturing carbon dioxide emissions from the gas-fired power station and connecting into the Zero Carbon Humber (ZCH) Partnership export pipeline and gathering network for onward transport to the Endurance saline aquifer under the North Sea.
- 1.2.2 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 (**APP-005**) as Work No. 1 – 11 and shown on the Works Plans (**APP-012**).

1.2.3 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.

1.2.4 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 for 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 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
  - minor associated development.
- 1.2.5 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**) within the gas reception facility, 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.

- 1.2.6 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 Ventures.
- 1.2.7 The Proposed Development is designed to be capable of operating 24 hours per day, 7 days a week, with plant operation dispatchable to meet electricity demand and with programmed offline periods for maintenance. It is anticipated that in the event of CCP maintenance outages, for example, it could 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.
- 1.2.8 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 (**APP-005**). This along with **Chapter 4: The Proposed Development in the ES Volume I (APP-047)** 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 (**APP-012**).

### 1.3 The Proposed Development Site

- 1.3.1 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.
- 1.3.2 The existing Keadby Power Station site currently encompasses the operational Keadby 1 and Keadby 2 Power Station (under commissioning) sites, including the Keadby 2 Power Station Carbon Capture and Readiness reserve space.
- 1.3.3 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).

1.3.4 The Proposed Development Site includes other areas including:

- high pressure gas pipeline to supply the CCGT including a gas compound for National Grid Gas's (NGG) apparatus and a gas compound for the Applicant's apparatus;
- 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;
- 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 Pilfrey 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.

1.3.5 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.

1.3.6 Further description of the Proposed Development Site and its surroundings is provided in **Chapter 3: The Site and Surrounding Area** in ES Volume I (**APP-046**).

## **1.4 The Development Consent Process**

- 1.4.1 As a NSIP project, the Applicant is required to seek 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.
- 1.4.2 An application for development consent for the Proposed Development has been submitted to and accepted for examination by the Planning Inspectorate (PINS) acting on behalf of the Secretary of State. PINS is now examining the Application and will make a recommendation to the Secretary of State, who will then decide whether to make (grant) the DCO.

## **1.5 The Purpose and Structure of this Document**

- 1.5.1 The purpose of this document is to summarise clearly the agreements reached between the parties on matters relevant to the examination of the Application and to assist the Examining Authority. It has been prepared with regard to the guidance in 'Planning Act 2008: examination of application for development consent' (Department for Communities and Local Government, March 2015).
- 1.5.2 The document is structured as follows:
- Section 2 – sets out the role of National Grid with particular regards to the DCO process;
  - Section 3 – sets out key correspondence sent by both parties up until the submission of the Application;
  - Section 4 – sets out key correspondence sent by both parties up until the submission of the Application;
- Section 5 – sets out the matters that are not yet to be agreed and where discussions are on-going between the parties and summarises next steps.

## **2.0 THE ROLE OF NATIONAL GRID**

- 2.1.1 National Grid Electricity Transmission Plc and National Grid Gas Plc together as 'National Grid' are a statutory undertaker responsible for maintaining and operating electricity and gas transmission networks across the UK.
- 2.1.2 National Grids have stated that their primary concern is to meet their statutory obligations and ensure that any development does not impact in any adverse way upon these statutory obligations.
- 2.1.3 National Grid have submitted a Relevant Representation to the Planning Inspectorate in order to protect its position in relation to infrastructure and land which is within or in close proximity to the proposed Order limits.

### 3.0 SUMMARY OF CORRESPONDENCE

3.1.1 The below Table 3.1 contains a record of key correspondence between the Applicant and National Grid pertinent to this Statement of Common Ground.

**Table 3.1: Summary of Correspondence**

<b>Date</b>	<b>Correspondence</b>
14/04/2020	Signed Acceptance of the Agreement to Vary the Keadby 1 BCA, increasing TEC capacity and agreeing the repowering of Keadby 1 under the name Keadby 3.
09/06/2020	National Grid response to PINS EIA Scoping Opinion Consultation.  A copy of the response can be found at pages 133 of the Environmental Statement Volume II – Appendix 1B: Scoping Opinion (APP-066).
13/10/2020	Pre-Application meeting with National Grid Gas to discuss the A2O connection process for Keadby 3 Power Station.
24/11/2020	Applicant Section 42 consultation.  A copy of the letter template sent for the Section 42 consultation can be found at pages 336 – 342 of the Consultation Report (APP-030).
19/01/2021	Section 42 response from National Grid requesting appropriate protection for retained apparatus of electricity and gas infrastructures.  A copy of the consultation response can be found at page 385 of the Consultation Report (APP-030).
04/02/2021	Discussion with National Grid DCO Liaison Manager on the application and interaction with National Grid Assets.
29/03/2021	Applicant Section 42 re-consultation.  A copy of the letter template sent for the Section 42 consultation can be found at pages 550 – 557 of the Consultation Report (APP-030).
23/04/2021	Section 42 re-consultation response from National Grid requesting appropriate protection for retained apparatus of electricity and gas infrastructures.

