



The Planning Inspectorate
Yr Arolygiaeth Gynllunio

REPORT on the IMPLICATIONS for EUROPEAN SITES (RIES)

Proposed Keadby 3 Carbon Capture Power Station

An Examining Authority report prepared with the
support of the Environmental Services Team

Planning Inspectorate Reference: EN010114

03 May 2022

[This page is intentionally left blank]

TABLE OF CONTENTS

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION | 1 |
| 1.1 | BACKGROUND | 1 |
| 1.2 | DOCUMENTS USED TO INFORM THIS RIES | 2 |
| 1.3 | STRUCTURE OF THIS RIES..... | 3 |
| 2 | OVERVIEW..... | 4 |
| 2.1 | EUROPEAN SITES CONSIDERED | 4 |
| 2.2 | HRA MATTERS CONSIDERED DURING THE EXAMINATION..... | 6 |
| 3 | LIKELY SIGNIFICANT EFFECTS | 8 |
| 3.0 | THE APPLICANT’S ASSESSMENT | 8 |
| 3.1 | EXAMINATION | 8 |
| 3.2 | SUMMARY OF HRA SCREENING OUTCOMES DURING THE EXAMINATION | 19 |
| 4 | ADVERSE EFFECTS ON INTEGRITY | 21 |
| 4.1 | CONSERVATION OBJECTIVES..... | 21 |
| 4.2 | THE INTEGRITY TEST..... | 21 |

[This page is intentionally left blank]

1 INTRODUCTION

1.1 Background

- 1.1.1 Keadby Generation Limited (the Applicant) has applied to the Secretary of State for a development consent order (DCO) under section 37 of the Planning Act 2008 (PA2008) for the proposed Keadby 3 Carbon Capture Power Station (the application). The Secretary of State has appointed an Examining Authority (ExA) to conduct an examination of the application, to report its findings and conclusions, and to make a recommendation to the Secretary of State as to the decision to be made on the application.
- 1.1.2 The relevant Secretary of State is the competent authority for the purposes of the Habitats Directive¹ and the Habitats Regulations² for applications submitted under the PA2008 regime. The findings and conclusions on nature conservation issues reported by the ExA will assist the Secretary of State in performing their duties under the Habitats Regulations.
- 1.1.3 This report compiles, documents and signposts information provided within the DCO application, and the information submitted throughout the examination by both the Applicant and interested parties, up to Deadline 6 of the examination (26 April 2022) in relation to potential effects to European Sites³. It is not a standalone document and should be read in conjunction with the examination documents referred to. Where document references are presented in square brackets [] in the text of this report, that reference can be found in the Examination library published on the National Infrastructure Planning website at the following link:
<http://infrastructure.planninginspectorate.gov.uk/document/EN010114-000406>
- 1.1.4 It is issued to ensure that interested parties including the statutory nature conservation body (SNCB), i.e. Natural England (NE), are consulted formally on Habitats Regulations matters. This process may be relied on by the Secretary of State for the purposes of Regulation 63(3) of the Habitats Regulations. Following consultation the responses will be considered by the ExA in making its recommendation to the Secretary of State and made available to the Secretary of State along with this report. The Report on the Implications for European Sites (RIES) will not be revised following consultation.

¹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as codified) (the 'Habitats Directive').

² The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations).

³ The term European Sites in this context includes Sites of Community Importance (SCIs), Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), possible SACs, potential SPAs, Ramsar sites, proposed Ramsar sites, and any sites identified as compensatory measures for adverse effects on any of the above. For a full description of the designations to which the Habitats Regulations apply, and/ or are applied as a matter of Government policy, see PINS Advice Note 10.

- 1.1.5 The Applicant has not identified any potential impacts on European sites in EEA States⁴ [[REP1-006](#)]. Only UK European sites are addressed in this report.

1.2 Documents used to inform this RIES

- 1.2.1 The Applicant provided a Habitats Regulations Assessment (HRA) report entitled Habitats Regulations Assessment Screening Report [[APP-041](#)] with the DCO application. Despite being titled a 'Screening Report', it considers a small number of pathways at HRA stage 2 (the Integrity Test). The HRA report also includes screening and integrity matrices.

Examination

- 1.2.2 In response to representations made by Interested Parties during the examination (NE [[RR-010](#)], the Marine Management Organisation (MMO) [[RR-006](#)] and the Environment Agency (EA) [[AS-002](#)]), the Applicant provided an updated HRA AA report at Deadline 1 [[REP1-006](#)].
- 1.2.3 On 5 April 2022 the Applicant submitted a change request [[REP5-019](#)] and submitted a number of documents in support of its request [[REP5-020 - REP5-048](#)]. At Deadline 6 (26 April 2022) the Applicant sought to amend its change request [[REP6-018](#)] and submitted revised/ new supporting documents [[REP6-019 - REP6-029](#)]. The change request, as amended, includes a further revision to the HRA AA Report [[REP5-036](#)], however at the point of preparing this RIES the ExA had not confirmed whether the change request, as amended, was to be accepted and therefore no further reference to the change has been included in this RIES.
- 1.2.4 The main documents used to inform this RIES are outlined below:

Application Documents

- HRA Screening Report (the Applicant's HRA Report dated May 2021) [[APP-041](#)]

Representations

- NE [[RR-010](#)]
- MMO [[RR-006](#)]
- EA [[AS-002](#)][[REP2-022](#)]

Statements of Common Ground

- North Lincolnshire Council [[REP6-005](#)]
- EA [[REP5-014](#)]
- NE [[REP6-006](#)]

⁴ European Economic Area (EEA) States.

