



The Planning Inspectorate  
Yr Arolygiaeth Gynllunio

# **REPORT on the IMPLICATIONS for EUROPEAN SITES**

Application by Eggborough  
Power Limited for an Order  
Granting Development  
Consent for the Eggborough  
CCGT Project

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

Planning Inspectorate Reference: **EN010081**

25 January 2018

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### **ANNEX 1 STAGE 1 MATRICES: SCREENING FOR LIKELY SIGNIFICANT EFFECTS**

### **ANNEX 2 STAGE 2 MATRICES: ADVERSE EFFECT ON INTEGRITY**

Report on the Implications for European Sites for  
Eggborough CCGT Project

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# 1. INTRODUCTION

## 1.1 Background

- 1.1.1 Eggborough Power Limited (the Applicant) has applied to the Secretary of State for a development consent order (DCO) under section 37 of the Planning Act 2008 (as amended) for the proposed Eggborough CCGT Project (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 Directive<sup>1</sup> and the Habitats Regulations<sup>2</sup> for applications submitted under the Planning Act 2008 regime (as amended). 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 24 January 2018 in relation to potential effects to European Sites<sup>3</sup>. It is not a standalone document and should be read in conjunction with the examination documents referred to. Where document references are presented in bold and in square brackets in the text of this report (eg **[APP-001]**), 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/EN010081-000911>
- 1.1.4 It is issued to ensure that interested parties including the statutory nature conservation bodies: Joint Nature Conservation Committee (JNCC) / Natural England (NE) are consulted formally on Habitats Regulations matters. This process may be relied on by the Secretary of State for the

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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). These regulations came into force on 30 November 2017 and the application for development consent must be considered in the context of these regulations. At the point of the submission of the application for development consent for the Proposed Development in May 2017, the applicable regulations were The Conservation of Habitats and Species Regulations 2010 (as amended), which are revoked by the 2017 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 the Inspectorate's Advice Note 10.

purposes of Regulation 63(3) of the Habitats Regulations. Following consultation the responses will be considered by the ExA in making their recommendation to the Secretary of State and made available to the Secretary of State along with this report. The RIES is not revised following consultation.

- 1.1.5 The Applicant has not identified any potential impacts that would affect any other EEA States<sup>4</sup> (paragraph 3.13.9 [APP-041]). Only UK European sites are addressed in this report.

## 1.2 Documents used to inform this RIES

- 1.2.1 The Applicant provided a HRA report entitled "Habitats Regulations Assessment (HRA) Matrices Signposting" [APP-111] ("the HRA Report") with the DCO application, which included screening matrices prepared in accordance with the Planning Inspectorate's (the Inspectorate's) Advice note ten (AN10)<sup>5</sup>.
- 1.2.2 The Applicant's HRA report was an appendix to Chapter 10 of the ES (Ecology) [APP-048]. The HRA report also included specific cross references to Chapter 8 (Air Quality) [APP-046] and Chapter 11 (Water Resources, Flood Risk and Drainage) [APP-049] of the ES. The HRA report itself states that "*all the information necessary to undertake an HRA is contained within the main chapters of the ES (Volume I)*" and therefore the HRA report seeks to provide a "bridge" to the necessary topics within the ES to assist the competent authority in meeting their obligations in respect of the Habitats Regulations.
- 1.2.3 The Applicant concluded within their DCO application that there would be no likely significant effects (LSE) on all European site(s) that were screened.

### Examination

- 1.2.4 None of the European sites and their qualifying features identified in the Applicant's HRA report and subsequent submissions have been disputed or queried by interested parties during the examination.
- 1.2.5 The relevant representation made by the NE [RR-005] states that "*There are no European sites, Ramsar sites or nationally designated landscapes located within the vicinity of the project that could be significantly affected*". A statement of common ground (SoCG) between the Applicant and NE [REP1-007] recorded the agreement with the Applicant that "there is unlikely to be any significant effects on designated site features, due to the distance from the sites and the absence of any pathways for

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4 European Economic Area (EEA) States.

5 Advice note ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects. Available from: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

potential effects”, and reference is made to NE’s agreement with the Applicant’s HRA screening matrices [**APP-111**].

- 1.2.6 The ExA has had regard to the responses received at first written questions [**PD-007**], matters discussed at issue specific hearings (ISH) [**EV-004**; **EV-007**] and representations made by interested parties during the examination. The ExA has also asked specific questions and requested information regarding the HRA under rule 17 of The Infrastructure Planning (Examination Procedure) Rules 2010 (as amended) on 5 December 2017 [**PD-010**]. The Applicant responded to the rule 17 request on 9 January 2018 [**REP5-006**] and provided additional documents in relation to HRA. The information received in response to the rule 17 request is set out below, and includes information to inform an appropriate assessment for one of the European sites screened in to the assessment by the Applicant and an accompanying matrix to consider adverse effects on integrity.

#### Application Documents

- ES Appendix 10H: Habitats Regulations Assessment (HRA) Matrices Signposting [**APP-111**];
- ES Chapter 8: Air Quality [**APP-046**] (and Appendix 8A [**APP-100**]);
- ES Chapter 10: Ecology [**APP-048**] (and Appendix 10H [**APP-111**]);
- ES Chapter 11: Water Resources, Flood Risk and Drainage [**APP-049**];
- ES Appendix 5A - Construction Environmental Management Plan (CEMP) [**APP-099**] (as updated by [**REP2-020**]).

#### Statements of Common Ground

- Statement of Common Ground between the Applicant and NE (Revision 1.0) [**REP1-007**];

#### Hearing Documents

- ISH: Environmental Issues (22 November 2017) [**EV-007**] – [**EV-010**];
- Applicants written summary of ISH on Environmental Matters [**REP3-010**];

#### Rule 17 Request Information

- ExA’s formal request for further information under Rule 17 [**PD-010**];
- Applicant’s response to Rule 17 request [**REP5-006**] including:

- Appendix 1 – Habitats Regulations Assessment Signposting Report and Screening and Integrity Matrices (superseding the previous iteration [APP-111]<sup>6,7</sup>). The HRA Report also contains:
  - o Appendices A – F: European site citations
  - o Appendix G: HRA matrices<sup>8</sup>
  - o Appendix H: Memo dated 5 January 2018 in response to a request for more Information in relation to the recently submitted Environmental Permit Variation for Eggborough Power Limited (EPR/VP3930LH/V011

#### Other Documents

- Technical Note on Air Quality Impacts [REP2-017] (Appendix 3 to the Applicant's response to the ExA's First Written Questions [REP2-014], [PD-007])

### 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 25 January 2018. 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 LSE, either alone or in-combination with other projects and plans.
- **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.

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6 Subsequent references in this RIES to the HRA Report submitted as part of the DCO application [APP-111] are made to the version submitted as [REP5-006].

7 The updated HRA Report [REP5-006] acknowledges the Proposed Development and the role of the competent authority in the context of the 2017 Habitats Regulations (the Habitats Regulations), thereby updating reference to the 2010 Habitats Regulations (now revoked) in the superseded HRA Report [APP-111].

8 Appendix G of the HRA Report is entitled "Report on the Implications for European Sites". For clarity that submission by the Applicant should not be confused with the title and purpose of this report (the RIES) which is the ExA's report prepared with the support of the Inspectorate's Environmental Services Team.



## 2. OVERVIEW

### 2.1 European Sites Considered

2.1.1 The Applicant has not specifically stated that the project is or is not connected with or necessary to the management for nature conservation of any of the European site(s) considered within their assessment. However, the Applicant notes the legislative basis for determining LSE and the need for appropriate assessment (box 1 of the HRA Report [REP5-006]) by citing Article 6(3) of the Habitats Directive.

2.1.2 There is no reference in the application documents or any submissions made by the Applicant or interested parties during the examination to suggest that the Proposed Development is connected with or necessary to the management of any European site.

#### European Sites Screened in to the Assessment by the Applicant

2.1.3 Sections 1.1 and 2.4 of the HRA Report [REP5-006] explain the Applicant's approach taken to identify European sites to be screened into the assessment. Table 2.1 below presents the list of sites that are screened in to the assessment as described in the HRA Report.

**Table 2.1 Sites Screened into the HRA by Applicant**

| Name of European Site                                   | Qualifying Habitats / Species   |
|---|---|
| Skipwith Common Special Area of Conservation (SAC) (E7) | <ul style="list-style-type: none"> <li>• European dry heaths;</li> <li>• Northern Atlantic wet heaths with <i>Erica tetralix</i>.</li> </ul>  |
| Thorne Moor SAC (E8)                                    | Degraded raised bogs still capable of natural regeneration  |
| Hatfield Moor SAC (E15)                                 | Degraded raised bogs still capable of natural regeneration  |
| Humber Estuary SAC (E6)                                 | <u>Qualifying Annex I habitats</u> <ul style="list-style-type: none"> <li>• Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)</li> <li>• Coastal lagoons (priority habitat)</li> <li>• Dunes with <i>Hippophae rhamnoides</i></li> <li>• Embryonic shifting dunes</li> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Fixed dunes with herbaceous vegetation ('grey dunes') (priority habitat)</li> <li>• <i>Salicornia</i> and other annuals colonising mud and</li> </ul> |

| Name of European Site                        | Qualifying Habitats / Species  |
|--|--|
|  | <p>sand</p> <ul style="list-style-type: none"> <li>• Sandbanks which are slightly covered by sea water all the time</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')</li> </ul> <p><u>Qualifying Annex II species:</u></p> <ul style="list-style-type: none"> <li>• Grey seal <i>Halichoerus grypus</i></li> <li>• River lamprey <i>Lampetra fluviatilis</i></li> <li>• Sea lamprey <i>Petromyzon marinus</i></li> </ul> |
| Humber Estuary Special Protection Area (SPA) | <ul style="list-style-type: none"> <li>• Populations of European importance of Annex I and Annex II over-wintering wildfowl and wading birds.</li> <li>• Internationally important assemblage of migratory and wintering birds.</li> </ul>   |
| Humber Estuary Ramsar                        | <ul style="list-style-type: none"> <li>• Estuarine habitats including dune systems, intertidal mud and sand flats, saltmarshes and brackish lagoons.</li> <li>• Grey seal.</li> <li>• Internationally important populations of passage wildfowl and waders.</li> </ul>   |
| Strensall Common SAC (E13)                   | <ul style="list-style-type: none"> <li>• European dry heaths.</li> <li>• Northern Atlantic wet heaths with <i>Erica tetralix</i></li> </ul>  |
| North York Moors SAC (E14)                   | <ul style="list-style-type: none"> <li>• Blanket bogs (priority habitat)</li> <li>• European dry heaths</li> <li>• Northern Atlantic wet heaths with <i>Erica tetralix</i>.</li> </ul>   |

2.1.4 Tables 10H.1 and 10H.2 of the HRA report [REP5-006] set out the Natura 2000 Sites considered as part of the Applicant's HRA screening for LSE and include information as follows:

- Table 10H.1:
  - Approximate distances of the site from the Proposed Development;
  - Summaries of reasons for site selection and qualifying features;
- Table 10H.2:
  - Conservation objectives for the sites.

