KEADBY 3
CARBON CAPTURE POWER STATION

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

Document Ref: 8.4

Planning Inspectorate Ref: EN010114

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 Marine Management Organisation

The Planning Act 2008

Applicant: Keadby Generation Limited

Date: April 2022

DOCUMENT HISTORY

Document Ref	8.4		
Revision	VP2.0		
Author	AECOM Limited		
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Approved By			
Signed	Richard Lowe	**Date**	April 2022
Document Owner	AECOM		

GLOSSARY

Abbreviation	Description
AGI	Above ground installation
AIL	Abnormal Indivisible Load
APFP	Applications: Prescribed Forms and Procedure
CCGT	Combined Cycle Gas Turbine
CCP	Carbon dioxide capture plant
CCUS	Carbon capture, utilisation and storage
CEMP	Construction Environmental Management Plan
CWS	Cooling water system
DCO	Development Consent Order
DML	Deemed marine licence
EIA	Environmental Impact Assessment
ES	Environmental Statement
HP	High pressure
HRA	Habitats regulations assessment
HRSG	Heat Recovery Steam Generator
ICCI	In-combination Climate Change Impact
MCA	Maritime and Coastguard Agency
MMO	Marine Management Organisation
MW	megawatts
NEP	Northern Endurance Partnership
NLC	North Lincolnshire Council
NRA	Navigational Risk Assessment

Abbreviation	Description
NSIP	Nationally Significant Infrastructure Project
PCC	Proposed Power and Carbon Capture
PEI	Preliminary Environmental Information
PINS	Planning Inspectorate
SoCG	Statement of Common Ground
SoS	The Secretary of State
ZCH	Zero Carbon Humber

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TABLES

1.0 INTRODUCTION

1.1 Overview

1.1.1 This Statement of Common Ground ('SoCG') with the Marine Management Organisation (MMO) (**Application Document Ref. 8.4**) 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 (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 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-057**) 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 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 Marine Management Organisation ('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 matters listed below:

- The issues related to the interests of the MMO; and
- The content and adequacy of the draft Deemed Marine Licence (DML).

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 MMO;
- Section 3 - sets out details of consultation with the MMO 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 MARINE MANAGEMENT ORGANISATION

2.1.1 The MMO is an executive non-departmental public body whose purpose is to protect and enhance the UK marine environment and support economic growth by enabling sustainable marine development.

2.1.2 The MMO's role in relation to the 2008 Act are as follows:

- as a statutory consultee at the pre-application stage under s.42(1)(aa) of the 2008 Act and as an interested party during the examination stage; and
- as a licensing and consenting body.

2.1.3 Annex B to Planning Inspectorate Advice Note 11: Working with Public Bodies in the infrastructure planning process (PINS, 2013) provides a summary of the MMO's role as a consenting body alongside the 2008 Act; an extract from this guidance is included below:

2.1.4 "The 2008 Act enables DCOs for projects which affect the marine environment to include provisions which deem marine licences […] Where developers choose to have a marine licence deemed by a DCO, it is envisaged that developers will seek to agree the draft marine licence with the MMO prior to submitting their DCO application to the Planning Inspectorate. The conditions included in a marine licence should be enforceable, clear and sufficiently detailed to allow for monitoring and enforcement. The MMO will seek to ensure wherever possible that any deemed licence is generally consistent with those issued independently by the MMO. The MMO is responsible for enforcing marine licences regardless of whether these are 'deemed' by DCOs or are consented independently by the MMO. The MMO may vary, suspend or revoke a marine licence if it appears that any of its provisions have been breached. The circumstances in which the MMO may take enforcement action are set out under s.72 of the MCAA. The MMO is also responsible for ensuring the discharge of conditions under independently consented and deemed marine licences."

3.0 SUMMARY OF CONSULTATION

3.1.1 Consultation and technical engagement has been ongoing with the MMO since the scoping stage for the Proposed Development (June 2020). Consultation comments received from the MMO 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 MMO was consulted in respect of a request made by the Applicant for an EIA Scoping Opinion for the Proposed Development. Response from the MMO provided advice on the scope of the EIA for the following topics: **Ecology and Nature Conservation:** • Recommended that aquatic surveys not be scoped out of assessment at that time. **Water Environment and Flood Risk:** • Requested greater engagement in relation to a Deemed Marine Licence (DML); • Advised that the ES should include greater level of detail on construction methodology and associated impacts (including the installation of intake and outfall pipes); • Requested further information in the ES on whether piling and dredging would be required and the impacts on fish; • Requested comments on improved species specific assessment of migratory fish; • Requested consideration of the underwater noise and vibrations

Date	Details
	construction effects of the Proposed Development; • Requested confirmation of whether the effects of thermal/ chemical releases will be assessed against fish receptors; • Requested a summary of any relevant in-combination climate change impact (ICCI) results should; and • Provided commentary on clarification and justification for study areas covering worst-case impacts.
January 2021 (Stage 2 Consultation/response)	The MMO provided the following comments on the PEI Report: **Ecology and Nature Conservation:** • Requested improved report signposting on ecological receptors; • Confirmed that they do not yet agree that the proposed development is deemed to have a negligible ecological effect on an area of mudflat; • Confirmed that they do not yet agree that it is unlikely that construction will have a significant impact on lamprey and other fish movements; • Greater level of detail requested on how temporary and permanent impacts to aquatic habitats are likely to occur required; • Greater level of detail requested on the vulnerability of migratory

Date	Details
	fish such as Atlantic salmon required; • Greater level of detail requested on construction methodology and associated impacts required; • Additional description requested of the environment for fish; and • Further detail requested estimates of the timing and duration of piling and other construction activities within the River Trent required. **Water Environment and Flood Risk:** • Requested further assessment of cumulative or in-combination impacts on fish from other operational sites within the study area. **Noise and Vibration:** • Queried the predicted energy levels for sheet piling and source of information and noted that a underwater noise assessment has not been provided at that time.
March 2021 (additional technical engagement following Stage 2 Consultation)	The MMO was consulted in March 2021 following Stage 2 Consultation. No comments were noted.
March/ April 2021 (draft Deemed Marine Licence - DCO/2020/00003 (Keadby 3)	The MMO was provided with a copy of the draft DML for comment. Comments on the first draft of the DML were provided by MMO in April 2021 for consideration by the Applicant.
May 2021 (Technical Engagement)	The MMO, including the Centre for Environment Fisheries and Aquaculture