- MMO [[REP6-007](#)]

Hearing Documents

- Recordings and transcripts of Issue Specific Hearing 1 (ISH1) on Environmental Matters [[EV-013 - EV-020](#)]

Other Documents

- HRA AA Report [[REP1-006](#)]

1.3 Structure of this RIES

1.3.1 The remainder of this report is as follows:

- **Section 2** identifies the European site(s) that have been considered within the DCO application and during the examination period, up to 26 April 2022 (inclusive). It provides an overview of the issues that have emerged during the examination.
- **Section 3** identifies the European site(s) and qualifying feature(s) screened by the Applicant for potential Likely Significant Effects (LSE), either alone or in-combination with other projects and plans. The section also identifies where Interested Parties have disputed the Applicant's conclusions.
- **Section 4** identifies the European site(s) and qualifying feature(s) which have been considered in terms of adverse effects on site integrity, either alone or in-combination with other projects and plans. The section identifies where Interested Parties have disputed the Applicant's conclusions.

2 OVERVIEW

2.1 European Sites Considered

- 2.1.1 The project is not connected with or necessary to the management for nature conservation of any of the European site(s) considered within the Applicant's assessment.
- 2.1.2 The Applicant's HRA Report identified the following European site(s) (and features) for which the UK is responsible for inclusion within the assessment:

Table 2.1: Sites Screened into the HRA by Applicant

| Name of European Site | Features |
|---|---|
| Humber Estuary Special Area of Conservation (SAC) 1.3km east of the Proposed PCC Site | Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) |
| | Coastal lagoons |
| | Dunes with <i>Hippophae rhamnoides</i> |
| | Embryonic shifting dunes |
| | Estuaries |
| | Fixed coastal dunes with herbaceous vegetation ("grey dunes") |
| | Mudflats and sandflats not covered by seawater at low tide |
| | <i>Salicornia</i> and other annuals colonizing mud and sand |
| | Sandbanks which are slightly covered by sea water all the time |
| | Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") |
| | <i>Petromyzon marinus</i> ; Sea lamprey |
| | <i>Lampetra fluviatilis</i> ; River lamprey |
| | <i>Halichoerus grypus</i> ; Grey seal |
| Humber Estuary Special Protection Area (SPA) 9.8km northeast of the Proposed PCC Site | <i>Botaurus stellaris</i> ; Great bittern (Non-breeding) |
| | <i>Botaurus stellaris</i> ; Great bittern (Breeding) |
| | <i>Tadorna tadorna</i> ; Common shelduck (Non-breeding) |
| | <i>Circus aeruginosus</i> ; Eurasian marsh harrier (Breeding) |

Report on the Implications for European Sites for
Keadby 3 Carbon Capture Power Station Project

| | |
|---|---|
| | <i>Circus cyaneus</i> ; Hen harrier (Non-breeding) |
| | <i>Recurvirostra avosetta</i> ; Pied avocet (Non-breeding) |
| | <i>Recurvirostra avosetta</i> ; Pied avocet (Breeding) |
| | <i>Pluvialis apricaria</i> ; European golden plover (Non-breeding) |
| | <i>Calidris canutus</i> ; Red knot (Non-breeding) |
| | <i>Calidris alpina alpina</i> ; Dunlin (Non-breeding) |
| | <i>Philomachus pugnax</i> ; Ruff (Non-breeding) |
| | <i>Limosa limosa islandica</i> ; Black-tailed godwit (Non-breeding) |
| | <i>Limosa lapponica</i> ; Bar-tailed godwit (Non-breeding) |
| | <i>Tringa totanus</i> ; Common redshank (Non-breeding) |
| | <i>Sterna albifrons</i> ; Little tern (Breeding) |
| | Non-breeding waterbird assemblage |
| Humber Estuary Ramsar site 9.8km northeast of the Proposed PCC Site | Ramsar Criterion 1: Near-natural estuary, including; dune systems, humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons |
| | Ramsar Criterion 3: Supports the second largest breeding colony of grey seals in England. |
| | Ramsar Criterion 5: Supports an assemblage of waterfowl (non-breeding) of international importance |
| | Ramsar Criterion 6: Supports species/populations of waterfowl occurring at levels of international importance. |
| | Ramsar Criterion 8: Migration route for river lamprey and sea lamprey between coastal waters and spawning areas. |
| Thorne Moor SAC | Degraded raised bogs still capable of natural regeneration |

| | |
|--|---|
| 6.3km south-west of the Proposed PCC Site | |
| Hatfield Moor SAC 8.2km south-west of the closest proposed construction activities and 10.4km north-west of the Proposed PCC Site | Degraded raised bogs still capable of natural regeneration |
| Thorne and Hatfield Moors SPA 5.5km north-west of the closest proposed construction activities and 6.3km south-west of the Proposed PCC Site | <i>Caprimulgus europaeus</i> ; European nightjar (Breeding) |