2.1.5 Sections 1.1 and 2.4 of the HRA report [REP5-006] explain that a radius of 10km from the Proposed Development was taken as being the "typically accepted zone of influence in which potential pathways for impacts are

*considered*" and that therefore European sites within this radius would be considered.

- 2.1.6 The Applicant extended the 10km in order to more conservatively consider potential effects, particularly in respect of habitats susceptible to the effects of atmospheric nitrogen deposition during the operation of the Proposed Development (paragraph 2.4 of the HRA Report [REP5-006]).
- 2.1.7 The ES ([APP-046], [APP-048] and [APP-049]) identifies the River Derwent SAC as being a European site that could be potentially affected by air quality impacts resulting from the Proposed Development. The River Derwent SAC is also identified as a receptor in the Applicant's Technical Note on Air Quality Impacts [REP2-017] and in Appendix H to the HRA Report [REP5-006] (the River Derwent SAC is not referenced anywhere else in the HRA report). Despite this there is no formal assessment or conclusions as to LSE on the features of the site resulting from air quality or water quality impacts within the main body of the HRA Report [REP5-006].
- 2.1.8 At the present time it is unclear if/how impacts to water and air quality at the River Derwent SAC have been addressed in terms of the HRA LSE screening process. The Applicant has also not provided the citation which accompanies the SAC designation. These points are considered further in the following sections of this report.
- 2.1.9 There have been no matters raised by the interested parties in relation to the Applicant's identification of European sites or their qualifying habitats / species during the examination.

## **2.2 HRA Matters Considered During the Examination**

- 2.2.1 During the examination, the ExA sought clarification (questions 1-8, item 2 of [EV-007] and PD-010) regarding the methodology applied in the assessment of air quality impacts, particularly the relationship with the HRA and the finding of no LSE.
- 2.2.2 North Yorkshire County Council (NYCC) and Selby District Council (SDC) in their joint local impact report (LIR) [REP2-039] raised concerns around the Proposed Development upon European sites. Their concerns focussed on the need for Selective Catalytic Reduction (SCR) and the impact this would have. These concerns were also reflected in their SoCG with the Applicant [REP3-006] (albeit this is not signed by any party as of 25 January 2018).
- 2.2.3 Appendix H of the Applicant's HRA Report [REP5-006] provides further detail on the potential impacts from SCR to the identified European sites.
- 2.2.4 During the course of the examination the EA have made various submissions [REP2-032], [REP3-008], [REP5-010] but do not make

specific reference to the Applicant's HRA information. The EA's relevant representation explains their role as the competent authority under the Habitats Directive in terms of the Environmental Permitting (England and Wales) Regulations 2016 (and that the EA are in receipt of the Applicant's permit variation application) ([RR-007], [REP2-032]).

### 3. LIKELY SIGNIFICANT EFFECTS

- 3.0.1 Section 3 of the Applicant's HRA Report [**REP5-006**] explains the approach taken for screening LSE as European sites. Section 1.2 and Box 1 of the HRA report set out the basis for determining LSE and reference is made to the Office of Deputy Prime Minister (ODPM) Circular 06/2005<sup>9</sup> in terms of providing guidance on the implementation of the Habitats Regulations. The list of references at section 6 of the HRA Report also cites European Commission (EC) guidance<sup>10,11</sup>.
- 3.0.2 The Applicant identifies that the potential impacts pathways from the Proposed Development to the qualifying features of the European sites. The impacts identified fall within two categories (section 3.1 of the HRA Report [**REP5-006**]) as follows:
- **Surface water quality impacts**– potential pathways for surface water pollution to the River Aire (and ultimately to the Humber Estuary SAC/ SPA/ Ramsar) during construction; and
  - **Air quality impacts**– potential pathways identified to European sites through emissions to air during the operational phase of the Proposed Development (ie nitrogen and acid deposition to susceptible habitats within the identified European sites).
- 3.0.3 These impacts as they relate to European sites are considered separately in sections 3.1 and 3.2 of this RIES. No further impact pathways were identified by the Applicant as part of the ES or HRA Report [**REP5-006**].
- 3.0.4 Section 3.4 of the HRA Report outlines the Applicant's approach to consideration of in-combination effects. The HRA refers to the list of other projects considered as part of the cumulative impact assessment in Chapter 20 of the ES (table 20.2 of [**APP-058**]). A number of other projects identified in the table have been scoped out from the HRA on the basis that "*there are no pathways by which the schemes could adversely affect ecological receptors within the zone of influence*" (Section 3.4 of [**REP5-006**]). Evidence to support the Applicant's position on these points are presented in paragraphs 20.5.43 – 20.5.45 of ES Chapter 20.
- 3.0.5 The list of other projects and relevant European sites considered by the Applicant as part of the HRA is presented in table 10H.4 of the HRA report [**REP5-006**] and summarised in Table 3.1 of this RIES.

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9 ODPM (2005) Government Circular: Biodiversity and Geological Conservation - Statutory obligations and their impact within the planning system

10 EC (2007) Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC

11 EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC

3.0.6 Neither the scope of the screening assessment to determine LSE (ie the potential pathways by which the Proposed Development could impact the identified European sites) nor the extent of the plans and projects considered as part of the assessment of in-combination effects have been disputed by any interested party during the examination.

**Table 3.1 Summary of the Applicant’s in-combination assessment (based on Table 10H.4 of the HRA Report [REP5-006])**

| European site(s)      | Other projects considered in the Applicant’s HRA in-combination assessment (✓ indicates inclusion as part of the assessment) |                         |                           |                         |                                  |                   |                            |                             |               |               |                    |
|-----------------------|--|-------------------------|---------------------------|-------------------------|----------------------------------|-------------------|----------------------------|-----------------------------|---------------|---------------|--------------------|
|                       | Eggborough Power Station Decomm. and Demol.  | Ferrybridge Multifuel 2 | Knottingley Power Project | Southmoor Energy Centre | Advanced Thermal Treatment Plant | Thorpe Marsh CCGT | Thorpe Marsh CCGT Pipeline | Chapel Haddlesey Hydroelec. | Drax Re-power | West Burton C | Ferrybridge D CCGT |
| Skipwith Common SAC   | ✓  | ✓                       | ✓                         | ✓                       | ✓                                | ✓                 |                            |                             |               |               |                    |
| Thorne Moor SAC       | ✓  | ✓                       | ✓                         | ✓                       | ✓                                | ✓                 | ✓                          |                             | ✓             | ✓             | ✓                  |
| Hatfield Moor SAC     | ✓  | ✓                       | ✓                         | ✓                       | ✓                                | ✓                 |                            |                             |               |               |                    |
| Humber Estuary SAC    | ✓  |                         |                           |                         |                                  |                   |                            | ✓                           |               |               |                    |
| Humber Estuary SPA    | ✓  |                         |                           |                         |                                  |                   |                            | ✓                           |               |               |                    |
| Humber Estuary Ramsar | ✓  |                         |                           |                         |                                  |                   |                            | ✓                           |               |               |                    |
| Strensall Common SAC  | ✓  | ✓                       | ✓                         | ✓                       | ✓                                | ✓                 |                            |                             |               |               |                    |
| North York Moors SAC  | ✓  | ✓                       | ✓                         | ✓                       | ✓                                | ✓                 |                            |                             |               |               |                    |
| River Derwent SAC     | N/a (see paragraphs 2.1.7 – 2.1.8 of this RIES)  |                         |                           |                         |                                  |                   |                            |                             |               |               |                    |

### 3.1 Surface Water Quality

- 3.1.1 The Humber Estuary SPA, SAC and Ramsar sites are the only sites considered in relation to surface water impacts from the Proposed Development. These sites are located downstream of the River Aire and are therefore in hydrological connectivity with the Proposed Development [REP5-006].
- 3.1.2 The HRA Report does not identify any other affected surface water features with connectivity to European sites (as shown on Figure 10H.1 of the HRA Report). Therefore no other European sites were considered to be of relevance to the HRA screening for LSE from surface water quality effects [REP5-006].
- 3.1.3 The HRA Report states: *'in the absence of appropriate mitigation, there could be surface water pollution to the [River] Aire during the construction or operational phases that could reach the designated features [of the Humber Estuary SPA, SAC and Ramsar]. However, over this distance [approximately 25km] and even in the absence of mitigation, it is reasonable to assume that any surface water pollution would have significantly diluted over this distance such that it would not pose a risk to designated features'* (section 3.1.1 of the HRA Report [REP5-006]).
- 3.1.4 The HRA Report addresses the mitigation measures to be put in place during construction (including best practice measures and those that are legally necessary). These measures will be delivered through the Construction and Environmental Management Plan (CEMP) [REP2-020] and secured through draft DCO (dDCO) requirement 18 [REP5-002]<sup>12</sup>. On this basis LSE to European sites from surface water quality impacts are ruled out. These mitigation measures are summarised in section 3.3 of the HRA Report.
- 3.1.5 The HRA Report explains that during operation the *'cooling towers will be used to control thermal discharges to the river and any pollutant discharges will be monitored, treated and controlled through an Environmental Permit required for the operation of the plant.'* Further reference is made to the potential for surface water quality impacts to European sites during operation at in table 10.6 of ES Chapter 10 [APP-048], and paragraphs 11.6.32 – 11.6.47 of ES Chapter 11 [APP-049].
- 3.1.6 Paragraph 11.6.4 of ES Chapter 11 [APP-049] explains that the volume of water required for abstraction and discharge for the Proposed Development will be lower than that required at existing Eggborough coal-fired power station. It also explains that the temperature of the proposed cooling water discharge to the River Aire for the Proposed Development

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<sup>12</sup> At the time of publication of this RIES, the Applicant's dDCO version 4.0 [REP5-002] is the most current version



will be similar to that currently entering the River from the existing coal fired power station (i.e. the current baseline). This is also reflected in paragraph 10.6.44 of ES Chapter 10 [**APP-048**].

