The Keadby 3 Low Carbon Gas Fired Generating Station

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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 the Environment Agency

The Planning Act 2008

Applicant: Keadby Generation Limited

Date: February 2022

DOCUMENT HISTORY

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GLOSSARY

Abbreviation	Description
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
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
NLC	North Lincolnshire Council
NSIP	Nationally Significant Infrastructure Project
PCC	Proposed Power and Carbon Capture
PINS	Planning Inspectorate
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') with the Environment Agency (**Application Document Ref. 8.2**) has been prepared 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 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 (ail) 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 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.

1.2.6 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.

1.2.7 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:

- a 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 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 Applicant and the Environment Agency ('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 This version of the document summarises the agreements reached between the Parties regarding the matters listed below:

- Draft Development Consent Order and any relevant Protective Provisions;
- Compliance with the Water Framework Directive (WFD);
- Water environment effects, including water quality (including temperature, silt and chemical composition); flood risk and effects on flood alleviation and storage schemes, effects on watercourses and waterbodies, and foul and surface water drainage matters, including demonstrating that all assessments have been made using the most up to date data available at the time of submitting the DCO application;
- The Applicant's Flood Risk Assessment, with particular reference to climate change allowances and the flood emergency response and contingency plan;
- Water abstraction for the operation of the Proposed Development;
- Combined heat and power readiness;
- Demonstrating carbon capture readiness;
- Biodiversity enhancement, including effect on water habitat;
- Land contamination and groundwater, including source protection zones and groundwater dependent ecosystems;
- Waste management;
- Environmental permits, consents and licences; and
- Mitigation, risk management and enhancement measures, including Construction Environmental Management Plan/ Code of Construction Practice.

1.6 Status of this version

1.6.1 This is the first draft of this SoCG.

1.6.2 The document is structured as follows:

- Section 2 – summarises the role of the Environment Agency;
- Section 3 - sets out details of consultation with the Environment Agency to date;
- Section 4 - sets out the matters agreed between the parties in respect of the Application; and
- Section 5 – sets out any matters that are yet to be agreed and where discussions are on-going between the parties and summarises next steps.

2.0 THE ROLE OF THE ENVIRONMENT AGENCY

2.1.1 The Environment Agency is a non-departmental public body, the purpose of which is 'to protect or enhance the environment taken as a whole', so as to contribute to 'the objective of achieving sustainable development' (Environment Act, 1995).

2.1.2 The Environment Agency is a statutory consultee in respect of all DCO applications that are likely to affect land in England. Annex D of Advice Note 11 'Working with Public Bodies' produced by the PINS sets out in detail the role of the Environment Agency in the DCO process, including the level of input and agreement that might be expected from the Environment Agency.

2.1.3 The Environment Agency's role covers various topics including:

- managing the risk of flooding from main rivers, reservoirs and the sea;
- regulating major industry and waste;
- treatment of contaminated land;
- water quality and resources;
- fisheries;
- inland river, estuary and harbour navigation; and
- conservation and ecology of the aquatic environment.

2.1.4 The Environment Agency also has a role as the regulator for the Environmental Permitting regime and is responsible for granting, regulating and enforcing Environmental Permitting requirements for any installation that requires a permit under the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

3.0 SUMMARY OF CONSULTATION

3.1.1 Consultation and technical engagement has been ongoing with the Environment Agency since the scoping stage for the Proposed Development (June 2020). Consultation comments received from the Environment Agency for the Proposed Development are presented in Table 3.1 below.

Table 3.1: Consultation Summary

Date	Details
June 2020 (consultation on Environmental Impact Assessment (EIA) Scoping)	The Environment Agency was consulted by the Applicant and formally by PINS in respect of a request made by the Applicant for an EIA Scoping Opinion for the Proposed Development. Response by the Environment Agency on 12 June 2020 provided advice on the scope of the EIA for the following topics: - **Water Environment and Flood Risk:** advice on drainage, the Water Framework Directive assessment, the FRA and current and future flood management measures. - **Biodiversity and Nature Conservation**: advice on water vole surveys, fish screening, opportunities to incorporate biodiversity and assessment of impact on habitats using the Defra Biodiversity Metric. - **Geology, Hydrogeology and Land Contamination**: support for a Phase I Desk Study and Phase II investigation as required, as well as consideration of landfill sites within and adjacent to the Site.
January 2021 (formal Stage 2 Consultation/response)	The Environment Agency provided comment on the following: - **Water Environment and Flood Risk:** water quality and the FRA