2.1.3 The HRA AA Report [[REP1-006](#)] explains that EA guidance⁵ was followed, applying a radius of search of 15km from the proposed order limits when identifying relevant European Sites which may be affected by operational emissions to air. The Report states that the 15km radius was considered sufficiently precautionary to capture other impact pathways such as construction and operational disturbance, temporary habitat disturbance and modification, and water quality impacts (para 4.2.4-5).

2.1.4 NE in its response to the ExA's First Written Question (ExQ1) Q1.4.4 [[REP2-030](#)], did not identify any other UK European site or European site features that could be affected by the project.

2.2 HRA Matters Considered During the Examination

The following HRA matters were raised by the ExA and considered during the Examination:

- Whether some of the Applicant's negative screening conclusions had relied upon measures intended to avoid or reduce the harmful effects of the Proposed Development on the sites (which would go against the European Union Court of Justice (CJEU) People over Wind judgement (C-323/17)⁶).
- Inclusion of the impact pathway of impacts to bird foraging resources.
- Confidence in the baseline habitat conditions (saltmarsh) and baseline air quality data.
- Methodological concerns regarding noise disturbance thresholds.

⁵ Department for Environment, Food & Rural Affairs and Environment Agency, 2016

⁶ The 2018 ruling by the Court of Justice of the European Union (the CJEU) on the interpretation of the Habitats Directive in the case of People Over Wind and Sweetman vs Coillte Teoranta (2018) ('the Sweetman judgement'), confirmed that mitigation should not be taken into account at screening stage.

Report on the Implications for European Sites for
Keadby 3 Carbon Capture Power Station Project

- Concerns about the security of mitigation measures.

3 LIKELY SIGNIFICANT EFFECTS

3.0 The Applicant's assessment

- 3.0.1 The Applicant has described how it has determined what would constitute a 'significant effect' within its HRA AA report [[REP1-006](#)]. This follows guidance documents on HRA, with reference to relevant case law.
- 3.0.2 The Applicant's conclusions on LSE from the Proposed Development alone are presented in Section 5 of the Applicant's HRA AA Report [[REP1-006](#)] and in the screening matrices (Appendix A). It concluded that LSE cannot be excluded for all six European sites from the project alone. Table 3.1, below, provides a summary of all European sites and qualifying features considered for LSE, the Applicant's conclusion, and whether this was disputed by NE during the Examination, highlighting the current position of NE at the point of issue of the RIES.

In combination assessment

- 3.0.3 The Applicant has addressed potential in-combination effects within its HRA AA report [[REP1-006](#)] (Section 7 and within the screening matrices in Appendix A). The other plans or projects considered in the assessment are listed in Appendix D of the HRA AA Report.
- 3.0.4 The scope of the in-combination assessment was not disputed by any interested parties, however the MMO [[RR-006](#)] recommended that section 7 be updated regularly to reflect any new plans or projects that may need consideration as part of an iterative process. The ExA requested during ISH1 Session 4 [[EV-016](#)] and in [[EV-031](#)] at ISH1-AP7 that the in combination assessment be updated periodically to reflect this.

3.1 Examination

- 3.1.1 The matters relating to the Applicant's assessment of LSE that have been disputed by NE and other IPs during the Examination are detailed below.

Humber Estuary SAC and Ramsar – underwater noise/ vibration disturbance on lamprey species

- 3.1.2 The Applicant's original HRA [[APP-041](#)], screened out LSE from noise disturbance resulting from the installation of the cofferdam in the River Trent for the Humber Estuary SAC and Ramsar river and sea lamprey qualifying features. Mitigation was proposed including limits on working hours, soft-start procedures, and limits on the time of year that cofferdam installation could take place.
- 3.1.3 NE [[RR-010](#)] supported the use of soft-start piling and recommended that this be secured as mitigation; therefore, NE advised that this impact pathway be screened into an Appropriate Assessment (AA) to ensure that the Applicant's approach was consistent with case law (the Sweetman judgement). The ExA sought clarification [[PD-009](#)] (ExQ1 Q1.4.3 and Q1.4.4) over this issue.

- 3.1.4 The Applicant accepted NE's position and revised the HRA AA report [[REP1-006](#)] to reflect this.
- 3.1.5 Further discussions relating to the means of securing the fish protection measures are set out in section 4 of this report.