Date	Details
	Science (CEFAS) provided the following comment on the ES: **Ecology and Nature Conservation:** • Confirmed that they were satisfied with the effects of construction on lamprey being labelled as negligible and were satisfied with the mitigation measures proposed to protect adult salmon; • Confirmed that they were satisfied with proposal of no piling at night as a means of minimising risk of impact on aquatic species; and • The MMO provided recommendations on the Coastal Processes section of the notes and on the wording for piling licence conditions. **Water Environment and Flood Risk:** • Recommended details on local hydrodynamics (e.g. tidal range/currents and river flow) be included with the sediment details of the Coastal Processes section of the notes.
May 2021 (draft V2 Deemed Marine Licence - DCO/2020/00003 (Keadby 3)	Following a meeting between Parties, including CEFAS, an updated draft DML was provided for final comment in advance of submission of the draft DCO and Application.
September 2021 (Relevant Representation) (RR-006)	The MMO submitted a relevant representation to PINS in September 2021 noting that this did not include comments from CEFAS. In summary, the following comments were made:

Date	Details
	• A number of comments on the draft DCO (**APP-005**) including DML, including a disagreement with the time limit on condition discharging, note on the wish to review any piling method statement if piling takes place below MHWS, requesting a review of bathymetric surveys, inclusion of restrictions on night-time piling within the DML and a number of other proposed changes to wording and details; • Requested clarity that no dredging or disposal at sea is planned. Also requested further detail and references within the ES relating to Coastal Processes; and • Provided comments on Appendix 11H: Underwater Sound Effects on Fish (**APP-083**), including on the noise propagation model, noting that if works are to be undertaken in the Canal, impacts on European Eel would also need to be assessed.

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 Marine Management Organisation

Matter Agreed	Commentary
Consultation	A summary of pre-application consultation is contained in the Consultation Report (**APP-030**), and Chapter 9: Noise and Vibration (**APP-052**), Chapter 11: Biodiversity and Nature Conservation (**APP-054**) and Chapter 12: Water Environment and Flood Risk (**APP-055**) in ES Volume I. It is agreed that the consultation summary in Section 3 of this SoCG provides an accurate record of consultation with the MMO on application matters to date.
Dredging or disposal at sea	The MMO requested in their relevant representation that the Applicant provide clarity on whether any dredging or disposal at sea is required for the Proposed Development. The Applicant can confirm that no dredging or disposal at sea is required for the Proposed Development and therefore it is agreed that no further assessment is needed on this matter in the draft DCO/DML.
Adequacy of the Environmental Statement and other relevant documents associated with the DCO application	It is agreed that the MMO has been involved throughout the pre-application period to help inform the EIA. It is noted that the MMO has sought additional clarifications on Appendix 11H Underwater sound effects on fish (**APP-093**) and in relation to scour (refer to Coastal Processes below) and that the Applicant has provided additional information in it's comments on the MMO's Relevant Representation at Deadline 1 (REP1-021) and in its responses to the ExA first written questions at Deadline 2 (**REP2-006** - Q1.1.6 and Q1.3.15) which satisfactorily address both issues. It is agreed for all other matters of regulatory interest to the MMO that the methods used to inform the assessment of effects upon marine environment and associated topics are appropriate and in line with current best practice and guidance.

Matter Agreed	Commentary
Confirmation of a single 'lead' Defra body concerned with the operation of the Proposed Development, including Cooling Water System (CWS) operation	Pursuant to discussions with the MMO during the pre-application period as summarised in Section 3 above, it is agreed that the Environment Agency will act as the technical lead with respect to operational considerations for the Proposed Development (including the operation of the CWS and discharges under the Environment Permit).
Marine ecology including underwater sound effects on fish	The assessment of effects of the Proposed Development in terms of marine ecology are set out in Chapter 11: Biodiversity and Nature Conservation (**APP-054**) and the following supporting Appendices in ES Volume II: • Appendix 11G Aquatic Ecology Survey Report (**APP-082**); and • Appendix 11H Underwater sound effects on fish (**APP-093**). The MMO provided comment in their Relevant Representation (Section 7) related to underwater sounds effects on fish (from piling works associated with the construction of the cofferdam, if required, in the River Trent). It is agreed that Appendix 11H provides a site specific noise assessment using a source-pathway-receptor approach to assess potential impacts on all relevant species (receptors) with potential to occur in the zone of influence of the Proposed Development. It is further agreed, in relation to the sound source, that the Applicant has applied a precautionary approach to the assessment by using realistic worst-case assumptions based on typical cofferdam construction techniques in marine and tidal conditions and assessing impact piling as the potential worst-case scenario. It is recognised that the MMO has suggested an alternative methodology for the prediction of underwater sound impacts at receptors. However, the alternative approach would not result in any material change in the assessment or conclusions, or to the

Matter Agreed	Commentary
	embedded mitigation proposed and committed to within the draft DCO requirements. The Parties agree that the assessment of underwater sound effects on fish (para 2.1.13) correctly recognises the potential risk of impact on local fish receptors, particularly disturbance or displacement from the proposed piling works including potential for effects across the full 150m width of the river and including potential barrier effects to fish movement. On this basis, it is agreed that the mitigation, management and enhancement measures outlined within the Framework Construction Environmental Management Plan (CEMP) (**APP-160**) includes the necessary principal controls to adequately manage risks to all relevant species of fish associated with the construction of the Proposed Development. It is agreed that a detailed CEMP will be developed by the construction contractor based on the Framework CEMP submitted with the DCO application, as secured by requirement of the draft DCO. The Applicant has also 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 MMO) 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. The Parties agree that this is suitably secured via existing Requirements of the DCO including (Requirement 6(4) which requires a landscaping 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