Date	Details
	(including further clarification on several areas such as breach assessment and the critical flood level). Advice was also provided advice on flood risk permits. - **Biodiversity and Nature Conservation:** agreement to the screening/measures to protect eel and the offer of further advice to the Applicant following more information, the justification of receptors scoped in and out and the consideration of thermal uplift within the ES. - **Geology, Hydrogeology and Land Contamination**: confirmation of review of the PEI Report chapter and that it was deemed acceptable.
February 2021 (technical engagement flood risk and approach to bridges)	Additional technical engagement to explore issues raised in the January 2021 formal consultation response and agree actions.
March 2021 (additional technical engagement following Stage II Consultation)	Further advice was provided by the Environment Agency in March 2021 regarding flood risk and the site specific breach model which was to be undertaken. Further flood risk permit advice was also provided.
March 2021 (Pre-Application Environmental Permit)	The proposed approach to permitting including assessment of emissions to air was discussed. The Environment Agency recommended relevant guidance regarding the approach to follow for the air quality assessment.
April 2021 (Additional Consultation)	Further consultation was held between the Parties in April 2021 to discuss the proposed additional crane oversail area in the River Trent, floodplain

Date	Details
	compensation and permits related to works within a Main River. An additional meeting to discuss and agree the approach to flood mitigation including critical infrastructure and to agree timescales for review of the breach model and FRA took place, noting the timescales for application submission.
July 2021 (Post-Submission Response)	Following submission of the DCO application, the Environment Agency provided comments to the Applicant on 02 July 2021 following their review of the flood risk model files and the FRA submitted (**APP-084**). On 09 July 2021 further information was provided by the Environment Agency to provide additional clarity on uncertainty analysis. The Applicant submitted revised breach models (Keadby Breach Model) to the Environment Agency on 28 July 2021 for review.
August 2021 post submission technical engagement	The Applicant wrote to the Environment Agency to discuss the status of the submitted Application, any queries arising following review of the draft DCO and Application documents, the examination process and the preparation of a SoCG. The Environment Agency confirmed receipt and provided an update on outstanding matters, comprising the (then) ongoing FRA modelling and matters relating to Environment Agency land holdings.
September 2021 (Relevant Representation (**AS-002**))	The Environment Agency submitted a relevant representation to PINS in September 2021. This covered matters including air quality, biodiversity and nature conservation, water environment

Date	Details
	and flood risk, geology, hydrogeology and land contamination and Environment Agency land holdings. It was confirmed that the Environment Agency has no objection in principle to the Proposed Development, as submitted, but may pursue an objection in relation to land interests the applicant seeks to acquire. It was also confirmed that the objection in respect of flood risk is capable of being resolved and that further details on this issue will be provided in Written Representations.
September 2021 (Applicant Submission)	An updated (VP2.0) FRA was submitted to the Environment Agency on 28 September 2021.
October 2021 (Post-Submission Response)	The Environment Agency provided a response to the Applicant on 12 October 2021 with comment on the updated VP2.0 FRA and confirmed the suitability of the updated hydraulic model. Recommendations were proposed for amendments to the draft DCO Requirement 14 – this is discussed further in Section 4 below. The Environment Agency National Permitting Service also provided a copy of their comments to be provided in Written Representations on the Carbon Capture Readiness (CCR) of the Proposed Development, confirming that they consider that the Applicant has set aside enough land to accommodate the carbon capture plant (CCP) however, despite applying to build a carbon capture plant at the same time as the power plant, they felt that the Applicant has not yet demonstrated that “there are no foreseeable barriers” to the technical feasibility of installing their chosen carbon plan. The Applicant has

Date	Details
	provided further information on this matter in Appendix 1. The Applicant submitted the revised draft FRA to the Examining Authority at the Procedural Deadline (**AS-010**).

4.0 MATTERS AGREED

4.1.1 The below Table 4.1 contains a list of 'matters agreed' along with a concise commentary of what the item refers to and how it came to be agreed between the two parties.