Humber Estuary SAC and Ramsar – entrapment of migrating lamprey species arising from cofferdam installation

- 3.1.6 NE [[RR-010](#)] advised that further information be provided (through surveys) to demonstrate that lamprey do not use the canal, or that the same precautionary mitigation be applied to the cofferdam installation in the canal as for that applied to the river abstraction option, noting that the Applicant's original application did not propose seasonal restrictions in relation to installation or removal of the cofferdam within the Stainforth and Keadby Canal, assuming that the only migratory fish species likely to use the canal were European eel.
- 3.1.7 The Applicant's response to NE's representation [[REP1-021](#)] states that the Applicant committed to precautionary mitigation for lamprey in the updated HRA AA report ([[REP1-006](#)] para 6.4.7) and in the Framework CEMP which is secured by Requirement 17 of the draft DCO (APP-005). However, paragraph 6.4.7 of the HRA report refers to impacts from noise and vibration, not entrapment arising from cofferdam dewatering, and the revised HRA report screens out this impact pathway (section 5.2.21 – 5.2.28).
- 3.1.8 The Applicant argues (section 5.2.21 – 5.2.28 [[REP1-006](#)]) that in the case of the River Trent, the fish protection measures are required to deliver legislative compliance with a deemed marine licence (DML) under Part 4 of the Marine and Coastal Access Act 2009, implying that on this basis the HRA screening [[REP1-006](#)] was consistent with the Sweetman judgement. It is unclear if this rationale has also been applied to the Stainforth and Keadby Canal.

3.1.9 The Applicant is requested to clarify what mitigation has been proposed to prevent entrapment of lamprey species through the dewatering of the cofferdam for both the River Trent and Stainforth and Keadby Canal river abstraction options, and justify how any mitigation proposed is consistent with the Sweetman judgement? NE to comment.

Humber Estuary SAC – saltmarsh habitat loss/ modification

- 3.1.10 NE [[RR-010](#)] advised that transitional reedbed vegetation found along the banks of the River Trent (described in section 5.2.4 of the original HRA report [[APP-041](#)]) be considered as saltmarsh habitat (a qualifying feature of the Humber Estuary SAC) and that any loss of designated habitat within a designated site should be screened positively. The ExA questioned the Applicant over the presence of the reedbed habitat [[PD-009](#)] (ExQ1 Q1.4.11).
- 3.1.11 The Applicant in its response to the ExQ1 [[REP2-006](#)] referred to its revised HRA AA report [[REP1-006](#)] (paragraph 5.2.5 to 5.2.6), which it

considers clarifies that the vegetation present did not comprise the saltmarsh vegetation qualifying feature 'Salicornia and other annuals colonising mud' and therefore it maintains its conclusion of no LSE.

- 3.1.12 NE confirmed [[REP6-036](#)] in response to the ExA's Further Written Questions (ExQ2) Q2.4.3 [[PD-016](#)], that on the basis of there being no adverse effect on saltmarsh habitat, it is not necessary to secure the reinstatement of such habitat by Requirement in the DCO. NE also advised [[REP6-036](#)] that restoration would not be required for the mudflat feature of the estuary.

Humber Estuary SAC and Ramsar – dispersal of Invasive Non-native Species (INNS)

- 3.1.13 The ExA queried [[PD-009](#)] (ExQ1 Q1.4.8) why the biosecurity measures for INNS in the CEMP [[APP-160](#)] were not considered as mitigation and why the potential effects of INNS have therefore not been taken forward to AA.
- 3.1.14 The Applicant's reasoning [[REP2-006](#)] is that the biosecurity measures are required to ensure that during construction the Applicant meets general (rather than European Site specific) legal requirements in relation to INNS, and to protect the water supply and discharge infrastructure of the Proposed Development from damage during operation; it is not proposed to address a specific potential impact on European Sites. This reasoning has been incorporated into the revised HRA AA Report [[REP1-006](#)].

Humber Estuary SAC, SPA and Ramsar - water pollution

- 3.1.15 NE [[RR-010](#)] advised that the measures outlined to prevent water pollution impacts on the Humber Estuary SAC/SPA during the construction stage of the proposed development (in sections 5.2.58 to 5.2.63 [[APP-041](#)]) would constitute mitigation and should therefore be screened into the AA to ensure that the Applicant's approach was consistent with case law. NE also sought these measures to be secured within the DCO.
- 3.1.16 The Applicant [[REP2-006](#)] accepted NE's position and for purposes of clarity highlighted that its revised HRA report [[REP1-006](#)] reflected this.

Humber Estuary SPA and Ramsar – noise disturbance to bird species

- 3.1.17 NE [[RR-010](#)] disagreed with the methodology applied in the noise disturbance assessment, stating it did not endorse the use of noise disturbance thresholds from the TIDE/ Institute of Estuarine and Coastal Studies (IECS) toolkit and instead expressed a preference for determining whether the predicted noise levels would be significantly greater than the background noise levels.
- 3.1.18 In response to these concerns, the Applicant [[REP1-021](#)] undertook sensitivity testing using the alternative thresholds proposed by NE and incorporated the findings in the revised HRA AA report [[REP1-006](#)]. The Statement of Common Ground (SoCG) with NE (unsigned) [[REP6-006](#)] states that this matter is resolved.