- 3.1.7 On the basis that the Environmental Permit regime for the Proposed Development will ensure that intake and outfall to the River Aire avoid any adverse effects on the water quality of river and downstream European sites, the Applicant's position is that '*Operational impacts on the river and thereby on the Estuary are therefore considered to be insignificant*' and LSE from the proposed development alone are not likely<sup>13</sup>.
- 3.1.8 The HRA Report does not reference the Outline Drainage Strategy but the ExA notes that this has been developed in draft and is applicable '*to the effective and safe drainage of surface water from the Proposed Development Site*' (Annex 5 of [**APP-112**]). The ExA also notes that the details relating to the final drainage design are to be secured by the dDCO requirements 5 and 13 [**REP5-002**]<sup>12</sup>.
- 3.1.9 The HRA report [**REP5-006**] includes consideration of water quality impacts in-combination with other plans and projects (to the Humber Estuary SPA, SAC and Ramsar sites).
- 3.1.10 . The other projects considered in the in-combination assessment include Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SPA, SAC and Ramsar sites in-combination with the Proposed Development These conclusions are made on the basis that potential effects of the Eggborough Power Station Decommissioning are identified as part of the assessment of the Proposed Development alone, and in the case of the hydroelectric scheme, the construction timescales are no predicted to overlap (see Table 10H.4 of the HRA Report [**REP5-006**]).
- 3.1.11 The text in section 3.4 of the HRA Report [**REP5-006**] focuses largely on in-combination effects arising from air quality matters and little or no further explanation of in-combination effects in terms of surface water quality.
- 3.1.12 As reported in Table 3.1 of this RIES, the potential for LSE from water quality impacts on the River Derwent SAC alone or in-combination with other plans and projects is not considered by the Applicant. Based on the figures and information provided by the Applicant (eg Figure 10H.1 of [**REP5-006**] and ES Chapters 10 and 11 ([**APP-048**] and [**APP-049**])), and the understanding of the local and regional geography from

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13 Table 2.1 of the 'Other Consents and Licences' document prepared by the Applicant [**REP2-010**] refers to the potential need for an Environmental Permit for the discharges during construction, the retention of existing abstraction licences in connection with the Proposed Development and an operational Environmental Permit.

unaccompanied site visits, it is not obvious to the ExA that such pathways of impacts exist ie the River Derwent SAC is essentially “upstream” of the point where the River Aire meets the River Ouse, although the Applicant has not specifically explained this.

- 3.1.13 LSE during the decommissioning phase of the Proposed Development have been scoped out for all European sites. This is on basis that the gas connection pipeline, cooling water abstraction pipeline and the intake and outfall structures on the River Aire (associated with the construction of the Proposed Development) will remain in-situ (Appendix G [REP5-006]). References to decommissioning in terms of water resources are made at paragraphs 11.5.43 and 11.6.58 of [APP-049], which liken potential effects to those identified during construction and refer to a *'detailed Decommissioning Environmental Management Plan [which] will be prepared to identify required measures to prevent pollution during this phase of the development'*.
- 3.1.14 None of the interested parties to the examination made any representations on the Applicant's approach to consideration of LSE on surface water quality during decommissioning.

## 3.2 Air Quality

- 3.2.1 Air quality impacts to European sites during operation of the Proposed Development have been identified and are of relevance to the findings of the HRA (sections 3.1 and 3.1.2 of [REP5-006]).
- 3.2.2 No specific reference is made to the potential for air quality impacts upon European sites during construction of the Proposed Development in [REP5-006]). However, paragraphs 8.4.2, 8.4.5 and table 8.11 of ES Chapter 8 [APP-046] explain that during construction:
- Receptors potentially affected by dust soiling and short term concentrations of PM<sub>10</sub> generated during construction activities are limited to those located within 350m of the nearest construction activity<sup>14</sup>; and
  - SAC's up to 15 km from the Proposed Development Site have been considered in the identification of receptors, but all are in excess of 9km from the site (these distances are also presented in table 10H.1 of [REP5-006]).
- 3.2.3 Paragraph 8.6.3 of ES Chapter 8 [APP-046] concludes that *'No sensitive ecological receptors have been identified within the screening distance and therefore effects of demolition and construction dust on ecological receptors [inclusive of European sites as listed in table 8.11 of the ES]*

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<sup>14</sup> Based on Institute of Air Quality Management (IAQM) (2014) Guidance on the assessment of dust from demolition and construction.

*have been screened out*. Table 10.6 of ES Chapter 10 [APP-048] concludes that there is no reasonable likelihood of impacts on international nature conservation designations during the construction phase (cross referring to the ES Chapter 8 in terms of air quality effects [APP-046]).

- 3.2.4 The ExA also notes the framework CEMP [REP2-020] includes specific air quality mitigation measures to minimise air quality impacts from construction works.
- 3.2.5 In terms of decommissioning of the Proposed Development, paragraph 8.6.44 of ES Chapter 8 [APP-046] states that *'the predicted air quality effects of eventual decommissioning of the Proposed Development are considered to be comparable to – or less than – those assessed for construction activities'*.
- 3.2.6 The HRA Report is therefore focused towards potential air quality impacts during operation, which are identified and described in section 3.1.2 of the HRA Report [REP5-006] as follows:
- Increased atmospheric concentrations of oxides of nitrogen (NOx) (hourly and annual mean concentrations);
  - Increased nutrient nitrogen deposition;
  - Increased acid deposition (sulphur and nitrogen); and
  - Increased ammonia concentrations (only if/ when SCR abatement is required).
- 3.2.7 The assessment of air quality impacts of the Proposed Development are set out in paragraphs 8.6.16 – 8.6.43 of ES Chapter 8 [APP-046] and supplemented by technical appendix 8A of the ES [APP-100]. Table 8.10 of ES Chapter 8 [APP-046] and section 8A.3 of [APP-100], in particular explain the modelling parameters used for the assessment of LSE.
- 3.2.8 Paragraph 8.3.29 of ES Chapter 8 [APP-046] states that *'emissions from the Proposed Development...have been assessed using the EA Risk assessment methodology'*<sup>15</sup> (hereinafter referred to as the EA permitting guidance). The application of the EA's permitting guidance methodology in the context of HRA and the conclusions reached in respect of LSE for European sites have been examined and are addressed below.
- 3.2.9 The EA permitting guidance methodology focusses on the maximum process contributions relevant to identified sensitive receptors taking into account the relevant critical levels and loads applicable to each receptor in accordance with data published by the UK Air Pollution Information System

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15 Department for Environment, Food & Rural Affairs and Environment Agency: Air emissions risk assessment for your environmental permit [on-line]. Available from: <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

(APIS). The approach is described at paragraphs 8.3.33 – 8.3.35 of [APP-046].

3.2.10 During the course of the examination, the Applicant also submitted a Technical Note on Air Quality Impacts [REP2-017] and Appendix H to the HRA Report [REP5-006], both of which provide additional information on the air quality impacts of the Proposed Development on European sites during operation, and the consideration of LSE. The Applicant further defines the terms 'critical levels' and 'critical loads' in paragraphs 3.1 and 3.2 of [REP2-017].

3.2.11 The assessment considers the potential impacts of the Proposed Development including the use of SCR for the abatement of NO<sub>x</sub> emissions<sup>16</sup>. The Applicant therefore includes in the air quality assessment (and HRA Report) consideration of 'with' and 'without' SCR scenarios, and the dDCO allows for either scenario given the use of SCR is determined as part of the separate Environmental Permitting process.

3.2.12 The Applicant describes their 'conservative' approach to the assessment in paragraph 8.6.19 of ES Chapter 8 [APP-046] as comprising:

- use of the worst-case year of meteorological data modelled;
- maximum building sizes within the assessed Rochdale Envelope;
- 'worst case' CCGT layout configuration as allowed by the DCO;
- annual operation of 100% for both CCGT main plant units and peaking plant units;
- operation of the plant at IED emission limits (for worst-case NO<sub>x</sub> and CO); and
- conservative estimates of background concentrations at the sensitive receptors.

3.2.13 In the ExA's first written questions, a number of questions were posed regarding the Applicant's approach to the assessment of air quality effects. The questions addressed the conservative approach to the assessment and the potential use of SCR (AQ1.1 – AQ1.23 [PD-007]).

3.2.14 The responses from the Applicant and the EA included clarification and explanation regarding the adopted approach ([REP2-014] and [REP2-032]). In particular, the EA confirmed that '*The determination* [of whether or not the Proposed Development would require SCR as part of the

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<sup>16</sup> Selective catalytic reduction (SCR) achieves lower emissions of NO<sub>x</sub> from the Proposed Development (in accordance with Best Available Techniques (BAT) under the European Commission Industrial Emissions Directive (IED)). This is explained by the Applicant at paragraphs 8.2.8 – 8.2.13 of ES Chapter 8 [APP-046]. The IED is transposed into UK legislation by the Environmental Permitting (England and Wales) Regulations 2016 and therefore the determination of what constitutes BAT is made under those regulations by the EA, and not part of the DCO (see EA's response to ExA's written questions AQ 1.9 and AQ 1.11 [REP2-032] and section 3 of the SoCG between the Applicant and the EA [REP3-008]).

environmental permitting process] *will conclude which approach to emissions control represents Best Available Technique (BAT) for this installation, given its characteristics, location and geographical context'* [REP2-032].