Table 4.2: List of Matters Agreed between the Applicant and the Environment Agency

Matter Agreed	Commentary
Consultation	A summary of pre-application consultation is contained in the Consultation Report (**APP-030**) and Chapter 8: Air Quality (**APP-051**), Chapter 11: Biodiversity and Nature Conservation (**APP-054**), Chapter 12: Water Environment and Flood Risk (**APP-055**); Chapter 13: Geology, Hydrogeology and Land Contamination (**APP-056**) of ES Volume I. The updated Flood Risk Assessment provided to the Environment Agency in September 2021 and to be submitted into examination provides further detail in relation to the consultation between Parties on matters of flood risk. It is agreed that the consultation summary in Section 3 of this SoCG provides an accurate record of consultation with the Environment Agency on application matters to date.
Air Quality and Environmental Permitting	The proposed approach to permitting including assessment of emissions to air was discussed in March 2021 The Environment Agency recommended relevant guidance regarding the approach to follow for the air quality assessment. Engagement has also been undertaken with the Environment Agency over the development of best available techniques (BAT) for carbon capture operations. The Environment Agency's Air Quality Modelling and Assessment Unit (AQMAU) has also been consulted in February 2021 over the application of the Atmospheric Dispersion Modelling System (ADMS) amines chemistry module. The Environment Agency has provided a guidance note on the approach to assessment of amine and N-amine emissions and this has been applied to the air quality assessment.

Matter Agreed	Commentary
	It has been agreed between the Applicant and the Environment Agency that the environmental permit for the Proposed Development should be applied for as a variation to the existing Keadby Power Station environmental permit (EPR/YP3133LL/V011). The permit variation application was submitted to the Environment Agency in July 2021 and included an appraisal of BAT and air impacts based on the current design understanding. It is agreed by both Parties that a subsequent permit variation may be required if the design changes.
Biodiversity including effect on water habitat	**Chapter 11:** Biodiversity and Nature Conservation of ES Volume I (**APP-054**) includes an assessment on the potential effects of the Proposed Development on ecology and is supported by technical Appendices 11A to 11H of the ES Volume II (**APP-076 – APP-083)**) and accompanying Figures 11.1 and 11.2 (**APP-121 and APP-122**). It is agreed between the Parties that the relevant ecological aspects of the Proposed Development that fall within the remit of the Environment Agency have been adequately addressed. The Parties agree that the development design and impact avoidance measures outlined as embedded mitigation in Section 11.5 of **Chapter 11:** Biodiversity and Nature Conservation of ES Volume I (**APP-054**) are appropriate and that all mitigation measures that would be necessary to ensure compliance with legislation relating to those protected species that fall within the remit of the Environment Agency, as well as good practice measures to safeguard animal welfare, are included. It is further agreed that the specified control measures within the Framework Construction Environmental Management Plan (CEMP) (**APP-160**), including protected species surveys noted

Matter Agreed	Commentary
	as required under 'Monitoring/ Additional Survey Requirements' in Table 5) and which are to be secured via Requirement 6 of the draft DCO (**APP-005**), are appropriate for the control of potential effects on protected species that fall within the remit of the Environment Agency during construction of the Proposed Development. As is standard best practice, all ecological surveys will identify locations within the potential zone of influence of the Proposed Development that support conditions potentially suitable for riparian mammals including water vole. It is further agreed that Requirement 5(4) and 5(5) of the Draft DCO (**APP-005**), together with the environmental permit obligations, appropriately controls the design of the selected cooling water abstraction to provide compliance with the Eels (England and Wales) Regulations 2009, noting the design and impact avoidance measures in Section 11.5 to protect all life stages of eel and commitment to the final design which would be based on a BAT assessment in accordance with the Joint Environment Protocols. The Applicant has proposed in the Landscaping and Biodiversity Management and Enhancement Plan (**APP-039**) that a Fish Management Plan will be prepared and agreed with relevant stakeholders (including the Environment Agency – refer to paragraph 4.7.9) to specify the measures and supervision required to deliver legislative compliance during installation and drawdown of any cofferdam used for construction of either the river Trent or Stainforth and Keadby Canal water abstraction options and which would also apply (if relevant) to replacement of the existing Mabey Bridge over the Hatfield Waste Drain Local Wildlife Site (LWS). The Parties agree that this is suitably secured via existing Requirements of the DCO including (Requirement 6(4) which requires a landscaping