- 3.1.19 NE [RR-010] also advised it supported limiting the cofferdam installation and associated piling works to avoid the wintering period (suggested at section 5.2.21 of the HRA report [APP-041]), but advised that this would constitute mitigation and should be considered in the AA stage of the HRA, and should be secured within the DCO.
- 3.1.20 In response, the Applicant [REP1-021] updated the HRA AA report [REP1-006] to consider disturbance effects on qualifying bird species during cofferdam installation for Adverse Effect on site Integrity (AEoI).

Humber Estuary SPA and Ramsar – impacts to bird foraging resource

- 3.1.21 NE [RR-010] considered that the original HRA report did not contain sufficient evidence regarding the impact of the development on designated bird foraging resource to ascertain whether there was likely to be an adverse effect on the features of the Humber Estuary SPA and Ramsar.
- 3.1.22 In response, the Applicant [REP1-021] updated the HRA AA report [REP1-006] to consider temporary and permanent impacts on bird foraging resources for qualifying species features (sections 5.2.52 – 5.2.58 of revised HRA), concluding no LSE.
- 3.1.23 The SoCG with NE (unsigned) [REP6-006] states that this matter is resolved.

All sites – mitigation for operational impacts on air quality

- 3.1.24 NE [RR-010] advised that the Applicant should clarify the reasons why an AA was required and for which European sites NO_x and ammonia abatement measures were considered necessary. The ExA requested a revised HRA to provide greater clarity on the mitigation measures required and how these would be secured in the DCO [PD-009] (ExQ1 Q1.4.20).
- 3.1.25 NE [RR-010] also requested a version of the air quality assessment without abatement measures included, to evidence the requirement for mitigation. This was also requested by the ExA in ExQ1 [PD-009] (ExQ1 Q1.4.18).
- 3.1.26 In response to these concerns, the Applicant revised the HRA report to clarify the design measures within the Proposed Development that were implicit to meet regulatory requirements and those that were proposed mitigation (abatement) measures for ammonia (i.e. acid wash) (section 6.6.1 – 6.6.7 [REP1-006]), and it presents the unabated results as evidence for the required mitigation.

Table 3.1: The Applicant's screening exercise and degree of agreement with Interested Parties

| Features | Screening result¹: LSE alone or in combination? | Agreed with SCNB and other relevant parties²? | Assessment of effects on integrity required? | Agreed with SNCB and other relevant parties²? |
|--|---|---|---|---|
| <u>Humber Estuary SAC:</u> | | | | |
| Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) | LSE | Yes | Yes | Yes |
| Coastal lagoons | LSE | Yes | Yes | Yes |
| Dunes with <i>Hippophae rhamnoides</i> | LSE | Yes | Yes | Yes |
| Embryonic shifting dunes | LSE | Yes | Yes | Yes |
| Estuaries | LSE | Yes | Yes | Yes |
| Fixed coastal dunes with herbaceous vegetation ("grey dunes") | LSE | Yes | Yes | Yes |
| Mudflats and sandflats not covered by seawater at low tide | LSE | Yes | Yes | Yes |
| <i>Salicornia</i> and other annuals colonizing mud and sand | LSE | Yes | Yes | Yes |

| Features | Screening result¹: LSE alone or in combination? | Agreed with SCNB and other relevant parties²? | Assessment of effects on integrity required? | Agreed with SNCB and other relevant parties²? |
|---|---|---|---|--|
| Sandbanks which are slightly covered by sea water all the time | LSE | Yes | Yes | Yes |
| Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") | LSE | Yes | Yes | Yes |
| Sea lamprey | LSE | Yes | Yes | The issue of entrapment is unclear – see paragraphs 3.1.6 – 3.1.9 of this report |
| River lamprey | LSE | Yes | Yes | The issue of entrapment is unclear - see paragraphs 3.1.6 – 3.1.9 of this report |
| Grey seal | No LSE | Yes | No | Yes |
| <u>Humber Estuary SPA:</u> | | | | |

| Features | Screening result¹: LSE alone or in combination? | Agreed with SCNB and other relevant parties²? | Assessment of effects on integrity required? | Agreed with SNCB and other relevant parties²? |
|--|---|---|---|---|
| <i>Botaurus stellaris</i> ; Great bittern (Non- breeding) | LSE | Yes | Yes | Yes |
| <i>Botaurus stellaris</i> ; Great bittern (Breeding) | LSE | Yes | Yes | Yes |
| <i>Tadorna tadorna</i> ; Common shelduck (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Circus aeruginosus</i> ; Eurasian marsh harrier (Breeding) | LSE | Yes | Yes | Yes |
| <i>Circus cyaneus</i> ; Hen harrier (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Recurvirostra avoetia</i> ; Pied avocet (Non- breeding) | LSE | Yes | Yes | Yes |
| <i>Recurvirostra avoetia</i> ; Pied avocet (Breeding) | LSE | Yes | Yes | Yes |
| <i>Pluvialis apricaria</i> ; European golden plover (Non-breeding) | LSE | Yes | Yes | Yes |