Matter Agreed	Commentary
	Construction Environmental Management Plan (CEMP) (**APP-160**). It is noted that the Applicant has included a commitment to a seasonal restriction on piling works for Work 4B (River Water Abstraction Option) to avoid the period 1 September to 31 November in order to manage the potential impact on adult Atlantic salmon. In addition, the Applicant has committed to avoid piling works at night (i.e. piling will be restricted to between 07:00 and 19:00) in order to reduce the impact on species which tend to migrate at night/ in darkness such as river lamprey, juvenile/ smolt salmon and juvenile/ (glass) eels. This is set out in the Framework CEMP (**APP-160**) and also documented in Appendix 20A: Schedule of Commitments (**APP-098**) of ES Volume II**.** As agreed between the Parties, this same commitment has been added to the DML. It is agreed for all other matters of regulatory interest to the MMO within the marine environment that the ecological assessments undertaken are appropriate for the scale, nature and location of the Proposed Development and that the application and draft DCO make appropriate commitments to mitigation, where this is required, including through the conditions of the DML, (in so far as they will be amended as agreed in this SoCG).
Coastal processes including hydrodynamics and scour protection	The MMO has noted in their Relevant Representation (para 6.1) that additional details relating to previous licensing are sought for works undertaken for the purposes of Keadby Power Station (paragraph 12.6.3 and para 12.6.21). The Applicant notes that the details requested were issued to the MMO together with a technical note and slidepack following the meeting with the Applicant's technical advisors (AECOM) on 04.05.21. The minutes and information provided (Annex C) is included for completeness in Appendix 1. It is agreed by Parties that cumulative or inter-related coastal processes effects (noted in para 6.2 of the Relevant Representation) have been appropriately

Matter Agreed	Commentary
	considered in Chapter 19: Cumulative and Combined Effects (refer to Table 19.3). In relation to potential use of a cofferdam in the River Trent and the MMO's concerns regarding potential scour associated with use of a cofferdam (para 6.3 of Relevant Representation) - the Applicant confirms that a build-up of river silts and material occurs at the existing intake and outfall structures in the River Trent during shutdown periods and that annual maintenance is required and is undertaken under existing permissions. Consequently, a build up of river silts (rather than scour of river silts) would typically be expected in the event that a cofferdam in the river is required for a short-period. Plate 1 provides photographic evidence of siltation after an extended shutdown at the river intake.  **Plate 1: Siltation at the existing Keadby Power Station River Intake** Given this, and considering the photographic evidence provided, it is agreed that if any localised scour were to occur, it would be likely to be highly localised owing to the tidal energies present in the Trent which result in a dynamic environment that would enable quick infilling. The impacts associated with potential scour are anticipated to be minimal and therefore not significant due to the short duration of the cofferdam works and

Matter Agreed	Commentary
	given the scale of the River Trent. It is agreed by the Parties that the commitment to use localised scour protection rock bags around the base of the River Trent cofferdam, where necessary, secured through the CEMP (a Framework of which is included with the application (as **APP-160**) and Requirement 17 of the draft DCO (**APP-005**) would control any localised scour effects if these were to occur.
Water Quality (including the Water Framework Directive Assessment undertaken for the Proposed Development)	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 Water Framework Directive (WFD) status of water bodies that may be affected by the Proposed Development detailed in Appendix 12B: Water Framework Directive Assessment (ES Volume II – **APP-085**). It is agreed between the Parties that these documents provide a satisfactory assessment of all relevant potential pollution risks to surface water during construction of the Proposed Development. It is further agreed that appropriate controls during construction are secured via a Framework Construction Environmental Management Plan (CEMP) (**APP-160**). The final CEMP will be submitted for approval as outlined in draft Requirement 17. It is agreed in respect of operational effects that the Environment Agency will act as the technical lead for the Proposed Development (including the operation of the CWS and discharges under the Environment Permit.
Habitats Regulations Assessment and Effects on Internationally and Nationally Designated Sites	It is agreed with the MMO that Natural England, as the statutory nature conservation body, will take the 'lead' role in the agreement of the Habitats Regulations Assessment (HRA), building upon the prior engagement and levels of agreement reached during the pre-application period.

Matter Agreed	Commentary
Navigational Risk	It is agreed that the MMO has been consulted on the Navigational Risk Assessment (NRA) for the Proposed Development (included as Appendix 12C of ES Volume II (**APP-086**). It is agreed that the scope of and approach to the NRA was presented to the MMO during pre-application engagement; this included the identification of 'lead' navigational stakeholders, including the Maritime and Coastguard Agency (MCA), PD Ports and Trinity House. The Parties agreed that the navigational stakeholders identified above will take the 'lead' role in the agreement of the NRA, building upon the prior engagement and levels of agreement reached during the pre-application period.
The scope, content and drafting of the DML	In line with the Planning Inspectorate Advice Note 11, the Applicant has applied for a Marine Licence which is 'deemed' within the draft DCO. As advised by PINS, the MMO has been invited to comment on the working draft and final draft DML prior to submission with the draft DCO (**APP-005**). It is agreed that the MMO has been provided with an appropriate opportunity to review and provide feedback upon the draft DML and that the wording of the DML is largely accepted. As noted above in the 'Marine ecology' section, it is agreed the DML has been updated to include the commitment to restrict piling works at night (19:00-07:00), in order to reduce the impact on species which tend to migrate at night/ in darkness as set out within the Framework CEMP (**APP-160**) and Appendix 20A: Schedule of Commitments (**APP-098**). Other minor wording issues noted by the MMO in paragraphs 4.1 – 4.10 of their Relevant Representation have been amended in the updated draft DCO (**APP-005**) including the version submitted at Deadline 4 (**REP4-004** – tracked and REP4-003 - clean). It is agreed that the Applicant will consider the further changes proposed by the MMO in their Deadline 5 submission (**REP5-053**) and that an updated draft DCO will be submitted at Deadline 6 taking these additional comments into account.

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 The Parties confirm that there are no outstanding matters to be agreed.