Matter Agreed	Commentary
	and biodiversity management and enhancement plan to be submitted to and approved by the relevant planning authority and 6(7) which requires that this plan must be in accordance with the principles of the indicative landscaping and biodiversity management and enhancement plan (APP-039) submitted. The Fish Management Plan is further controlled via the CEMP (Requirement 17 of the Draft DCO (APP-005) which must be prepared in accordance with the Framework CEMP (**APP-160**) – it is agreed to include the Fish Management Plan as a specific item in this Requirement and include the Environment Agency as a consultee to the discharge of this aspect of the requirement. It is agreed that biodiversity enhancement measures should be adopted within the Proposed Development design and that such measures should include, but not be restricted to, appropriate shrub and tree planting. The Environment Agency defers to Natural England on all other biodiversity matters relating to this Application.
Land Contamination and Groundwater	The Application includes a Phase I Desk Based Assessment in Appendix 13A of ES Volume II (**APP-087**) and additional supporting appendices (**APP-088** and **APP-089**). Taken together, it is agreed that the Applicant's approach to assessing land contamination is aligned with the Environment Agency's Land Contamination: Risk Management (LCRM) guidance and uses a tiered, risk-based approach drawn together by **Chapter 13** of ES Volume I (**APP-056**). It is agreed between the Parties that the ES provides a satisfactory assessment of the potential pollution risks to surface water and groundwater including impacts of the Proposed Development on source protection zones (SPZ) during construction and operation of the Proposed Development and that the impact avoidance and

Matter Agreed	Commentary
	mitigation measures identified and specified by control measures within Requirement 15 (Contaminated land and groundwater) of the draft DCO (**APP-005**) are appropriate. The Parties agree that controls on the method of piled foundations secured by Requirement 30 in the draft DCO (**APP-005**) are appropriate in relation to protection of controlled waters.
Hydrology and water resources including compliance with the Water Framework Directive (WFD)	The Environment Agency provided advice on the WFD assessment during the pre-Application stage. An assessment has been undertaken which considers the potential effects of the Proposed Development on the water environment, presented in Chapter 12: Water Environment and Flood Risk (**APP-055**) supported by an assessment of the potential impacts on the WFD status of waterbodies that may be affected by the Proposed Development detailed in Appendix 12B: Water Framework Directive Assessment (ES Volume II – **APP-085**). It is agreed that the Environment Agency is satisfied with the approach used within the WFD assessment and that this uses the most up to date data from the Environment Agency, where this has been requested. Taken together, it is agreed between the Parties that these documents provide a satisfactory assessment of all relevant potential pollution risks to surface water and groundwater bodies during construction and operation of the Proposed Development and that the design and impact avoidance and mitigation measures identified and specified by control measures within Requirements 5(2) and 5(5) (Detailed Design), and Requirement 13 (Foul Water Drainage) of the draft DCO (**APP-005**) are appropriate. It is further agreed that the controls during construction are secured via a Framework Construction Environmental Management Plan (CEMP) (**APP-**

Matter Agreed	Commentary
	160). The final CEMP will be submitted for approval as secured by draft Requirement 17.
Flood risk	The majority of the Proposed Development Site lies within Flood Zone 3 with a small area in Flood Zone 2. The Proposed Development Site is at residual flood risk from the Isle of Axholme and the tidal River Trent, should a breach of the flood defences occur. The Parties agree that the revised Flood Risk Assessment (FRA) (**AS-010**) adequately assesses and presents the potential flood risks and demonstrates that the proposed mitigation measures are adequate to minimise flood risk. It is also agreed that the FRA is based on the appropriate assumptions and data. The FRA contained in **Appendix 12A** of ES Volume II (**APP-084)** was updated to incorporate the results from modelling of a site-specific breach scenario adjacent to the Proposed Development Site, using the latest available detailed hydraulic modelling (Tidal Trent Model, Mott and Macdonald, 2013, including updated 2014 interim water levels), updated climate change allowances published in July 2020 and to reflect updated sensitivity tests undertaken using the Humber Extreme Water Levels that are now available (2020). The Parties agree that the updated hydraulic model and updated FRA (including the design and impact avoidance/flood mitigation measures included) demonstrate that there would be negligible on or off-site impacts as a result of the Proposed Development in relation to residual flood risk. It is agreed that the updated FRA provides a satisfactory conceptual drainage strategy to inform the assessment of potential flood risk.