3.2.15 The NYCC / SDC Local Impact Report (LIR) [REP2-039] expressed concerns around the potential effects on European sites associated with SCR and the Applicant's screening conclusions of no LSE.

3.2.16 Table 10H.3 of the HRA Report sets out those European sites which are considered to be of relevance in the assessment of air quality effects (ie those with features potentially susceptible to changes in air quality), they are:

- Skipwith Common SAC;
- Thorne Moor SAC;
- Hatfield Moor SAC;
- Strensall Common SAC; and
- North York Moors SAC.

3.2.17 Impacts to the Humber Estuary SAC from changes in air quality are not identified within Table 10H.3 of the HRA Report. Matrix D of Appendix G also does not consider air quality impacts during operation on this site. However, Chapter 8 of the ES [APP-046] identifies the Humber Estuary SAC as being a sensitive ecological receptor to changes in air quality, and is reflected in the modelling undertaken to inform the assessment<sup>17</sup>.

3.2.18 Similarly, the Humber Estuary SPA and Ramsar sites are referred to at section 10.4.3 of ES Chapter 10 [APP-048] as being "*scoped into the assessment, as they are located downwind (of the prevailing wind) of the Proposed Development and have qualifying habitats that are sensitive to changes in air quality*". These sites do not appear as sensitive receptors in ES Chapter 8 nor does air quality appear as an impact in Table 10H.3 or matrix E or F (Appendix G) of the HRA Report.

3.2.19 The ExA notes that the primary reasons for site selection for the Humber Estuary Ramsar are similar to those of the Humber Estuary SAC (Table 10H.1 of the HRA Report). There is no explanation as to the potential pathways of effect from air quality impacts in the context of the primary reasons for site selection of the Humber Estuary SPA.

3.2.20 As per paragraphs 2.1.7 – 2.1.8 of this RIES, the only reference to the River Derwent SAC in Appendix H of the HRA Report [REP5-006] although it is identified as a relevant European site within the both ES Chapters 8

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<sup>17</sup> As presented in Appendix 8A of the ES [APP-100], the Technical Note on Air Quality Impacts [REP2-017] and Appendix H of the HRA Report [REP5-006]

and 10 [APP-046],[APP-048]. The Applicant therefore has not acknowledged in the HRA Report:

- the River Derwent SAC within Table 10H.1 (Natura 2000 Sites Scoped into HRA Screening) or provided a summary of primary reasons for site selection or a summary of qualifying features;
- the conservation objectives for the site (Table 10H.2 of the HRA Report); and
- the potential impact pathways of the Proposed Development alone or in combination with other plans and projects (Tables 10H.3 and 10H.4).

3.2.21 There are no matrices provided in respect of the River Derwent SAC at Appendix G of the HRA Report.

3.2.22 The HRA Report explains that the assessment of in-combination effects is based on a 'qualitative' approach and this is reported in paragraph 20.5.10 of ES Chapter 20 [APP-058] ie there is no quantitative assessment of in-combination effects of air quality impacts from the Proposed Development operating alongside the other identified projects.

3.2.23 The matrices in Annex 1 of this RIES summarise the findings of LSE associated with changes in air quality [REP5-006] and based on the assessment tables presented in [APP-100] and [REP2-017].

3.2.24 In considering the potential impacts the Applicant reports the increases in process contributions against the most sensitive habitat for which the statutory designation applies within 15km study area. The Applicant then applies the conclusions of the effect to the other qualifying features without considering qualifying features on an individual basis. This is reflected in table 1 of Appendix H to the HRA Report Appendix H [REP5-006] and table 1 of the technical note on air quality impacts [REP2-017].

### 3.3 Main Issues of the Examination

3.3.1 The ExA's first written questions (AQ 1.1 – AQ 1.23 of [PD-007]), included points relating to the assessment of air quality presented in the ES [APP-046], [APP-048]. The questions sought clarification regarding:

- The 'worst case' modelling assumptions in terms of maximum EU IED emission limit values, including the black start and peaking plant specifications;
- The position of the Applicant and the EA in respect of SCR and BAT determination; and
- Mitigation measures, such as increased stack heights or additional flue gas controls, that may have been considered in the scenario where SCR was required.

3.3.2 The Applicant responded to these points at deadline 2 of the examination [REP2-014] and the EA's response was provided alongside their written representation [REP2-032]. As part of the deadline 2 submissions, the Applicant provided a technical note on air quality impacts [REP2-017]. The reason for the technical note is stated as being:

*'...in relation to Eggborough Power Limited's Environmental Permit variation application for the proposed Eggborough CCGT Project, with the purpose of bringing together the air quality impact assessment on European designated habitat sites with and without the use of Selective Catalytic Reduction (SCR) for the control of oxides of nitrogen (NOx) from the Proposed Development.'*

3.3.3 The Applicant's information is *"...submitted in order to confirm that an Appropriate Assessment, as defined by the Habitats Regulations, is not required on the basis that the Proposed Development will not have a significant adverse effect, either alone or in combination with other projects, on a European site"*

3.3.4 The tables in the Applicant's technical note on air quality [REP2-017] were therefore considered to supplement (and where appropriate supersede) those presented in appendix 8A of the ES [APP-100].

3.3.5 No specific questions on air quality matters were put to NE as part of [PD-007] and NE did not submit any written response to the questions. The SoCG between the Applicant and NE [REP1-007]<sup>18</sup>. recorded the agreement with the Applicant that *"there is unlikely to be any significant effects on designated site features, due to the distance from the sites and the absence of any pathways for potential effects"*

3.3.6 In their LIR [REP2-039], NYCC and SDC raised concerns relating to impacts on European sites associated with SCR and the Applicant's LSE conclusions on LSE (in EIA terms) and transversely the conclusions in the HRA. Paragraph 6.9 of the LIR states that *"although the impact from this development may be described as 'imperceptible' the levels at many sites for nutrient nitrogen vastly exceed the critical load...[and there is]...a similar situation for acid deposition, ammonia, SCR impacts on nutrient nitrogen and SCR impacts on acid deposition. Concern is expressed at these levels and increases in levels"*. It is explained at paragraph 6.10 of the LIR that these concerns relate in particular to the following sites:

- Thorne Moor SAC; and
- Skipwith Common SAC.

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<sup>18</sup> At the time of publication of this RIES, [REP1-007] was the most recent version of the SoCG and remained unsigned on behalf of either party.

3.3.7 Addressing concerns raised in relation to critical levels for NO<sub>x</sub>, paragraph 5.1 of [REP2-017] states that:

*'the process contribution to NO<sub>x</sub> concentration at the designated sites has been determined to be insignificant or imperceptible according to the criteria outlined in the assessment...none of the designated sites has existing baseline NO<sub>x</sub> concentrations above or close to the Critical Levels [without SCR].'*

3.3.8 The response provided in [REP2-017] establishes the Applicants position that the process contributions of NO<sub>x</sub> with SCR would not result in LSE at any of the European sites concerned.

3.3.9 The maximum process contribution of nitrogen deposition at each of the sites identified (without SCR) is reported by the Applicant as being less than 1% of the critical load for relevant site features. However, the existing baseline levels are already in excess of critical load at the following European sites:

- Skipwith Common SAC
- Thorne Moor SAC
- Strensall Common SAC
- North York Moors SAC; and
- Hatfield Moor SAC

3.3.10 The Applicant's position is that the process contribution is insignificant and also does not result in any additional exceedance of critical load at any site that was not already occurring as a result of other sources.

3.3.11 With SCR in place, this gives rise to a slight worsening of effect, although all sites (with the exception of Thorne Moor SAC), remain below 1% process contribution and so the 'without SCR' conclusion applies.

3.3.12 The existing baseline acid deposition rates at the identified European sites already exceed the critical load. The same reasons and conclusions are reached as for nitrogen deposition (with and without SCR), ie all sites are below 1% process contribution and therefore not significant with the exception of Thorne Moor.

3.3.13 The existing baseline ammonia concentrations (only applicable to the SCR scenario) the same 5 European sites already exceed the critical load and the same reasons and conclusions are reached as for nitrogen and acid deposition (ie less than 1% increase process contribution at all sites except Thorne Moor at 1%).

3.3.14 Paragraphs 5.13 and 5.14 of [REP2-017] also explain the Applicant's position that the operation of the Proposed Development would represent a net reduction in nitrogen deposition loading levels if the soon to be



ceased operation of the Eggborough coal-fired power station is taken into account. Paragraph 8.4.19 of ES Chapter 8 [**APP-048**] states that, as part of the worst case approach to the assessment '*no improvement in air quality through cessation of the operation of the coal-fired power station is assumed in the assessment*'. This is considered further below.

3.3.15 In addition to their position that that the Proposed Development would not significantly impact the features of the European site even where there is an existing exceedance of critical loads / levels, the Applicant argues that the absence of a significant effect alone is sufficient justify no likely significant effect in-combination with other plans and project (paragraph 20.5.10 of ES Chapter 20 [**APP-058**]). This is discussed further below.

3.3.16 The ExA held issue specific hearings on environmental matters [**EV-007**] – [**EV-010**]. The hearings were in part informed by the submissions made in [**REP2-017**]. HRA matters were raised by the ExA in the context of the Applicant's conclusions of no LSE of the project alone and in-combination with other plans and projects, and whether there was sufficient information to inform an appropriate assessment if required for European sites. The concerns related to:

- The Applicant choosing to conclude no LSE where the proposed development would result in additional process contributions to critical loads / levels which although below 1% were still contributory to the existing exceedances of the critical loads / levels i.e. the 'baseline' conditions for the site; and
- The Applicants decision not to provide information necessary to undertake an assessment of in-combination effects on the basis of the project alone having 'imperceptible' increases on critical loads / levels and therefore no LSE<sup>19</sup>.