| Features | Screening result¹: LSE alone or in combination? | Agreed with SCNB and other relevant parties²? | Assessment of effects on integrity required? | Agreed with SNCB and other relevant parties²? |
|---|---|---|---|---|
| <i>Calidris canutus</i> ; Red knot (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Calidris alpina alpina</i> ; Dunlin (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Philomachus pugnax</i> ; Ruff (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Limosa limosa islandica</i> ; Black-tailed godwit (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Limosa lapponica</i> ; Bar-tailed godwit (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Tringa totanus</i> ; Common redshank (Non-breeding) | LSE | Yes | Yes | Yes |
| <i>Sterna albifrons</i> ; Little tern (Breeding) | LSE | Yes | Yes | Yes |
| Non-breeding waterbird assemblage | LSE | Yes | Yes | Yes |
| <u>Humber Estuary Ramsar site:</u> | | | | |
| Ramsar Criterion 1: Near-natural estuary, | LSE | Yes | Yes | Yes |

| Features | Screening result¹: LSE alone or in combination? | Agreed with SCNB and other relevant parties²? | Assessment of effects on integrity required? | Agreed with SNCB and other relevant parties²? |
|---|---|---|---|---|
| including; dune systems, humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons | | | | |
| Ramsar Criterion 3: Supports the second largest breeding colony of grey seals in England. | No LSE | Yes | No | Yes |
| Ramsar Criterion 5: Supports an assemblage of waterfowl (non-breeding) of international importance | LSE | Yes | Yes | Yes |
| Ramsar Criterion 6: Supports species/ populations of waterfowl occurring at | LSE | Yes | Yes | Yes |

| Features | Screening result¹: LSE alone or in combination? | Agreed with SCNB and other relevant parties²? | Assessment of effects on integrity required? | Agreed with SNCB and other relevant parties²? |
|--|---|---|---|--|
| levels of international importance. | | | | |
| Ramsar Criterion 8: Migration route for river lamprey and sea lamprey between coastal waters and spawning areas. | LSE | Yes | Yes | For lamprey the issue of entrapment is unclear - see paragraphs 3.1.6 – 3.1.9 of this report |
| <u>Thorne Moor SAC:</u> | | | | |
| Degraded raised bogs still capable of natural regeneration | LSE | Yes | Yes | Yes |
| <u>Hatfield Moor SAC:</u> | | | | |
| Degraded raised bogs still capable of natural regeneration | LSE | Yes | Yes | Yes |
| <u>Thorne and Hatfield Moors SPA:</u> | | | | |
| <i>Caprimulgus europaeus</i> ; European nightjar (Breeding) | LSE | Yes | Yes | Yes |

1. From the Applicant's HRA AA report and screening matrices [[REP1-006](#)].

2. According to the latest SoCG with NE [[REP6-006](#)], MMO [[REP6-007](#)] and NLC [[REP6-005](#)]

3.2 Summary of HRA Screening outcomes during the examination

3.2.1 A total of six European sites were screened by the Applicant prior to examination (see Table 2.1) [[APP-041](#)]. NE and the ExA disputed the Applicant's conclusion of no LSE for the following sites, features and impact pathways:

- Humber Estuary SAC and Ramsar:
 - underwater noise/ vibration disturbance on sea and river lamprey species
 - entrapment of migrating lamprey species arising from cofferdam installation
 - dispersal of INNS
- Humber Estuary SPA and Ramsar:
 - impacts to bird foraging resource
 - construction noise disturbance to bird species
- Humber Estuary SAC, SPA and Ramsar:
 - water pollution
- Humber Estuary SAC:
 - saltmarsh habitat loss/ modification

3.2.2 In addition to the above, NE required further clarification/ justification for the Applicant's positive conclusion of LSE for the following:

- Humber Estuary SAC, SPA and Ramsar, Thorne Moor SAC, Hatfield Moor SAC, Thorne and Hatfield Moors SPA in regard to:
 - Operational air quality impacts.

3.2.3 A revised HRA report and accompanying screening matrices were submitted at Deadline 1 [[REP1-006](#)] in which the Applicant provided further justification for its conclusions of LSE and revised the report to consider the following impact pathways for AEoI:

- Humber Estuary SAC and Ramsar:
 - underwater noise/ vibration disturbance on sea and river lamprey species
- Humber Estuary SPA and Ramsar:
 - construction noise disturbance to bird species
- Humber Estuary SAC, SPA and Ramsar:
 - water pollution

Report on the Implications for European Sites for
Keadby 3 Carbon Capture Power Station Project

- Humber Estuary SAC, SPA and Ramsar, Thorne Moor SAC, Hatfield Moor SAC, Thorne and Hatfield Moors SPA:
 - Operational air quality impacts.