Matter Agreed	Commentary
	It is agreed that the draft DCO (**APP-005**) Requirement 14(2) and Schedule 11 will require to be updated to reference the adjusted finished ground level for the Main Site (Work 1A and 1C) of 2.8m above ordnance datum: *"14. – (2) The scheme submitted and approved pursuant to sub-paragraph (1) must provide a minimum finished ground level for Works Nos. 1A and 1C of 2.8m AOD and must be implemented as approved and maintained throughout the construction of the authorised development unless otherwise agreed with the relevant planning authority."* With the exception of this change to the draft DCO wording, the Parties agree that the wording in Requirement 14 provides an appropriate mechanism to secure the necessary mitigation measures in relation to flood risk mitigation, including the safe refuge area set at 4.4m AOD (above the Critical Flood Level).
Water quantity including alternative sources	Cooling water required for the Proposed Development would either be abstracted from the Stainforth and Keadby Canal or the River Trent and discharged to the River Trent, as outlined in **Chapter 4:** The Proposed Development (ES Volume I – **APP-047**). The Environmental Statement including Chapter 12: Water Environment and Flood Risk (**APP-055**) and paragraphs 6.8.22 – 6.8.25 of Water Appendix 12B: Water Framework Directive Assessment (ES Volume II – **APP-085**) addresses matters related to the quantity of water proposed to be abstracted including assessment of effects on relevant WFD waterbodies (Humber Upper WFD waterbody – i.e. River Trent Sheffield and South Yorkshire Navigation (New Junction and Stainforth and Keadby) WFD waterbody).

Matter Agreed	Commentary
	It is agreed that the Parties, together with the Canal and River Trust, undertook pre-application engagement on 5 November 2021 in order to agree details of the Water Abstraction Licence (WAL) application that has now been submitted by the Canal and River Trust to the Environment Agency for the provision of water from the canal to supply the Proposed Development. The Environment Agency will undertake an assessment of the environmental impacts and effects of the quantity and sources of water abstraction and discharge during its determination process of the WAL. .
Combined heat and power (CHP)	A Combined Heat and Power Readiness Assessment is included as **APP-036**. To date the Environment Agency has not been able to assess its adequacy but CHP will be considered during the environmental permit determination.
Carbon capture	A Carbon Capture Statement is included as **APP-037**. It is agreed that this adequately explains the carbon capture related infrastructure proposed and demonstrates that the Applicant has set aside enough land to accommodate the carbon capture plant (CCP). It is also agreed that Requirement 33 (Carbon capture plant) of the draft DCO (**APP-005**) adequately secures the requirement for other consents, licences and permits to facilitate operation of the carbon capture related infrastructure including connections into the National Grid Carbon Gathering Network. It is noted that the Environment Agency has sought additional clarifications on the CCR assessment, and that the Applicant has provided a written response to the Environment Agency's questions in Appendix 1.
Construction Environmental	It is agreed that the mitigation, management and enhancement measures outlined within the Framework Construction Environmental

Matter Agreed	Commentary
Management Plan and Waste Management	Management Plan (CEMP) (**APP-160**) includes the necessary principal controls to adequately manage environmental risks associated with the construction of the Proposed Development including but not limited to pollution control measures and waste management. It is also agreed that draft Requirement 17 (Construction environmental management plan) of the draft DCO (**APP-005**) which secures the preparation and agreement of a final CEMP prior to construction of the Proposed Development is appropriate for controlling the environmental effects of construction. The wording of draft Requirement 17, subject to the Environment Agency's agreement regarding the addition of the Fish Management Plan, is agreed as follows: *"17.—(1) No part of the authorised development may commence, save for the permitted preliminary works, until a construction environmental management plan has been submitted to and, after consultation with Natural England and the Environment Agency, approved by the relevant planning authority.* *(2) The plan submitted and approved must be in accordance with the framework construction environment management plan and incorporate—* *(a) a code of construction practice, specifying measures designed to minimise the impacts of construction works;* *(b) a scheme for the control of any emissions to air;* *(c) a soil management plan;* *(d) a site waste management plan;* *(e) a sediment control plan;* *(f) a scheme for environmental monitoring and reporting during the construction of the authorised development, including measures for undertaking any corrective actions;* *(g) a scheme for the notification of any significant construction impacts on local residents and for handling any complaints received from local*

Matter Agreed	Commentary
	residents relating to such impacts during the construction of the authorised development; and *(h) a fish management plan.* *(3) All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan unless otherwise agreed with the relevant planning authority."*

5.0 MATTERS NOT AGREED AND NEXT STEPS

5.1.1 This SoCG sets out the agreements that have been reached between the Parties to date in respect of the matters relating to the Proposed Development requested by the ExA outlined in Section 1.7 of this SoCG.