Date	Correspondence
	A copy of the consultation response can be found at pages 594 – 595 of the Consultation Report (APP-030).
27/07/2021	Applicant Section 56 Notification.  A copy of the letter template sent for the Section 56 Notice can be found in Ref. OD-005.
19/08/2021	Discussion with National Grid DCO Liaison Manager on the application and interaction with National Grid Assets.
24/09/2021	Pre-Application meeting with National Grid Gas to discuss the PARCA process for Keadby 3 Power Station.
30/11/2021	Submission of Electrical Modification Application to increase Demand Capacity
06/12/2021	Correspondence with National Grid Gas to update access to the Customer Connections Portal and confirm intention to submit A2O application in December 2021.
09/12/2021	Meeting between Keadby 3 project’s land and DCO advisors and the National Grid land and DCO liaison officers.  GIS shapefile of red line (Draft Order Limits) supplied to National Grid to enable provision of more accurate list of apparatus/assets within Draft Order Limits.
Ongoing	Monthly SSE Thermal meetings with National Grid Electricity Transmission and National Grid Electricity System Operator Account Managers
Ongoing	Regular SSE Thermal meetings with National Grid Gas Contract Managers (directly for Keadby 3 or through Keadby 2 initiated correspondence).

## 4.0 MATTERS AGREED PRIOR TO EXAMINATION

4.1.1 The below sections contain matters agreed correct at the date of the Preliminary Meeting for the Application (07 December 2021) along with a concise commentary of what the item refers to and how it came to be agreed between the two parties.

### Connection Agreements

4.1.2 It is agreed that an Electrical Connection to the Transmission Network is secured via a signed contract dated 14th April 2020. It is agreed that connection is to be made to the transmission network at the National Grid Keadby 400kV Substation Main 3 and Reserve 3 busbars via the connection bay currently occupied by the SSE circuit breaker X1205.

4.1.3 It is agreed that an Electrical TEC Capacity of 910MW is secured via a signed contract dated 14th April 2020.

4.1.4 It is agreed that an Electrical Modification Application has been submitted in November 2021 to seek an increase in electrical import capacity at start-up following design development. It is agreed that this capacity would be delivered through the connection to the transmission network at the National Grid Keadby 400kV Substation via the connection bay currently occupied by the SSE circuit breaker X1205.

4.1.5 It is agreed that Gas Connection to the Natural Gas Transmission Network is to be secured through an A2O Application, which is to be submitted in December 2021. It is agreed that Pre-Application Meetings have taken place and this timeline is designed to best balance risk. It is expected that the connection will be similar to that delivered for Keadby 2 Power Station and an indicative location is presented in DCO Application Document 4.11.

4.1.6 It is agreed that Gas Capacity is to be secured through a PARCA Application which is to be submitted from April 2022. Pre-Application Meetings have taken place and this timeline is designed to best balance risk.

### Impacted Land

4.1.7 It is agreed that The Keadby 3 Power Station will connect to the National Grid owned electricity and gas apparatus in Work Nos. 2A and 3A of the dDCO. More specifically, the Electricity Connection will be made within the switchbay currently occupied by SSE circuit breaker X1205 which is one of the two connections to Keadby 1 Power Station at present. This is located to the North West of the Keadby 400kV Substation.

4.1.8 The Applicant does not seek powers to reposition any transmission towers transmission overhead lines at this time.

4.1.9 In meeting of 09/12/2021 it was agreed that National Grid would supply a more accurate list of apparatus/assets within Draft Order Limits on provision of a GIS shapefile of the same. This was provided on the same date and is awaited from National Grid.

#### **Protection of Existing Rights**

4.1.10 Additionally, it is agreed that National Grid's rights to retain its apparatus in situ and rights of access to inspect, maintain, renew and repair such apparatus located within or in close proximity to the Order limits will be maintained at all times. National Grid's access to inspect and maintain such apparatus will also not be restricted.



## 5.0 MATTERS NOT AGREED AND NEXT STEPS

5.1.1 Matters not yet agreed and the next steps in respect of discussing or reducing these are as follows:

**Table 5.2: Summary of Next Steps**

<b>Matter Not Yet Agreed</b>	Next Steps
Connection works	National Grid are currently assessing the proposed electricity and gas connection works in Work Nos. 2A and 3A of the draft DCO to ensure adequate provision has been made. National Grid will discuss any concerns with the applicant and update the Examining Authority.
Protective Provisions	The required Protective Provisions are currently being reviewed against the proposals by National Grid and any amendments required will be negotiated between the parties and the Examining Authority will be updated.
Interests of National Grid included in Book of Reference	National Grid are currently reviewing the National Grid land and interests included in the Book of Reference and will update the Applicant and Examining Authority with any concerns.