Signed

[redacted]

Nicola Wilkinson, Marine Case Licensing Officer

On behalf of Marine Management Organisation

Date: 26 April 2022

Signed

[redacted]

Richard Lowe, Director, AECOM Ltd

On behalf of Keadby Generation Ltd

Date: 26 April 2022

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 – Meeting Minutes Between Applicant and MMO (May 2021)

Meeting Minutes

Meeting name
DCO/2020/00002 - SSE K3 (MMO/CEFAS Meeting)

Meeting date
04 May 2021

AECOM project number
606259423

Subject
Pre-Submission Engagement Meeting with MMO and technical advisers, Cefas

Time
14:00 – 16:00

Additional information
- **DCO Case Ref:** DCO/2020/00002
- **Annex A:** Brief Technical Note
- **Annex B:** Meeting Slide Pack
- **Annex C:** Historical Casework

Attendees
Ed Walker (EW), AECOM
Richard Lowe (RL), AECOM
Jacob Graham (JG), AECOM
Jackie Hill (JH), AECOM
Nicola Wilkinson (NW), MMO
Sarah Errington (SE), MMO
Ralph Brayne (RE), Cefas
Georgina Eastley (GE), Cefas
Rebecca Faulkner (RF), Cefas
Ian Hedges (IH), SSE
Michele Vas (MV), Dentons

Circulation List
Attendees

MMO/CEFAS Meeting Minutes – 04 May 2021

Agenda Item	Notes	Key Actions
Overview	RL and EW provided an update on the project and general project overview [see Annex B for further information]. EW provided a summary of key recent updates: • Completion of Stage II consultation • Technical engagement with the MMO • Rationalisation of the Red Line Boundary [(RLB)] – updates, as required, including to reflect technical feedback from consultees • EW reiterated that the canal is the preferred source of water for the project and the River Trent abstraction is an option. Notwithstanding, the areas of the RLB on the Trent have been refined; this includes the reduction of the RLB around the discharge point and abstraction point; this also includes the addition of a small area east of the Railway Wharf area to account for oversailing of a crane from the Wharf • EW reiterated that as discussed with the MMO previously, there is a limited extent of marine working – the project is seeking to re-use or upgrade existing infrastructure in terms of the River Trent; RL noted that fitting of Eel Screens to comply with Eels directive will be required, as well as any necessary upgrades **Water discharge corridor** EW explained that there are only minor works expected at the discharge point. EW noted that as can be inferred from the site imagery taken during outage, there are high levels of siltation / turbidity in the Trent (as to be expected at this location). EW explained that there is an existing dredging licence in place for Keadby 1, reflective of the need for de-silting to tackle this issue	

Agenda Item	Notes	Key Actions
	River water abstraction option Not the preferred option however if chosen the existing intake would be repurposed. **Existing waterborne transport off-loading area** Platform was improved for Keadby 2. No additional works within marine area anticipated. EW asked if MMO or Cefas had any queries of if anything was unclear regarding the project? – No Responses **Technical Discussion** EW provided a summary of technical engagement • MMO Scoping Response (June 2020) • MMO Stage II Consultation Response (January 2021) • Pre-Application engagement with the MMO (January 2021) • MMO Stage Additional Consultation Response EW explained that clarity had been provided to the MMO before regarding very limited scale of works in the marine area. Specifically, further information provided to the MMO on the nature, scale and extent of the works within the River Trent. EW explained that the project is seeking to build on these existing areas of progress to put the project in the best position possible, in terms of agreements with the MMO, ahead of submission of the DCO.	
Level of detail	EW explained that in response to technical feedback from the MMO / Cefas, level of detail has been refined for the EIA. Headline items include: • Additional assessment of effects taking into account likely piling methods (Jackie will discuss this more in a moment) • As requested by Cefas, additional data on relevant fisheries included in ES (Appendix 11F); • Additional detail regarding the nature, extent and duration of impacts on mudflat (i.e. intake area); • Additional consideration given to coastal processes and localised scour; • Completion of an underwater noise assessment and proposals for timing of cofferdam, taking into account relevant species (September – November considered most appropriate restriction); • Additional detail regarding operational effects (i.e. abstraction from the Trent, for example), however noting that this is a lead Environment Agency area – again, more on this in a moment); and • Provided to the MMO for review – includes details of the 'licensable' elements of the Proposed Development. [See Annex B for further information]	
Underwater noise and fisheries	JH provided a summary of the key potential impacts and mitigation considered [See Annex B for further information]; JH summarised the principle species of interest in the area and the understanding that an optimum seasonal restriction would likely be September to November, inclusive; welcome Cefas' opinion on this?	1. **AECOM** to prepare meeting pack and share with MMO for review by **13 May 2021** 2. **MMO** to review meeting outputs and provide advice to the project in response to the

Agenda Item	Notes	Key Actions
	GE noted that salmon seasonal restriction depends on width of Trent; what is the width? JH noted that it is approx.. 150m, so quite narrow. JH noted that both impact and vibro piling likely to be needed; GE noted this and agreed that Cefas want to advise on a constructable project (i.e. don't want a contractor being unable to install piles). GE asked if there was likely to be any variation in timings for when piling is completed in terms of tidal state? EW explained that based on a review of comparable activity for Keadby 1/2, Boats to be used will have flat bottom hulls and be able to operate regardless of tide. It is also likely that piling would be within the marine environment (i.e. a low-tide, "dry" piling condition is unlikely to be viable). JH asked if Cefas had any further technical feedback or thoughts regarding this? GE noted that this all looks very reasonable. EW summarised that the project is keen to engage with MMO/Cefas today to make progress on this matter; we have presented what we regard as the key issues, our proposed mitigation and the specific seasonal window; with this in mind, can we work to reach agreement on this? We're particularly interested in the seasonality point, which we would be happy to work with the MMO to agree via condition on the DML. GE/RF explained that Cefas would like time to consider the approach proportionately to the project. Cefas mentioned vibration piling can be quite noisy and will need further consideration. EW outlined the need to finalise this as soon as possible due to project deadlines. Cefas outlined that they need to consider if a seasonable restriction on both forms of piling is required – Cefas to take this away and consider. Cefas requested summary of key points on the mitigation. EW / JH explained that the project will provide a meeting pack, with the slide deck, and also likely a short technical note to help aid the Cefas review.	key discussion points raised before **26 May 2021**
Intertidal ecology	EW provided a summary of the key impacts and mitigation considered [See Annex B for further information]. EW explained that the worst case would be the requirement of a cofferdam – temporary loss of a small area (0.13ha) as cofferdam would be removed after completion of works. Cefas outlined that the relevant person for this item was not on the call and advice couldn't be provided during the meeting. EW noted this and clarified that as the temporary loss relates to a designated feature, it is the project's understanding that this would be more a lead Natural England matter. Do MMO agree? SE explained that yes, the MMO do have some	3. **AECOM** to provide brief summary of recent case precedent regarding temporary loss of sediment / river mud in this area for MMO information by **13 May 2021**