4 ADVERSE EFFECTS ON INTEGRITY

4.1 Conservation Objectives

4.1.1 The conservation objectives for the European sites assessed by the Applicant at the point of the DCO application were included within the Applicant's HRA report [[APP-041](#)].

4.2 The Integrity Test

No Adverse Effects on Site Integrity

4.2.1 The Applicant concluded that the project will not adversely affect the integrity of the European site(s) and feature(s) listed in Table 4.1 below.

4.2.2 During the examination there have been discussions relating to baseline air quality data as well as mitigation measures for several impact pathways leading NE to dispute the Applicant's conclusions of no AEOI. These discussions are detailed below.

4.2.3 The latest SoCG (unsigned) [[REP6-006](#)] indicates that NE has agreed that the Proposed Development would not adversely affect the integrity of the Humber Estuary SAC, SPA and Ramsar. Thorne Moor SAC, Hatfield Moor SAC and Thorne and Hatfield Moors SPA are not specifically mentioned.

All sites – baseline air quality data

4.2.4 NE [[RR-010](#)] recommended that the results of diffusion tube monitoring (carried out to satisfy the conditions of the Keadby 2 power station) of ambient NO_x, NO₂ and NH₃ should be incorporated into the air quality assessment.

4.2.5 The Applicant [[REP2-006](#)] explained that the diffusion tube monitoring results had not been made available to the project at the time of writing the DCO but it would incorporate them into the updated HRA AA Report [[REP1-006](#)] at Deadline 1. The Applicant confirmed [[REP2-006](#)] that the new data did not affect the overall outcome of the air quality assessment or the HRA.

4.2.6 The currently unsigned SoCG with NE [[REP6-006](#)] states (Table 4.2) that the Parties are now agreed that the correct approach has been taken and the results of the monitoring have been incorporated correctly within the updated HRA AA report [[REP1-006](#)]. It further states that the parties agree that the updated air quality information within the updated HRA AA submitted into examination at Deadline 1 addresses the points requested by NE in its Relevant Representation.

Mitigation

4.2.7 In its representation [[RR-010](#)] (Section 5), NE proposed that the draft DCO should secure:

- *“the measures to reduce water pollution impacts during construction of the development;*

- *the use of soft-start methods for piling activity to allow migrating lamprey species associated with the Humber Estuary SAC to pass the development site before piling begins;*
- *use of the abatement measures to reduce the NO_x and ammonia emissions from the development;*
- *avoidance of the wintering bird period for the cofferdam installation and associated piling works, to prevent noise and visual disturbance to the designated features of Humber Estuary SPA; and*
- *a measure stating that if the River Water Abstraction option is chosen then the developer should ensure any mudflat habitat lost due to the installation of the cofferdam is re-established within a 5 year period. If it is not then the developer would be responsible for reinstatement.” (SoCG with NE (unsigned) [REP6-006]).*

4.2.8 The latest (unsigned) SoCG with NE [REP6-006] establishes that:

- Parties are agreed that the Applicant will consider the need to update the Draft DCO where updates to the HRA rely on water pollution prevention measures specific to the Humber Estuary (as opposed to measures which are 'standard'). NE also confirmed [REP6-036] in its response to ExQ2 Q2.3.4 [PD-016] that it is satisfied that this matter is adequately secured by Requirement 13 of the dDCO.
- Parties are agreed that the use of soft-start methods to mitigate effects on the Humber Estuary SAC and Ramsar lamprey features arising from noise and vibration disturbance are adequately secured in the DML 'During Construction, Operation and Maintenance' condition (No. 18 DML) [APP-005].
- Parties have reached agreement over the security of the abatement measures to reduce the NO_x and ammonia emissions from the development (Work 1A of Schedule 1 of the dDCO). See also NE's confirmation [REP6-036] in response to ExQ2 Q2.2.8 [PD-016] that states it is content with the wording of the dDCO in regard to abatement measures.
- Parties are agreed that the Applicant will consider the need to update the Draft DCO following updates to the HRA proposed to demonstrate the minimal loss of bank habitat, including describing the existing concrete apron and existing dredging which is undertaken including replenishment of silts along the river bank at the intake location in the River Trent. NE also confirmed [REP6-036] in response to ExQ2 Q2.4.3 [PD-016] that it does not consider habitat restoration following removal of the cofferdam to be required.

- 4.2.9 With respect to provisions to avoid the wintering bird period for cofferdam installation secured in requirement 5(4)(d) of the draft DCO and condition 19 of the DML, NE's SoCG (unsigned) [REP6-006] indicates that it suggested an update to the DML condition 19 to ensure that avoidance of the wintering period also prevents impacts to Humber Estuary wintering birds and migrating lamprey (in addition to avoiding impacts to salmon).
- 4.2.10 The Applicant stated [REP1-021] that the wording in the DML (condition 19) would be updated to confirm avoidance of impact piling for cofferdam installation between 01 September and 31 March (as opposed to September and November). However, the unsigned SoCG with NE suggests that this is no longer the intention given that requirement 5(4)(d) requires the timing of installation and removal to be approved prior to commencement of the work.