3.3.17 The ExA made reference at the hearing to the Thorne Moor SAC which, as presented in [**REP2-017**] would result in a 1% exceedance of the critical load for nitrogen deposition, acid deposition and ammonia with SCR from the project alone. The Applicant maintained that this impact would result in no LSE as, although it marginally exceeds the 'insignificance threshold' at Thorne Moor SAC, '*The predicted additional process contributions are not considered to be significant as they are proportionately very small relative to other sources, and do not result in an exceedance at a site that was not already occurring as a result of other sources*' Paragraph 5.12 of [**REP2-017**].

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<sup>19</sup> The ExA cited the judgement in the case of *Wealden District Council v. Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* [2017] EWHC 351 (Admin), which could cast some doubt on the Applicant's approach (as endorsed by Natural England).

3.3.18 One of the action points from the issue specific hearing [**EV-007**] was for the Applicant to clarify their position in respect of conclusions of no LSE alone or in combination with other plans and projects by either:

- Accepting the ExA's concerns expressed at the hearing and provide information, including integrity matrices, sufficient for the Secretary of State to undertake an Appropriate Assessment (if required); or
- Issue a position/rebuttal statement setting out why the signpost matrices submitted with the ES [APP-111] are sufficient to conclude no LSE for the project alone and in-combination, and that an Appropriate Assessment remains unnecessary.

3.3.19 At deadline 3, the Applicant submitted its written summary of the issue specific hearing [**REP3-010**], concluding that that, in its view, an Appropriate Assessment is not required for the Proposed Development, although the Applicant agreed to provide integrity matrices for Thorne Moor SAC to reflect potential for LSE with the use of SCR.

3.3.20 After receipt of [**REP3-010**], the ExA issued a request for further information under Rule 17<sup>20</sup> (as described at paragraph 1.2.6 of this RIES) [**PD-010**]. The rule 17 posed a total of 8 questions to the Applicant.

3.3.21 The Applicant, EA, and NE were given until deadline 5 to provide responses.

3.3.22 The Applicant responded at deadline 5 [**REP5-006**] by providing:

- A tabulated response to the ExA's rule 17 request [**PD-010**]
- A revised Habitats Regulations Assessment signposting report and Screening and integrity matrices (including Appendices A-H).

3.3.23 The EA and NE did not respond separately to [**PD-010**], despite specific questions being posed to them by the ExA. However, paragraph 2.1 of the Applicant's response [**REP5-006**] states that it is a "*joint response of the Applicant, the Environment Agency and Natural England*".

3.3.24 The following paragraphs summarise the key points against questions 1-8 posed by the ExA (full details can be found in table 2.1 of [**REP5-006**]):

1. The reliance placed on the EA's permitting guidance significance

3.3.25 Applicant reaffirms that the significance criteria of 1% is the screening threshold<sup>21</sup> accepted by the EA and NE, below which the magnitude of an effect is judged to be so low as to be inconsequential and can "*robustly and reasonably*" be taken to result in no LSE when applied to HRA

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20 The Infrastructure Planning (Examination Procedure) Rules 2010 (as amended)

21 Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats

screening. No further explanation is provided as to the applicability in the context of where baseline critical loads are already in excess of 100%.

- 3.3.26 The threshold's practical application is to inform the assessment of sensitive habitats required by the Habitats Regulations as part of the granting of permits under the Integrated Pollution Prevention Control Regulations. Reference is made to guidance published by the EA in 2007 *'and although since superseded by a revised guidance document in 2012, the principles remain the same'*<sup>22</sup>. The Applicant cites the sections of the EA guidance which supports their position that the *'1% process contribution insignificance threshold is based on the judgements that it is unlikely that an emission at this level will make a significant contribution to air quality and the threshold provides a substantial safety margin to protect health and the environment.'*
- 3.3.27 The Applicant cites further guidance from the EA<sup>23</sup> stating that *'The choice of the 1% assessment level as a standard approach is a matter of professional Judgement...It is extremely unlikely that an emission at this level will make a significant contribution to air quality or air pollution impacts, and is therefore considered to be inconsequential both alone and in combination... Experience of permitting allows us to be confident that it is unlikely that a substantial number of plans or projects will occur in the same area at the same time, such that their cumulative impact would give rise to concern at the appropriate assessment stage. If such a situation were to arise then the assessment could be determined on a case-specific basis'*.
- 3.3.28 Two pieces of IAQM guidance<sup>24,25</sup> on the application of the 1% criterion to in-combination effects are also cited, which state that: *"For installations other than intensive pig and poultry farms, AQTAG is confident that a process contribution <1% of the relevant critical level of load can be considered inconsequential and does not need to be included in an in-combination assessment"*. An IAQM consultation document on assessment of air quality effects on designated sites also states that a change of more than 1% does not necessarily indicate that a significant effect (or adverse effect on integrity) will occur.
- 3.3.29 The Applicant concludes that the 1% threshold is therefore a screening threshold for guidance only and is to determine insignificant effects, which

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22 Environment Agency (2012) Simple assessment of the impact of aerial emissions from new or expanding IPPC regulated industry for impacts on nature conservation. Operational Instruction 66\_12.

23 AQTAG21 Draft (2015) Likely Significant Effect – use of 1% and 4% long term thresholds and 10% short term thresholds.

24 Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

25 A Guide to navigating the assessment of air quality effects on designated sites (Consultation draft, IAQM, 2017).

does not in their view mean that contribution that is marginally above the 1% threshold is "significant".

2. Confirmation from NE that the EA's permitting guidance is a suitable criteria for the assessment of the effects on European sites in respect of HRA:

3.3.30 The Applicant's response cites NE's 'confirmation' that the EA's 1% permitting guidance criterion is an acceptable screening threshold for enabling a conclusion of no LSE on European sites for HRA. Reference is also made to IAQM guidance which states the position of the IAQM is that the use of a criterion of 1% of an assessment level in the context of habitats should be used only to screen out impacts that will have an insignificant effect. It should not be used as a threshold above which damage is implied and therefore should not be used to conclude that a significant effect is likely. NE is "*satisfied that process contributions of 1.5% or below can be robustly and reasonably assumed to be insignificant both alone and in-combination with other plans or projects*"<sup>26</sup>.

3. Why the thresholds applied are appropriate for the assessment particularly where there are already exceedances above the critical loads or levels for given pollutants:

3.3.31 Applicant states that where the baseline conditions are already exceedances of critical loads or levels for given pollutants, the screening threshold is still applicable. The 1% threshold is not a determinant for 'onset of damage' to a habitat; rather it is a screening threshold above which potential effects may need to be examined in more detail (alone and in-combination) and "*below which it is accepted by the regulators that effects alone or in-combination can be considered to be insignificant*". On this point, the ExA notes that no quantitative assessment of in-combination effects has been provided by the applicant to demonstrate this.

3.3.32 The Applicant acknowledges exceedances of 1% contributions to critical loads on the Thorne Moor SAC (with SCR), and more detail is provided in the HRA Report (and Appendix H) [REP5-006].

4. The adequacy of the 'qualitative' in-combination assessment, particularly in light of the judgment Wealden District Council v Secretary of State for Communities and Local Government [2017] EWHC 351

3.3.33 Applicant refers to the IAQM guidance<sup>24</sup> and they state that where process contributions are 1% (or even slightly above) then the magnitude of

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<sup>26</sup> The ExA is unclear as to the relevance or origin of the 1.5% figure in this context. It is noted that a 1.5% long-term process contribution is the highest reported within Tables 3-6 of the Technical Note on Air Quality Impacts [REP2-017]

change is so inconsequential ('de minimis') that it does not require an in-combination effects assessment, and therefore it would not be considered appropriate, in to undertake a quantitative in-combination effects assessment because there is no pathway for LSE.

3.3.34 Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the "*conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken*". For impacts that are marginally above the 1% insignificance threshold, the Applicant reaffirms that professional judgement must be applied to determine what is an appropriate level of assessment of potential in-combination effects.

3.3.35 Reference is also made to the cessation of operations of the existing coal-fired power station, which was not considered within the in-combination effects HRA screening appraisal for the Proposed Development because at the time of undertaking the assessment "*the CCGT was not seen as a direct replacement for the coal-fired power station*". The Applicant is now of the view that there would be a reduction in process contribution of nitrogen deposition to Thorne Moor SAC of around 3% associated with the cessation of operations for the existing coal-fired power station. This has been reflected section 6.1 and Table 7 of the HRA Report [REP5-006].

5. The need for an appropriate assessment for the Thorne Moor SAC (having regard to the Applicants own methodology and conclusions in [REP2-017])

3.3.36 The Applicant states that they have provided the information necessary for the competent authority to undertake and appropriate assessment on Thorne Moor SAC, and that it is provided in the HRA Report [REP5-006].

6. The extent to which with the "fully operational" existing Eggborough Power Station is taken into account in the assessment

3.3.37 Applicant explains that, following a 'further request for information' issued by the EA in respect of the permit variation application, the air quality modelling has been updated. The update takes into account less conservative modelling assumptions (Appendix H of the HRA Report [REP5-006]) and also the reduction in nitrogen deposition process contributions at the Thorne Moor SAC resulting from the cessation of operations at the coal-fired power station assessment.

3.3.38 Whilst the Applicant cites the purported agreement of NE with the comments above and that they understand NE does not have any further comments to make, the Applicant explains that the EA has yet to review the submitted fully operational existing coal-fired power station predictions / assumptions of the Applicant in Appendix H [REP5-006] as these were

not part of the original permit variation application (hence the further information request from the EA).

7. The purported agreement reached between the Applicant, the EA and NE regarding BAT and the potential use of SCR

3.3.39 Applicant reaffirms that the only exceedance of 1% screening threshold for no LSE on the Thorne Moor SAC results from the Proposed Development if operating with SCR, and that worst case predicted process contribution is due to ammonia deposition resulting from the operation of the SCR system, as reflected in the HRA Report [REP5-006]. Applicant also explains that the process contributions from the Proposed Development operating without SCR are below the 1% screening threshold at Thorne Moor (ExA notes baseline critical loads are already exceeded).