5.1.2 Further clarification has been sought by the Environment Agency regarding the following matters:

- Demonstration that there are no foreseeable barriers to the technical feasibility of installing the Applicant's chosen carbon capture plant; and
- Matters relating to land acquisition of Environment Agency land interests.

5.1.3 The Parties are both committed to taking forward discussions on the matters above as necessary, so whilst they are not yet agreed, both Parties hope to reach agreement in the near future.

5.1.4 The following operational effects are being considered by the Environment Agency as part of their review of supporting information to the application for a substantial variation to the environmental permit and the Water Abstraction Licence application (submitted by the Canal and River Trust) that are currently being evaluated:

- Availability of cooling water from Stainforth and Keadby Canal;
- CHP;
- Air quality; and
- Noise effects.

6.0 REFERENCES

HM Government (2020a) *Energy White Paper, Powering our Net Zero Future*.

SSE (2020) *A Greenprint for Building a Cleaner More Resilient Economy*.

SSE plc (2020b) *Our Strategy*.

Appendix 1

The Keadby 3 Low Carbon Gas Power Station Project	Planning Inspectorate Ref: EN010114	
Guidance Section	Environment Agency Comments October 21	Applicant's Response
C1 - Design, Planning Permissions and Approvals	The Applicant needs to address how they will maintain the overall proposed capture efficiency of 90%, when operating the combustion plant flexibly in dispatchable mode, and if necessary, review the design of the proposed plant to include any extra plant or equipment required.	The AECOM start up and shut down study for the Department for Business, Energy and Industrial Strategy (BEIS) outlines a number of alternative approaches to achieving the required dispatchability at a high level of carbon capture rate. The potential options include segregating solvent inventory during start-up, adding additional solvent storage, dedicated heat storage and rapid start of the steam cycle. Segregated solvent inventory can be combined with the three other options, reducing the cost and footprint requirements of deploying any of the flex-carbon capture and storage (CCS) options. The carbon capture plant (CCP) design for the Proposed Development includes a suitably sized lean amine inventory with an additional tank installed for solvent storage if required. There is therefore sufficient space within the layout to accommodate the necessary infrastructure to allow the plant to run dispatchably, and its design has specifically been made with the intention of the plant running in dispatchable mode.
C1 - Design, Planning Permissions and Approvals	The Applicant needs to update the site plan to clearly show the location and extent of the 6.55Ha of land set aside for the CCP.	Appendix A drawing 60625943-CCR-DR-02 Rev B shows the location and extent of the 6.55 hectares (ha) of land set aside for the CCP. The Works Plans accompanying the DCO application (**APP-012**) clearly set out the area allocated to the CCP.
C2 - Power Plant Location	The Applicant needs to identify, on the site plan, the CO2 pipeline within the plant and the exit point from the curtilage of the plant	Appendix A drawing 60625943-CCR-DR-01 Rev B shows indicative CO_2 pipeline route, from the CO_2 compressors to the Proposed Development Site boundary. The connection to the CO_2 transportation pipeline is at or within the Proposed Development Site boundary and it has been confirmed by National Grid Carbon that the Humber Low Carbon Pipeline (HLCP) will run to the Proposed Development Site to facilitate the connection. The Proposed Development will connect into the HLCP and the East Coast Cluster. National Grid is consulting on the final route of the HLCP as part of their DCO application which is being prepared and will be submitted for examination in 2022. Maps of the likely route