Agenda Item	Notes	Key Actions
	interest as it is within the marine area but that Natural England would be best-positioned to take a view on this. EW further explained that case precedent for the Keadby 1/ Keadby 2 O&M licence indicates that this conclusion is consistent with how the MMO/Cefas have previously dealt with this type of temporary loss; SE noted that this seems reasonable and is a useful point to make – suggest that AECOM provide more information on this case precedent in due course. AECOM to provide summary of this for MMO. Decided that this was more of a Natural England discussion - AECOM to ensure discussion with Natural England continues. MMO outlined that meeting minutes could be sent to benthic team for review.	
Coastal processes	EW provided a summary of the key impacts and mitigation considered [See Annex B for further information]. EW noted that this is not regarded as a likely issue for the project, given the area and the scale of works especially when considered against the conditions of the surrounding environment, but we would welcome Cefas' feedback? RB explained that the arguments made here and the conclusions seem very robust and reasonable; RB outlined that it can be difficult to analyse the impacts without further details; RB would recommend that sediment details be included and an agreement of what would be done within a worst-case scenario needs to be included – i.e. what happens if scour is observed around the cofferdam? EW explained that this has been considered within the ES; scour protection could be applied around the toe of the cofferdam if necessary although given the small scale of works and the duration, we don't think this is likely to be required. Notwithstanding, we are happy to commit to this type of measure if it is required; we expect that this type of activity or measure could be included in a DML condition (perhaps related to the method statement return?). SE – yes, this would be straightforward to do if needed. Cefas outlined that including similar examples within the river would be very useful.	
Operational activities	It was discussed and agreed with the MMO that the abstraction and discharge of water is within the scope of the Environment Agency, including under the environmental permitting regime, and not a lead-MMO matter. EW provided a summary of key operational considerations for the MMO's information [see Annex B for further information].	
DML review	The DML will be updated to provide further clarity to the MMO regarding Railway Wharf and other tweaks, as necessary (noting that it may not be possible to have another full review ahead of DCO submission).	4. **AECOM** to provide an updated V2 DML for the MMO by **19 May 2021**
Next Steps, Open Discussion and AOB	MMO would hope to give Cefas 2 weeks to review the details from today's presentation/meeting. [Nothing further to discuss; meeting closed 15:24]	

Annex A – Brief Technical Note (Piling in the River Trent)

Keadby III DCO - Piling in the River Trent

Project Description

- Cofferdam will extend up to approximately 22m into the River Trent. At this location the river is approximately 150m wide;
- The cofferdam is expected to be constructed using sheet piles (something like a PU32 Arcelor mittal or AS500-12.7), with an estimated SPL sound source level of 205 dB_{peak}, 190 dB_{rms} and 180 dB SEL for hammer piling and 175/160/160 for vibratory piling;
- Piling will use vibratory piling wherever possible to minimise production of underwater sound though it is recognised this method generate vibration/particle motion. Thus, there will be impact and vibratory piling taking place, with vibratory longer in duration that impact piling; and
- Construction activities are restricted to daytime working (0700 to 1900).

Receptors and sensitivity

- Lamprey are a designating feature of Humber Estuary SAC and will be migrating to and from freshwater spawning grounds. Limited information regarding hearing ability but Hastings and Popper (2019) report lamprey will be sensitive to particle motion rather than underwater sound energy. Thus, this species included in the Popper et al., 2014 LOW hearing sensitivity category. Also, this species migrates at night and since construction will be limited in extent there is predicted to be a negligible effect on lamprey;
- Salmon are recorded from the River Trent but it is not a major salmon river and this species is not a designating feature of the SAC. The numbers of salmon present are thought to be low (very little available data found) but this is a river that used to support a salmon run. With recently removed barriers to fish migration in the river recovery in salmon numbers is anticipated to be possible;
- Salmon migrate upstream to reach their freshwater spawning grounds in the late autumn with peak migration between September and November;
- Spawning habitats are in the upper catchment, where there are clean stony or gravelly substrates. Spawning is between October and January. Juveniles mature in the upper catchment before migrating back to the sea between April and May. It is understood the smolt stage migrates predominately at night. Thus, there is limited potential for downstream migration to be disrupted by the piling works.; and
- Salmon is a species with a swim bladder which is not specifically involved in the process of hearing. This species is thus susceptible to barotrauma although hearing only involves particle motion, not sound pressure, and is categorised as a species of medium hearing sensitivity (Popper et al., 2014).

Effect of Impact piling on salmon

- Physical injury (mortal or recoverable) to salmon as a result of impact piling is unlikely[1]. Impact distances, calculated on the basis of geometric spreading calculations, are less than 10m from the sound source. For temporary auditory injury (TTS) the impact distance is 40m for a 15-minute period of impact piling and 101m for an hour (without interruptions). Behavioural disturbance is likely across the total width of the river which may result in an acoustic barrier. **For this reason impact piling is seasonally restricted and shall not occur within the upstream migration period of September to November**. For all other times impact piling will be subject to standard JNCC mitigation measures (JNCC, 2010) for

[1] Popper et al., 2014. The predominant energy in pile impact impulses is at frequencies below 500 Hz

impact piling in relation to marine mammals. The soft-start required will also confer protection to other fish in the river.