8. A request from the ExA for NE to confirm if they are still content with the Applicant's conclusions of no LSE (alone and in-combination with other plans and projects).

3.3.40 Applicant outlines the purported level of agreement with NE who:

- Confirms that it is content with the conclusions of no LSE on the Thorne Moor SAC alone and in-combination for the Proposed Development without SCR, (process contributions of N deposition is below the 1% screening threshold).
- Considers that a precautionary approach to the HRA has been taken (ie triggering the need to consider the potential effects in more detail) for the Proposed Development operating with SCR. There is a 'small' exceedance of the 1% screening threshold for N deposition and NH<sub>3</sub> at the SAC.
- Agree that the Applicant has prepared an appropriate assessment (in consultation with the EA and NE) that is proportionate to the likely impact on the SAC from the Proposed Development. Based on revised dispersion modelling (Appendix H [REP5-006]), the process contribution is only slightly above the 1% threshold and therefore it is not considered necessary to undertake a detailed in-combination assessment with all other plans and projects that may affect the SAC. The basis for this is that even a process contribution of 1.5%<sup>26</sup> is still negligible in the context of what level of N deposition could result in a measurable change (damage) to the SAC raised bog habitat.
- Agree that for the Proposed Development with SCR, there will be no adverse effects on the integrity of Thorne Moor SAC, and the HRA Report [REP5-006] (including Integrity Matrices) reflect the revised assessment.

3.3.41 The ExA notes question 8 of the Rule 17 request [**PD-010**] was intended to consider the entirety of sites identified as being relevant in the assessment, ie not just Thorne Moor SAC. The joint response of the Applicant, NE and EA to this question is limited to comments on the Thorne Moor SAC only.

3.3.42 The ExA also notes the key changes to the modelling assessment of the SCR scenario which update those assessments presented in [APP-100] and [**REP2-017**] (section 2, Appendix H, [**REP5-006**]). The ExA notes that this information does not update the 'without SCR' assessment information from [**REP2-017**]. The revised SCR assessment includes:

- ammonia slip has been reassessed at a concentration of 3mg/Nm<sup>3</sup> (reduced from 5mg/Nm<sup>3</sup>) to reflect the lowest (ie best performance) end of BAT scale;
- long-term process contributions had originally been based on assuming 100% load and operation (8,760 hours) of the Proposed Development, whereas these are now modelled at 8,000 hours/ year (91%), which the Applicant maintains is still a conservative approach;
- the emissions for the reciprocating engine component of the peaking plant have been modelled at a lower emission limit value in line with Large Combustion Plant BAT Conclusions.
- The long-term process contributions of the peaking plant had originally been based on assuming 100% load and operation (8,760 hours) and it is now assumed that actual operating hours will be less than 1,500 hours/year (17%).

3.3.43 The ExA therefore notes that the parameters and assessments in the ES defining a "worst case" are no longer applicable [**REP2-017**] and [**REP5-006**].

**Table 3.2 Summary of Applicant's conclusion of NO LSE (project alone)**

| European Site                        | NOx (daily / annual |          | Nutrient N |          | Acid Deposition |                 | Ammonia  |
|--------------------------------------|---------------------|----------|------------|----------|-----------------|-----------------|----------|
|                                      | No SCR              | With SCR | No SCR     | With SCR | No SCR          | With SCR        | With SCR |
| Humber Estuary SAC (E6) <sup>1</sup> | ✓                   | ✓        | ✓          | ✓        | N/a             | N/a             | ✓        |
| Humber Estuary SAC (E6) <sup>2</sup> |                     |          | x          | xx       | x               | xx <sup>3</sup> |          |
| Skipwith Common SAC (E7)             | ✓                   | ✓        | x          | x        | x               | x               | x        |
| Thorne Moor SAC (E8)                 | ✓                   | ✓        | x          | xx       | x               | x               | xx       |
| River Derwent SAC (E12)              | ✓                   | ✓        | N/a        | N/a      | N/a             | N/a             | ✓        |
| Strensall Common (E13)               | ✓                   | ✓        | x          | x        | x               | x               | x        |
| North York Moors (E14)               | ✓                   | ✓        | x          | x        | x               | x               | x        |
| Hatfield Moor (E15)                  | ✓                   | ✓        | x          | x        | x               | x               | x        |

Key

- ✓ Indicates increase in process contribution of less than 1% of the critical load / level and where baseline conditions are below 100% of critical load / level
- x Indicates increase in process contribution of less than 1% of the critical level / load and where baseline conditions are above 100% of critical load / level
- xx Indicates increase in process contribution of more than 1% of the critical level / load and where baseline conditions are above 100% of critical load / level Shaded Cells indicate baseline in exceedance of critical load
- N/a The Applicant states that there is no published data in terms of critical loads and / or there is no sensitive habitat within the impact area (see Tables 2-7 of [REP2-017] and Tables 2-6 of Appendix H to the HRA Report [REP5-006]. of this RIES)



- 1 Estuaries; Atlantic salt meadows; and Mudflats and sandflats not covered by seawater at low tide<sup>27</sup>
- 2 Fixed coastal dunes habitat<sup>27</sup>
- 3 Based on the figures as presented in the ES [APP-100]. Revised figures in [REP2-017] and [REP5-006] do not consider this habitat.

#### Notes

For daily mean NOx, the 1% threshold is adjusted to 10%

Humber Estuary SPA and Ramsar sites not listed here (see paragraph 3.2.18 of this RIES)

Table 3.3 takes into account [APP-100] as supplemented by [REP2-017] and Appendix H of [REP5-006] to reflect the Applicant's revisions to the assessment during examination

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27 The Applicant states at paragraph 1.2 of their technical note on air quality impacts [REP2-017] that "Fixed coastal dunes habitat is not present within the likely impact area of the proposed development, alternative habitat types within the area have therefore been assessed (Estuaries; Atlantic salt meadows; and Mudflats and sandflats not covered by seawater at low tide)". The information presented in Tables 8A.12, 8A.13, 8A.16 and 8A.17 [APP-100] (which pre-dates [REP2-017]) presents further evidence against "Fixed coastal dunes with herbaceous vegetation" as the most sensitive receptor. The ExA notes that the North York Moors SAC that the Applicant has considered in the assessment (and identified potential impacts in terms of critical loads and levels) would appear to be further geographically separated. It is therefore unclear as to the justification for [REP2-017] and Appendix H of [REP5-006] making no further consideration of fixed coastal dunes as a sensitive habitat.

NO<sub>x</sub>

- 3.3.44 Mean annual and daily mean NO<sub>x</sub> process contributions at all identified receptors is below the 1% / 10% 'insignificance' threshold and the baseline conditions for all of the most sensitive habitat types are below 100% of the critical level. This is the case with and without SCR.
- 3.3.45 No quantitative assessment is made in terms of the potential for air quality impacts in-combination with the identified projects<sup>28</sup>.
- 3.3.46 The ExA remains unclear in the context of the Humber Estuary SPA and Ramsar sites.

Nutrient Nitrogen

- 3.3.47 For nutrient nitrogen deposition at the Humber Estuary SAC (for Atlantic salt meadows; and Mudflats and sandflats habitat) the process contribution to the critical load is below the 1% threshold of 'insignificance' and the baseline critical loads are below 100%. This is the case with and without SCR.
- 3.3.48 For all other sites (with the exception of Thorne Moor SAC and Humber Estuary SAC (fixed coastal dunes habitat type only) with SCR option), process contributions are less than 1% threshold of 'insignificance' but the baseline critical loads are already in exceedance of 100% of the critical load.
- 3.3.49 For clarity, these sites are:
- Skipwith Common SAC
  - Thorne Moor SAC
  - Strensall Common SAC
  - North York Moors SAC
  - Hatfield Moor SAC
- 3.3.50 For the Thorne Moor SAC and Humber Estuary SAC (fixed coastal dunes habitat type only) with SCR option, the 1% process contribution 'insignificance' threshold is also exceeded.
- 3.3.51 No quantitative assessment is made in terms of the potential for air quality impacts in-combination with the identified projects<sup>28</sup> (although section 4.6 of the HRA Report [REP5-006] presents further information on in-combination respects in relation to Thorne Moor SAC, discussed in section 4 of this RIES).

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<sup>28</sup> Section 3.3 and Table 10H.4 of the HRA Report [REP5-006] and the Applicant's response to items 1 and 3 of the Rule 1 request in Table 2.1 of [REP5-006]

3.3.52 The ExA remains unclear in the context of the Humber Estuary SPA and Ramsar sites.

Acid Deposition

3.3.53 For all of the identified receptors with and without SCR (with the exception of fixed coastal dunes habitat at the Humber Estuary SAC with SCR), process contributions are less than 1% threshold of 'insignificance' but the baseline critical loads are already in exceedance of 100% of the critical load.

3.3.54 For clarity, these sites are:

- Humber Estuary SAC (fixed coastal dunes habitat type, only without SCR)
- Skipwith Common SAC
- Thorne Moor SAC
- Strensall Common SAC
- North York Moors SAC
- Hatfield Moor SAC

3.3.55 In addition, the coastal dunes habitat at the Humber Estuary SAC is in exceedance of the 1% 'insignificance' threshold for process contribution (with SCR) (as well as the existing baseline exceeding the critical load).

3.3.56 No quantitative assessment is made in terms of the potential for air quality impacts in-combination with the identified projects<sup>28</sup>.