		are available through their published information. The routing of the HLCP does not form part of the Proposed Development.
C3 - Space Requirements	The Applicant needs to provide details of the space requirements (m2) for at least the following: a) CO2 capture equipment, including any flue gas pre-treatment and CO2 drying and compression. b) Space for routing flue gas duct to the CO2 capture equipment. c) Steam turbine island additions and modifications (e.g. space in steam turbine building for routing large low pressure steam pipe to amine scrubber unit). d) Extension and addition of balance of plant systems to cater for the additional requirements of the capture equipment. e) Additional vehicle movement (amine transport etc). f) Space allocation for storage and handling of amines and handling of CO2 including space for infrastructure to transport CO2 to the plant boundary. g) The hybrid cooling towers, wastewater treatment plant and additional electrical items such as transformers, switching gear and cabling. Along with an explanation of how the space allocations have been determined. e.g., provision of basic calculations using the known volumes of CO2 which will have to be processed to justify the size and type of processing equipment chosen.	Appendix A drawing 60625943-CCR-DR-03 Rev B shows space provision for requested functional areas. Area A (22,451 m^2) is allocated to CO_2 capture equipment, including any flue gas pre-treatment and CO_2 drying and compression Area B (2,116 m2) is allocated to routing flue gas duct to the CO_2 capture equipment. This area includes the booster fans necessary to accommodate the expected pressure drop from the capture equipment and its effects on the gas turbine. The Proposed Development is a new build Power and Carbon Capture (PCC) project and as such there are no additions or modifications. The Applicant confirms that steam for the CCP will come from the steam turbine. Exact details of extraction conditions, routing and tie-ins would be determined in detail as part of the future design phase. Area D (8,353 m^2) is allocated to balance of plant systems to cater for the additional requirements of the capture equipment. The raw water treatment plant and tanks are located in lower Area D (items 21, 22 and 23 as shown in 60625943-CCR-DR-01). Electrical and instrumentation buildings are located in the main functional areas and house low voltage (LV) transformers, motor controllers and instrumentation cabinets. A perimeter roadway is provided for the vehicle movement associated with process chemicals, according to standard process industry design practice. Note that amine-based technology has been assumed for this post combustion capture system and other liquid solvent mixtures are not considered. Area F (4,194 m^2) is allocated for storage and handling of amines and handling of CO_2 including space for infrastructure to transport CO_2 to the plant boundary. Area G (12,803m^2) is hybrid cooling towers, wastewater treatment plant and additional electrical items such as transformers, switching gear and cabling. The closed circuit cooling water system circulates ~ 79,000 tonnes per hour (tph) with a ~ 7 degree delta T. Electrical and instrumentation buildings are located in the

		main functional areas and house LV transformers, motor controllers and instrumentation cabinets. Space allocations have been based upon the power plant performance cycle and, emissions and carbon capture ratio, process flow definition, heat and material balance design and associated equipment sizing.
C5 - Flue Gas System	The Applicant needs to provide a statement is required describing the space allocation and configuration requirements of the SCR equipment. The location of this equipment also needs to be shown on a scaled site plan.	Selective catalytic reduction (SCR) will be installed prior to the CCP to reduce inlet NOx concentrations, to be achieved with injection within the heat recovery steam generator (HRSG) to exhaust duct transition area and space required for ammonia or urea storage; both are accommodated within the combined cycle gas turbine (CCGT) plant area available. The SCR and HRSG are situated in the lower half of the CCGT plant area shown on drawing 60625943-CCR-DR-02 Rev B (total plant area 17,717m^2)
C6 - Steam Cycle	The Applicant needs to provide details of where steam to the capture plant will come from, and if it comes from a standalone boiler or the HRSG they need to justify this choice and demonstrate that it could be considered comparable, in terms of energy efficiency, to an integrated system taking steam from the turbine once carbon capture is operational. A statement is also required giving the steam pressure at the steam turbine IP/LP crossover (or other steam extraction point) if this is the chosen option.	The steam supply is integrated with the proposed PCC as part of the steam cycle design of the CCGT and does not rely on a stand-alone boiler. The pre-FEED design has been based upon the following steam conditions that will be refined as part of the future FEED design phase Temperature 148 ^oC Pressure 4.5 bara Mass flow 95 kg/s It is confirmed that the CCGT can be configured to deliver this steam requirement from the HRSG and that the CCGT will be designed to provide this steam from the outset.
C8 - Compressed Air System	A statement is required of estimated additional compressed air requirements, along with an estimate of the size of the compressor(s) and their location on a scaled site plan.	The Proposed Development is a new build Power and Carbon Capture project which shall be provided with a single compressed air package, shared between the power and capture plant, and sized accordingly. As such, no additional separate compressed air equipment is required. Compressed air for instruments and general service air will be sized at detailed design stage. The estimated 8m * 2m space is available within the CCGT plant area.