Effect of vibratory piling on salmon

- Vibratory piling produces sound pressure at a much lower intensity than impact piling. However, the vibrations do produce particle motion, and salmon are thought to be more sensitive to particle motion than sound pressure. Vibratory piling is expected to be of longer duration than impact piling.;
- No thresholds for particle motion exist and effects are generally based on evidence from pressure sensitive species (Popper et al., 2014). Nevertheless, data for species similar to salmon, such as the rainbow trout, showed no hearing loss (as determined by AEP which cannot measure particle motion responses and is considered an unreliable measure). However, no negative effects on fish health were observed for individuals exposed to increased noise (up to 150dB re 1 µPa rms) for nine months in an aquaculture facility (Popper et al., 2014). Such an increase in sound pressure will have also increased particle motion indicating a level of tolerance in salmonids.;
- For behavioural responses, the qualitative Popper thresholds indicate that the risk of a behavioural response to continuous sound sources (presumably the sound and particle motion elements) is moderate for intermediate distances, which can be estimated in the order of up to hundreds of metres from the sound source.;
- This could result in behavioural disturbance across the whole 150m width of the river, which could cause a barrier to movement and hence upstream migration.;
- However, as vibratory piling will be restricted to daytime working hours at least 12 hours of each day will be sound free allowing salmon to migrate upstream. However, **all piling activity will be excluded in the September – November upstream migration period**.; and
- For smolt downstream migration, which predominantly occurs at night, **vibratory piling will only take place during daytime construction times** and thus no impact is likely.

Annex C – Historical Casework

As discussed during the meeting, there is a range of casework local to the Proposed Development Site which may have relevance to the consideration of activities proposed within the River Trent. This includes the ten-year maintenance licence for Keadby Power Station, Lincolnshire (MLA/2017/00312).

Historical Cefas advice indicates that the dredging (and associated disposal, within the Trent) of up to 2,500m^3 per annum is environmentally acceptable and will not have a significant effect on the marine environment. This temporary loss of material (or movement within the same sediment cell) is also regarded as acceptable.

Against this context, the Proposed Development includes the potential for small scale temporary loss of mudflat and also very small increases in Suspended Sediment Concentrations; this is deemed to be inconsequential when considered against the background levels of turbidity within the River Trent and any baseline dredging and disposal activity.

Regarding the temporary loss of mudflat behind the cofferdam, as discussed during the meeting, this will be considered within the Habitats Regulations Assessment (HRA) provided with the DCO application. Notwithstanding, the temporary loss is extremely minor when considered against the context of the wider Estuary and this specific feature. The historical MMO case precedent related to a similar movement / temporary loss of material is considered to validate this position. In addition, it is relevant to note that Natural England also provided advice to the MMO that the temporary loss of habitat (and the completion of the activity in general) will not have a significant effect on the marine environment.

A selection of the most relevant historical advice related to this licence (which was granted) is attached below.

Centre for Environment
Fisheries & Aquaculture
Science

MARINE AND COASTAL ACCESS ACT (2009). ASSESSMENT OF 10 YEAR LICENCE APPLICATION FROM SCOTTISH & SOUTHERN ENERGY FOR MAINTENANCE DREDGING AT KEADBY POWER STATION, LINCOLNSHIRE.
Reference Number: MLA/2017/00312

[redacted]

To: Emmanuel Mulenga (via MCMS)

1. With reference to the above application which was validated on MCMS on 18th September 2017.

Questions specifically raised by the MMO.

- To the best of your knowledge is the description of the environment and potential impacts accurate?
  - Yes
- Has the appropriate evidence base been used? Is the evidence complete for its intended use i.e. is there sufficient information to allow a decision on the application to be made? If not please explain why and what you would expect to see and any additional work.
  - Overall the evidence is sufficient for this dredge and disposal licence application however the applicant does not state the annual dredge disposal volumes so I have assumed 2,500m^3 as one tenth of a 10 year period with a total volume of 25,000m^3. However, this should be confirmed by the MMO.
- Do you agree with the conclusions reached?
  - Yes, if Licence condition recommendations are applied by the MMO and adhered to by the applicant.
- Are the proposed mitigation and monitoring measures sufficient?
  - Yes, the monitoring measures and 3 year sampling requirement will be based on information from the previous licences, sample analysis and relatively small volumes of dredge arisings for disposal.
- Are there any minor technical or presentational comments that affect the overall confidence in the conclusions? Please insert as an annex
  - N/A
- Is there an adequate description of the baseline physical and biological environment?
  - N/A
- Is there an adequate description of the potential project impacts and effects on the physical and biological environment?
  - Yes, a Water Framework Directive Assessment report has been provided.

The Centre for Environment,
Fisheries & Aquaculture Science
Lowestoft Laboratory,
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[redacted]
Cefas, an executive agency of Defra

- Is there an adequate description of the potential cumulative and inter-related impacts and effects on the physical and biological environment?
    - Yes
- Is there an adequate description of the potential transboundary impacts and effects on the physical and biological environment?
    - N/A
- Are measures to avoid, reduce or remedy significant adverse effects clearly presented and appropriately justified?
    - I defer to the EA regarding appropriate dredge methodology and best practise.
- Are monitoring proposals and recommendations clearly presented and appropriately justified?
    - N/A
- In collecting data have details of any quality standards or assurance methods been given? If not please explain what you would expect to see and if they have, please explain if such standards and methods are suitable.
    - Yes – MMO certified laboratory has been used for analysis of dredge material
- Please assess the methodology used to prepare and gather evidence. Have they used standard practices?
    - Yes
- Is the timeliness of the data appropriate for the intended use?
    - Yes, the data used for the application is based on 2014 and 2017 contaminant results and consultations.
- Is the evidence that has been supplied appropriate (i.e. proportionate and targeted) for its intended use?
    - Yes
- Is the evidence consistent with that submitted for operations of a similar nature?
    - Yes
- For evidence that relies on modelled data has an unbiased statistical accuracy assessment been carried out?
    - N/A

Changes required - Cefas advises that actions/alterations are required by the developer to the proposal or report prior to a licence being issued by MMO. It should be noted that the applicant refers only to the disposal of dredging as being disposed of directly behind the dredger. The dredge area is within the designated Keadby Power Station disposal site (HU043) and should be referred as such in correspondence.

The application specifies 25,000m^3 dredge disposal over the 10 year Licence period. The applicant states that max of 500m3 of dredge arisings per campaign however the applicant does not state the max volume of dredge disposal per annum. I have assumed a max of 2,500m^3 per annum but defer to the MMO to confirm this.