3.3.57 The ExA remains unclear in the context of the Humber Estuary SPA and Ramsar sites.

Ammonia

3.3.58 Ammonia slip is only an issue where SCR is to be implemented. Process contributions at the sensitive receptors of the following sites are below the 1% threshold of 'insignificance' and baseline concentrations are below 100% of the critical level:

- Humber Estuary SAC
- River Derwent SAC

3.3.59 Process contributions at the sensitive receptors of the following sites are below the 1% threshold of 'insignificance' but baseline concentrations are in exceedance of 100% of the critical level:

- Skipwith Common SAC
- Thorne Moor SAC
- Strensall Common SAC

- North York Moors SAC
- Hatfield Moor SAC

3.3.60 Process contributions at the Thorne Moor SAC sensitive receptors are in exceedance of the 1% threshold of 'insignificance' and baseline concentrations are in exceedance of 100% of the critical level.

3.3.61 No quantitative assessment is made in terms of the potential for air quality impacts in-combination with the identified projects<sup>28</sup>.

3.3.62 The ExA remains unclear in the context of the Humber Estuary SPA and Ramsar sites.

*In-combination effects*

3.3.63 Further to item 4 of the ExA's Rule 17 request, the Applicant maintains its position that a quantitative assessment of in-combination effects is not required in accordance with IAQM guidance "*...where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential ('de minimis') that it does not require an in-combination effects assessment. It would not be considered appropriate, in such a case, therefore, to undertake a quantitative in-combination effects assessment because there is no pathway for LSE. Both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken*".

3.3.64 As such, the only consideration of in-combination effects (qualitative) is given in paragraph 20.5.10 of ES Chapter 20 [APP-058] and section 3.4 and table 10H.4 of the HRA Report [REP5-006]. These conclude that, with the exception of Thorne Moor SAC, there are no LSE in-combination with other plans and projects taking into account likely zones of influence of potential changes in air quality associated with the schemes considered.

3.3.65 As described in previous sections of this RIES, the Applicant does not present conclusions of LSE from air quality impacts in-combination in the context of the Humber Estuary SPA and Ramsar sites or the River Derwent SAC.

3.3.66 The ExA notes that, Table 10H.4 of [REP5-006] provides specific information in the context of the Drax Re-power Project, which states that "*ES and Habitats Regulations information (as required) for the Drax project will have a duty to consider the effects of its project alone and in-combination with other committed schemes and therefore will need to consider the cumulative effects of its emissions with those from the Eggborough CCGT (and other schemes) based on the data available in the public domain*".

- 3.3.67 The Applicant acknowledges LSE in-combination with other plans and projects, but only in relation to the Thorne Moor SAC and only in relation to the Eggborough Coal-Fired Power Station decommissioning and demolition (ie which will result in a reduction in NOx emissions (and process contribution of nitrogen deposition) of c. 3% of the critical load). This is factored in to the revised modelling in Appendix H of [**REP5-006**].
- 3.3.68 The Applicant has therefore subsequently presented information on the assessment of effects on the integrity of the Thorne Moor SAC in section 4 of the HRA Report [**REP5-006**].

## 4. ADVERSE EFFECTS ON INTEGRITY

### 4.1 Conservation Objectives

4.1.1 The conservation objectives for all of the European sites considered in the assessment are presented in Table 10H.2 of the HRA Report [REP5-006], although none are presented in respect of the River Derwent SAC.

4.1.2 The consideration of adverse effects on integrity by the Applicant are limited to the Thorne Moor SAC and are made in respect of:

- the operation of the Proposed Development with SCR only; and
- increased nutrient nitrogen deposition as a result of the increase in NH<sub>3</sub> emissions (not ammonia concentrations)<sup>29</sup>.

### 4.2 Adverse effects on Integrity

4.2.1 The Applicant concluded that the project will not adversely affect the integrity of the Thorne Moor SAC (sections 4.5 (project alone) and 4.6 (in combination with other plans and projects) of the HRA Report [REP5-006]). Integrity matrices are produced for the Thorne Moor SAC in Appendix G of the HRA Report [REP5-006].

4.2.2 In reaching these conclusions, the Applicant notes the following:

- Nutrient nitrogen is "*very slightly in excess of the 1% screening insignificance threshold*" and only relates to "*a small part of the Thorne Moor*" (Figure 1, Appendix H, [REP5-006]).
- NE has been consulted, and it is purported that they are satisfied that with the very small exceedance of the 1% screening threshold for N deposition on the Thorne Moor SAC for the Proposed Development with SCR, there will be no adverse effects on the integrity of the European Site.
- A Site Improvement Plan (SIP) exists for the Thorne Moor SAC has been prepared by NE, which states that: "As with most lowland raised bogs in England, the aerial deposits of nitrogen exceed the threshold limits above which the quality and character of bog vegetation begin to be altered and adversely impacted". The APIS database states a critical load range of 5 – 10 kg N/ha/yr for the 'degraded raised bogs' habitat feature, with the current deposition range at Thorne Moor SAC stated at 14.6 – 18.8 kg N/ha/yr (average or 15.2 kg N/ha/yr).
- Common Standards Monitoring (CSM) does not appear to identify nutrient nitrogen deposition as a potential cause of 'unfavourable

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<sup>29</sup> In Stage 2 Matrix A (Appendix G of the HRA Report [REP5-006]), the Applicant also considers NO<sub>x</sub> deposition.

condition' at many designated sites<sup>30</sup>, and there is uncertainty around whether the unfavourable condition of the lowland raised bog feature within the northern part of the Thorne Moor SAC is influenced by high nutrient nitrogen deposition rates. The Applicant maintains that *'the degree to which N deposition is influencing any adverse change in the vegetation of the bog habitat cannot be reasonably quantified'*.

- The Applicant cites that *'Published dose-response relationships<sup>[31]</sup> for bog habitats are limited but have shown that the effects of additional nitrogen at existing high background nitrogen rates may be modest compared to those at low background rates, because nitrogen is already in excess and the ability of plants to respond to additional nitrogen is finite...The process contribution from the proposed development with SCR...is well below the process contribution that would be reasonably expected to result in a measurable change to the vegetation composition of the SAC, even when the high background N deposition rates are considered'*.
- Reference is again made to research published by NE for 'bogs' with high background deposition rates<sup>30</sup>, which the Applicant interprets as defining a value of 3.3 kg N/ha/yr that the Proposed Development (alone and in-combination) would need to contribute in order to adversely affect the bog habitat (ie a 'measureable change'). No other large scale power generation, agricultural projects or road schemes have been identified by the Applicant that could potentially result in increased nitrogen or acid deposition to the Thorne Moor SAC to that level of effect.
- The closure of the existing Eggborough coal-fired power station will result in a decrease in the overall process contribution from N deposition to Thorne Moor SAC (existing process contribution from the operation of Eggborough coal-fired power station has been modelled at up to 3% of the critical load). This net reduction will contribute towards SIP action 3A for Thorne Moor SAC to *'control, reduce and ameliorate atmospheric nitrogen impacts'*. The SIP aims to *'address priority issues that are currently impacting or threatening the condition of the designated features'*.

4.2.3 In the joint response to the ExA's rule 17 request (item 8), NE stated agreement that for the Proposed Development with SCR, there will be no adverse effects on the integrity of Thorne Moor SAC based on the revised modelling assessment in Appendix H of the HRA Report [**REP5-006**]).

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30 Caporn, S., Field, C., Payne, R., Dise, N., Britton, A., Emmett, B., Jones, L., Phoenix, G., S Power, S., Sheppard, L. & Stevens, C. (2016). Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210

31 The only reference given to dose response relationships is that cited in footnote 30 above.

## 5. SUMMARY

5.0.1 The ExA has produced this RIES to outline the latest position in respect of HRA matters during the examination.

5.0.2 A number of matters for clarification have been raised, including:

- The River Derwent SAC is not specifically addressed in the HRA Report [REP5-006] and no conclusions as to LSE are made. No matrices for the site have been provided at Annex G of the HRA Report (although the SAC does appear as receptor E12 in the Applicant's air quality modelling [APP-100], [REP2-017] and [REP5-006]);
- The Humber Estuary SPA and Ramsar site have not been specifically addressed in terms of LSE from air quality impacts. In the case of the latter, the some of the qualifying features appear to be similar to those that were considered in terms of air quality impacts on the Humber Estuary SAC.

5.0.3 The ExA considers the main matters arising, and where a degree of uncertainty still remains (despite the position of the Applicant and agreement with the SNCBs) to be:

- The conclusions of no LSE where process contributions are below the 1% 'insignificance' threshold but where baseline critical loads and levels already exceed 100% of these critical loads / levels (and in some cases are more than double the load / level). The Applicant argues in the response to the ExA's Rule 17 request [PD-010] that the *'1% threshold is not a threshold for determining the onset of damage to a habitat; rather it is a screening threshold above which potential effects may need to be examined in more detail (alone and in-combination) and below which it is accepted by the regulators that effects alone or in combination can be considered to be insignificant'* (table 2.1, [REP5-006]). The ExA remains unclear how no LSE can be determined where a site is subject to an existing exceedance and impacts from the Proposed Development alone or in-combination will only serve to exacerbate that situation. The ExA is also unclear how the determination of *'the onset of damage'* can be made without engagement with the conservation objectives of the qualifying features.
- The conclusions (stated to be in accordance with the IAQM guidance) that *'where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential ('de minimis') that it does not require an in-combination effects assessment'*. The ExA's Rule 17 request [PD-010], asked for this approach to be explained in the context of the Habitats Regulations and the judgement reach in the *Wealden District Council v Secretary of State for Communities and Local*



*Government case*<sup>19</sup> (ie it is not sufficient to rule out in-combination effects on the basis of negligible effects of the project alone).

- 5.0.4 The ExA notes the key changes that have been applied to the air quality modelling assessment which thereby change the assumptions and conclusions presented in ES Chapter 8 (as described at paragraph 3.3.42 – 3.3.43 of this RIES).
- 5.0.5 The ExA has, with the support of the Inspectorate's Environmental Services Team, produced summary matrices to set out the current position in relation to the conclusions of LSE and no adverse effect on the relevant European sites. These are provided at Annex 1 of this RIES.