Table 4.1: The Applicant's shadow AA and degree of agreement with Interested Parties

| Features | Adverse Effect on Integrity?¹ | Agreed with SCNB and other relevant parties?² | Comments |
|--|---|---|-------------------------|
| <u>Humber Estuary SAC:</u> | | | |
| Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) | No | Yes | Conclusion not disputed |
| Coastal lagoons | No | Yes | Conclusion not disputed |
| Dunes with <i>Hippophae rhamnoides</i> | No | Yes | Conclusion not disputed |
| Embryonic shifting dunes | No | Yes | Conclusion not disputed |
| Estuaries | No | Yes | Conclusion not disputed |
| Fixed coastal dunes with herbaceous vegetation ("grey dunes") | No | Yes | Conclusion not disputed |
| Mudflats and sandflats not covered by seawater at low tide | No | Yes | Conclusion not disputed |
| <i>Salicornia</i> and other annuals colonizing mud and sand | No | Yes | Conclusion not disputed |

| Features | Adverse Effect on Integrity?¹ | Agreed with SCNB and other relevant parties?² | Comments |
|---|---|---|---|
| Sandbanks which are slightly covered by sea water all the time | No | Yes | Conclusion not disputed |
| Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") | No | Yes | Conclusion not disputed |
| Sea lamprey | No | Yes | Conclusion not disputed |
| River lamprey | No | Yes | Conclusion not disputed |
| Grey Seal | No | Yes | Screened out at Stage 1 – conclusion not disputed |
| <u>Humber Estuary SPA:</u> | | | |
| <i>Botaurus stellaris</i> ; Great bittern (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Botaurus stellaris</i> ; Great bittern (Breeding) | No | Yes | Conclusion not disputed |
| <i>Tadorna tadorna</i> ; Common shelduck (Non-breeding) | No | Yes | Conclusion not disputed |

| Features | Adverse Effect on Integrity?¹ | Agreed with SCNB and other relevant parties?² | Comments |
|--|---|---|-------------------------|
| <i>Circus aeruginosus</i> ; Eurasian marsh harrier (Breeding) | No | Yes | Conclusion not disputed |
| <i>Circus cyaneus</i> ; Hen harrier (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Recurvirostra avoetia</i> ; Pied avocet (Non- breeding) | No | Yes | Conclusion not disputed |
| <i>Recurvirostra avoetia</i> ; Pied avocet (Breeding) | No | Yes | Conclusion not disputed |
| <i>Pluvialis apricaria</i> ; European golden plover (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Calidris canutus</i> ; Red knot (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Calidris alpina alpina</i> ; Dunlin (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Philomachus pugnax</i> ; Ruff (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Limosa limosa islandica</i> ; Black-tailed godwit (Non-breeding) | No | Yes | Conclusion not disputed |

| Features | Adverse Effect on Integrity?¹ | Agreed with SCNB and other relevant parties?² | Comments |
|---|---|---|-------------------------|
| <i>Limosa lapponica</i> ; Bar-tailed godwit (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Tringa totanus</i> ; Common redshank (Non-breeding) | No | Yes | Conclusion not disputed |
| <i>Sterna albifrons</i> ; Little tern (Breeding) | No | Yes | Conclusion not disputed |
| Non-breeding waterbird assemblage | No | Yes | Conclusion not disputed |
| <u>Humber Estuary Ramsar site:</u> | | | |
| Ramsar Criterion 1: Near-natural estuary, including; dune systems, humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons | No | Yes | Conclusion not disputed |
| Ramsar Criterion 5: Supports an assemblage of waterfowl (non- | No | Yes | Conclusion not disputed |

| Features | Adverse Effect on Integrity?¹ | Agreed with SCNB and other relevant parties?² | Comments |
|--|---|---|-------------------------|
| breeding) of international importance | | | |
| Ramsar Criterion 6: Supports species/ populations of waterfowl occurring at levels of international importance. | No | Yes | Conclusion not disputed |
| Ramsar Criterion 8: Migration route for river lamprey and sea lamprey between coastal waters and spawning areas. | No | Yes | Conclusion not disputed |
| <u>Thorne Moor SAC:</u> | | | |
| Degraded raised bogs still capable of natural regeneration | No | Yes | Conclusion not disputed |
| <u>Hatfield Moor SAC:</u> | | | |
| Degraded raised bogs still capable of natural regeneration | No | Yes | Conclusion not disputed |
| <u>Thorne and Hatfield Moors SPA:</u> | | | |

| Features | Adverse Effect on Integrity?¹ | Agreed with SCNB and other relevant parties?² | Comments |
|---|---|---|-------------------------|
| <i>Caprimulgus europaeus</i> ; European nightjar (Breeding) | No | Yes | Conclusion not disputed |

1. From Applicant's HRA AA report [[REP1-006](#)].
2. According to latest SoCG with NE [[REP6-006](#)], MMO [[REP6-007](#)] and NLC [[REP6-005](#)]