Additional Comments

Dredging requirement

2. Scottish & Southern Energy have applied to the Marine Management Organisation (MMO) for a 10 year Marine Licence to undertake dredging at Keadby Gas Fire Power Station, River Trent, Lincolnshire and to dispose of dredged material at Keadby Power Station (HU043) disposal site. In order for Keadby Power Station to operate, cooling water is taken from the

river Trent, loss of cooling water results in the shutdown of the site. The intake and outfall sections from and to the river have to be kept free of silt therefore periodic dredging is required. Previous dredging has occurred; a one year dredging licence (L/2014/00265/2) was issued 24th August 2014, this was followed by a two year variation was which expired on 27th August 2017.

3. The application is for a 10 year licence to dredge at total of 25000 m3 of silt over the 10 year period with a maximum of 500m3 per campaign.

4. Dredging is carried out periodically at the river intake dependant on silt build up, typically at three month intervals.

5. During normal operation the cooling water outfall at the River Trent remains clear however during major shutdowns with the cooling water system out of service for an extended period the outfall may silt up and require dredging, typically at two year intervals.

6. The applicant aimed to commence the dredging works in August 2017 until August 2027, if a licence is granted the applicant will need to submit a revised start date to the MMO.

Dredge material quality:

7. The dredge material is silty clay material (31.25-62.5um) with a specific gravity 2.65. The dredge depth is 2.6 m below chart datum. The maximum amount to be dredged is 25,000m3 over the 10 year period.

8. Samples were requested for the previous application (MLA/2014/00183) and current applicant SAM/2017/00026 to support this licence. Samples were collected at the intake and outfall pipes at the sediment surface. The most recent samples were analysed for trace metals, organotins and polyaromatic hydrocarbons (PAH).

9. The trace metal results show slightly elevated levels of determinands cadmium, chromium, nickel, lead and zinc above Cefas Action Level 1 but these are within the expected range for the River Trent and Humber Estuary and therefore are not a cause for concern.

10. The organotin results show that the levels are below limits of detection and therefore are not a cause for concern.

11. The PAH results show elevated levels for a number of determinands above Cefas Action Level 1. PAHs can be further assessed against sediment quality 'effects ranges' such as the 'effect range low' ERL, and 'effects range medium' ERM[1]. Results showed that low molecular weight PAHs were above both the ERL and ERM, however high molecular weight PAHs were above just the ERL levels.

12. The PAH levels are a cause of concern, however levels at total hydrocarbons have actually dropped slightly since the 2014 sampling (1094 mg/kg in 2014 to 721-712 km/kg in 2017. I would therefore suggest that the material is acceptable for disposal at the proposed site (i.e.

[1] Screening Quick Reference Tables, 2008. [redacted]

within the local area), however I would recommend PAH analysis is undertaken for any future licence applications to ensure the material is suitable for sea disposal and there is not a source of contamination.

Alternatives to sea disposal:

13. I concur that the physical properties of the material (i.e. silt) and the volumes involved suggest that it is unlikely that a viable alternative disposal option could be identified in this location, potential alternative disposal routes, including beneficial options, should remain under review during the course of the licence.

Disposal site considerations:

14. The dredge material is to be disposed of at the Keadby Power Station (HU043) disposal site. The name and code for the disposal site must be included in the Marine Licence for the purposes of OSPAR reporting. The disposal area Keadby Power Station (HU043) is situated in a sea area which is dispersive therefore taking into account the relatively small volumes of dredge material and the distance to the nearest conservation designation I am of the opinion that there will be no significant adverse effects on the marine environment.

- ***I am of the opinion that in line with the current application, the proposed volume of maintenance dredge material is suitable for disposal at the Keadby Power Station (HU043) disposal site.***

Dredging method

15. The vessels listed for use by Humber Workboat are CSD dredgers. The dredger will dredge a small wedge from the intake and outfall areas to provide clear access for the cooling water for the station. There will be appropriate slopes upstream and downstream to try to limit re-silting in the lowered area.

16. The material will be discharge in a 20:80 [silt:water ratio] just behind the dredger as it dredges the pockets into the River Trent. The works will take approximately 4 days to complete.

17. The vessels and method of dredging proposed are suitable at this site. Best practices should always be adopted and this may be an area on which the EA may wish to comment.

- ***The proposed method of dredging and disposal are suitable in the marine environment.***

GENERAL

Conservation designations

18. The proposed development is located within the Humber Estuary SAC, SPA Ramsar and SSSI designated sites. The Humber Estuary is designated due to its saltmarsh, sand dune and mudflat habitat which provides breeding and feeding grounds to over-wintering birds.

19. The works are also within 5km of the following designations:

- Crowle Borrow Pits (4.5km) designated for its terrestrial habitats and freshwater ponds and associated floral and faunal species; and
- Hatfield Chase Ditches (4.9km) designated for their assemblage of aquatic and emergent plants.

20. I believe that the nature and scale of the works do not warrant an Appropriate Assessment under The Conservation of Habitats and Species Regulations 2010, however, I defer comment to Natural England.

Requirement for EIA

21. I am of the opinion that the proposed works do not fall under the scope of a 'relevant project' as defined in the Marine Works (Environmental Impact Assessment) 2007 Regulations (amended 2011), and therefore do not warrant an EIA to be carried out. A Water Framework Assessment was carried out June 2014 and submitted as part of the original dredging application. A second Water Framework Assessment was carried out August 2015 as a requirement for extending the 2014 dredging licence for a further two years.

Summary

22. Based on my assessment of this application I consider that 2,500m^3 of maintenance dredged material per annum, 25,000m^3 over a 10 year period, from the proposed dredged area is suitable for disposal at sea to the licensed disposal site Keadby Power Station (HU043). Re-sampling of the dredge area will be required on a 3 year basis over the 10 year licence period.

25. I recommend the following licence conditions;

I recommend the Licence Holder must ensure the following licence conditions;

Pre-works

- The District Marine Office must be notified of the timetable of works/operations at least 10 days prior to any activities commencing.
  Reason: To ensure that the MMO officer is aware of the operations at sea occurring within its jurisdiction in order to notify other sea users and can arrange enforcement visits as appropriate.

- A complete list of any contractors and vessels to be used are submitted to the MMO prior to the commencement of the works.
  Reason: To ensure that the MMO has the most up to date information to ensure the Licence is correct.

During works

- Any oil, fuel or chemical spill within the marine environment is reported to the MMO, Marine Pollution Response Team.
  Reason: To ensure that any spills are appropriately recorded and managed to minimise impact to sensitive receptors and general marine environment.

- Any man-made material must be separated from the dredged material and disposed of to land.
  Reason: To exclude the disposal at sea of man-made material such as shopping trolleys, masonry, paint cans etc.

- No more than 500m^3 maximum of dredge arisings to be disposed of in each campaign over the 10 year period to a maximum of 25,000m^3 over the licence period.
  Reason: To ensure that acceptable volumes of material can be accommodated within the capacity of the disposal site.

- They inform the MMO of the location and quantities of material disposed of each month under this Licence by 31 January each year for the months August to January inclusive, and by 31 July each year for the months February to July inclusive.
  Reason: To ensure that accurate data is collected for the reporting of disposal at sea to meet UK OSPAR requirements

- The licence holder must ensure that during the course of disposal, material is distributed evenly over disposal site Keadby Power Station (HU043).
  Reason: To ensure that a reasonably even spread of material is achieved over the area of the disposal site to avoid shoaling.

- No more than 500m3 of dredge material per campaign and 2500m3 of dredge material from Keadby Power Station intake and outfall should be disposed of at Keadby Power Station (HU043) annually.
  Reason: To ensure material is deposited within the appropriate disposal site.

Post-works

- The District Marine Office must be notified within 10 days of completion of the works.
  Reason: To ensure that the MMO officer is aware of the operations at the site occurring within its jurisdiction in order to notify other sea users and can arrange enforcement visits as appropriate.

- The licence holder must ensure that sediment analysis sampling of the dredge area is undertaken at 3 yearly intervals during the 10 year licence period.
  Reason: To ensure that the sediment contaminant levels remain at levels consistent with disposal of the dredge material at sea.

Please contact me should you wish to discuss any aspect of this minute.

Denise Goldsmith

Advisor (Sustainable Marine Management)

Quality Check	***Date***
Andrew Griffith	31/10/2017

Emmanuel Mulenga
Marine Management Organisation
PO Box 1275
Newcastle upon Tyne
NE99 5BN

Our ref: AN/2017/126256/01-L01
Your ref: MLA/2017/00312

Date: 5 October 2017

Dear Emmanuel

Dredging of power station intake and outfall areas within the River Trent - 10 year dredging licence
Keadby Power Station, Keadby

Thank you for consulting us on the above application on 12 September 2017.

We have considered the application, as submitted, and have the following comments to make on it:

Water Framework Directive
The application is supported by a Water Framework Directive (WFD) addendum. We note that the original application (and original WFD assessment) was for a capital dredge, and this application is for maintenance dredging each year with the predicted annual volume of sediment to be dredged each year being less than required in the original capital dredge.

For information, the Clearing the Waters guidance that the applicant has followed has been updated and the new guidance does include different trigger thresholds than the ones they have considered. The new guidance also includes additional scoping checks, such as including invasive non-native species (INNS) in the impact assessment.

Based on the information provided in Appendix B and Appendix E, we are satisfied that the footprint of the impacted intertidal area is below the trigger thresholds for further assessment in the updated 'WFD Clearing the Waters for All' guidance and that measures are included in the proposed method to mitigate for possible risks to fish and of introducing INNS.

Accordingly, we are satisfied that the WFD assessment is sufficient to support the application and we have no concerns regarding this.

For information for the applicant, if they need to complete a WFD assessment for a future new activity, the revised guidance is available here:

[redacted]

This guidance includes links to maps and to an Excel water body summary table which contains summary information about the coastal waters and estuaries that would help with the scoping stage of completing a WFD assessment.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me on the number below.

Yours sincerely

Annette Hewitson
Principal Planning Adviser

[redacted]

End

Date: 02 October 2017
Our ref: 225983
Your ref: MLA/2017/00312

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VIA WEBSITE ONLY

Dear Emmanuel

Keadby Power Station Intake & Outfall Dredging

Thank you for your consultation dated 12 September 2017. The following constitutes Natural England's formal statutory response.

Marine and Coastal Access Act 2009

The works, as set out in the information supplied by the applicant, are not sited within or near to a Marine Conservation Zone. Natural England have not identified a pathway by which impacts from the development would affect the interest features of the site(s). We are therefore confident that the works will not hinder the conservation objectives of such a site.

The Conservation of Habitats and Species Regulations 2010 (as amended) and The Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (as amended)

Humber Estuary SAC, SPA and Ramsar site
We can confirm that the proposed works are located within the Humber Estuary Special Area of Conservation (SAC) and Ramsar site, and approximately 10km south of the Humber Estuary Special Protection Area (SPA). Natural England advises that providing the works are carried out in strict accordance with the details of the application which have been submitted, it can be excluded that the application will have a significant effect on any SAC, SPA or Ramsar site, either individually or in combination with other plans or projects.

In advising your authority on the requirements relating to Habitats Regulations Assessment (HRA), and to assist you in screening for the likelihood of significant effects, based on the information provided, Natural England offers the following advice:

- the proposal is not necessary for the management of the European site
- that the proposal is unlikely to have a significant effect on any European site, and can therefore be screened out from any requirement for further assessment

When recording your HRA we recommend you refer to the following information to justify your conclusions regarding the likelihood of significant effects:

- As the works are small scale in nature and provided the proposals are undertaken in line with the documents submitted with this application, it is unlikely that there will be a significant effect as a result of this development, either alone or in combination at this location.

Wildlife and Countryside Act 1981 (as amended)

Humber Estuary SSSI
We can confirm that the proposed works are located within the Humber Estuary Site of Special Scientific Interest (SSSI). Natural England advises that the proposal, if undertaken in strict accordance with the details submitted, is not likely to damage the interest features for which the site has been notified. We therefore advise your authority that this SSSI does not represent a constraint in determining this application. Should the details of this application change, Natural England draws your attention to Section 28(I) of the *Wildlife and Countryside Act 1981* (as amended), requiring your authority to re-consult Natural England.

For any queries relating to the content of this letter please contact me using the details provided below.

Yours sincerely