# **ANNEX 1: STAGE 1 MATRICES: SCREENING FOR LIKELY SIGNIFICANT EFFECTS**

## Stage 1 Matrices: Screening for Likely Significant Effect

This annex of the RIES identifies the European sites and features for which the Applicant's conclusions were considered during the examination. These screening matrices have been produced by the Inspectorate based on the submissions of the applicant and interested parties during the examination

### Key to Matrices:

- ✓ Likely significant effect cannot be excluded
  - × Likely significant effect can be excluded
  - ? Unclear whether likely significant effect can be excluded
- 
- C construction
  - O operation
  - D decommissioning

Information supporting the conclusions is detailed in footnotes for each table with reference to relevant supporting documentation.

Where an impact is not considered relevant for a feature of a European Site the cell in the matrix is formatted as follows:

|     |
|-----|
| n/a |
|-----|

**Stage 1 Matrix 1: Humber Estuary SAC (E6)**

Site Code: UK0030170

Distance to project: c. 15 km

| European site feature(s)  | Likely Effects of NSIP                   |     |     |  |     |     |                                     |     |     |                              |     |     |
|---|--|-----|-----|--|-----|-----|-------------------------------------|-----|-----|------------------------------|-----|-----|
|   | Water Quality (including in-combination) |     |     | Air Quality (without SCR) <sup>1</sup> |     |     | Air Quality (with SCR) <sup>1</sup> |     |     | Air Quality (in-combination) |     |     |
|   | C  | O   | D   | C                                      | O   | D   | C                                   | O   | D   | C                            | O   | D   |
| Estuaries   | x a                                      | x b | x c | x d                                    | ? e | x d | x d                                 | ? e | x d | n/a                          | ? h | n/a |
| Mudflats and sandflats not covered by seawater at low tide      | x a                                      | x b | x c | x d                                    | ? e | x d | x d                                 | ? e | x d | n/a                          | ? h | n/a |
| Sandbanks which are slightly covered by seawater all the time   | x a                                      | x b | x c | x d                                    | ? f | x d | x d                                 | ? f | x d | n/a                          | ? h | n/a |
| Coastal lagoons   | x a                                      | x b | x c | x d                                    | ? f | x d | x d                                 | ? f | x d | n/a                          | ? h | n/a |
| Salicornia and other annuals colonising mud and sand (maritima) | x a                                      | x b | x c | x d                                    | ? f | x d | x d                                 | ? f | x d | n/a                          | ? h | n/a |
| Atlantic salt meadows (Glauco-Puccinellietalia)                 | x a                                      | x b | x c | x d                                    | ? e | x d | x d                                 | ? e | x d | n/a                          | ? h | n/a |
| Embryonic shifting dunes <sup>1</sup>                           | x a                                      | x b | x c | x d                                    | ? f | x d | x d                                 | ? f | x d | n/a                          | ? h | n/a |

<sup>1</sup> The Applicant's matrices presented at Appendix G of [REP5-006] do not present / consider these

| European site feature(s)  | Likely Effects of NSIP                   |     |     |  |     |     |                                     |     |     |                              |     |     |
|---|--|-----|-----|--|-----|-----|-------------------------------------|-----|-----|------------------------------|-----|-----|
|   | Water Quality (including in-combination) |     |     | Air Quality (without SCR) <sup>1</sup> |     |     | Air Quality (with SCR) <sup>1</sup> |     |     | Air Quality (in-combination) |     |     |
|   | C  | O   | D   | C                                      | O   | D   | C                                   | O   | D   | C                            | O   | D   |
| Dunes with Hippophae rhamnoides <sup>1</sup>  | x a                                      | x b | x c | x d                                    | ? f | x d | x d                                 | ? f | x d | n/a                          | ? h | n/a |
| Fixed dunes with herbaceous vegetation ('grey dunes') <sup>1</sup>                      | x a                                      | x b | x c | x d                                    | x g | x d | x d                                 | x g | x d | n/a                          | ? h | n/a |
| Shifting dunes along the shoreline with Ammophila arenaria ('white dunes') <sup>1</sup> | x a                                      | x b | x c | x d                                    | ? f | x d | x d                                 | ? f | x d | n/a                          | ? h | n/a |
| Grey seal Halichoerus grypus <sup>1</sup>   | x a                                      | x b | x c | n/a                                    | n/a | n/a | n/a                                 | n/a | n/a | n/a                          | n/a | n/a |
| Sea lamprey Petromyzon marinus <sup>1</sup>   | x a                                      | x b | x c | n/a                                    | n/a | n/a | n/a                                 | n/a | n/a | n/a                          | n/a | n/a |
| River lamprey Lampetra fluviatilis <sup>1</sup>   | x a                                      | x b | x c | n/a                                    | n/a | n/a | n/a                                 | n/a | n/a | n/a                          | n/a | n/a |

### Notes / evidence

- a. Mitigation measures will be put in place during construction (both best practice measures and those necessary to meet the requirements of environmental legislation for construction. These will be delivered through the CEMP [REP2-020] and secured through draft DCO (dDCO) requirement 18 [REP5-002]. On this basis LSE to European sites from surface water quality impacts are ruled out. These mitigation considerations in terms of LSE are summarised in section 3.3 of the HRA Report [REP5-006].

Table 10H.4 of the HRA Report [**REP5-006**] identifies Humber Estuary SAC as having potential impact pathways in the context of the Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SPA, SAC and Ramsar sites from the Proposed Development alone or in-combination with other projects. Section 3.4 of the HRA Report focuses largely on in-combination effects arising from air quality matters and little or no further explanation of in-combination effects in terms of surface water quality.

- b. Section 3.1.1 of the HRA Report [**REP5-006**] states that *'cooling towers will be used to control thermal discharges to the river and any pollutant discharges will be monitored, treated and controlled through an Environmental Permit required for the operation of the plant.'*

Potential for surface water quality impacts to European sites during operation at in table 10.6 of ES Chapter 10 [**APP-048**], and paragraphs 11.6.32 – 11.6.47 of ES Chapter 11 [**APP-049**]. Volumes of the proposed cooling water abstraction and discharge will be lower than the existing Eggborough coal-fired power station. Cooling water discharge temperature will be similar to existing coal fired power station (i.e. the current baseline).

The Applicant also proposes to adopt measures set out in the Outline Drainage Strategy which has been developed *'with regards to the effective and safe drainage of surface water from the Proposed Development Site'* (Annex 5 of [**APP-112**]).

LSE from surface water quality impacts in-combination with other plans and projects is addressed at Table 10H.4 of the HRA Report [**REP5-006**]. It identifies potential impact pathways only in the context of the Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SAC in-combination with the Proposed Development.

- c. Gas connection pipeline, cooling water abstraction pipeline and the intake and outfall structures on the River Aire (associated with the construction of the Proposed Development) will remain in-situ (Appendix G [**REP5-006**]). References to decommissioning in terms of water resources are made at paragraphs 11.5.43 and 11.6.58 of [**APP-049**], which liken potential impacts to those identified during construction and refer to a *"detailed Decommissioning Environmental Management Plan [which] will be prepared to identify required measures to prevent pollution during this phase of the development"*.
- d. Paragraph 8.6.3 of ES Chapter 8 [**APP-046**] and Table 10.6 of ES Chapter 10 [APP-048] concludes that air quality impacts to ecological receptors during construction (ie inclusive of European sites) are screened out based on separation distances.

The ExA also notes the framework CEMP [**REP2-020**] includes specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [**REP5-002**].

Paragraph 8.6.44 of ES Chapter 8 [**APP-046**] likens decommissioning effects to those assessed for construction activities.

- e. For NO<sub>x</sub> concentrations, (without SCR) mean annual and daily mean NO<sub>x</sub> process contributions at the European site (0.7% and 2.4% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>2</sup>) and the baseline conditions are below 100% of the critical level (63% annual mean, 50% daily mean). With SCR, the process contributions are 0.4% and 1.5% respectively. This is presented in Tables 2 and 3 of [**REP2-017**] (without SCR) and Tables 2 and 3 of Appendix H [**REP5-006**] (with SCR).

For nutrient nitrogen deposition, process contributions without SCR at the European site (0.1%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>2</sup>) and the baseline conditions (93%) are below 100% of the critical load. With SCR the process contribution is 0.3%. This is presented in table 4 of [**REP2-017**] (without SCR) and tables 5 of Appendix H [**REP5-006**] (with SCR).

For acid deposition, Table 5 of [**REP2-017**] and Table 6, Appendix H, [**REP5-006**] states that there are no sensitive habitats in study area in respect of Estuaries-Pioneer low-mid, mid-upper salt marshes.

For ammonia concentrations, process contributions at the European site (0.4%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>2</sup>) (presented in table 5 of Appendix H [**REP5-006**] and the baseline conditions (77%) are below 100% of the critical load (Table 6 [**REP2-017**]).

- f. The Applicant's air quality modelling does not consider this feature specifically and separately in the modelling of operational impacts. Instead the Applicant has assessed the potential impacts from process contributions against the most sensitive habitat for which the statutory designation applies (within the 15km study area) and uses that information to influence the outcome of assessment for other qualifying features. This approach is reflected in Table 1 of Appendix H to the HRA Report Appendix H [**REP5-006**] and Table 1 of the technical note on air quality impacts [**REP2-017**]. The approach has not been questioned or disputed by any parties during the examination.

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2 <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>

- g.** Paragraph 1.2 of [REP2-017] states that 'Fixed coastal dunes habitat is not present within the likely impact area of the proposed development, alternative habitat types within the area have therefore been assessed (*Estuaries; Atlantic salt meadows; and Mudflats and sandflats not covered by seawater at low tide*).'

The information presented in Tables 8A.12, 8A.13, 8A.16 and 8A.17 [APP-100] (pre-dating [REP2-017]) presents further evidence against using "*Fixed coastal dunes with herbaceous vegetation*" as the most sensitive receptor. The ExA notes that the North York Moors SAC which has been considered in the assessment (and identified potential impacts in terms of critical loads and levels) appears to be further geographically separated. It is therefore unclear as to the justification provided in [REP2-017] and Appendix H of [REP5-006] that there is no need to further consider fixed coastal dunes as a sensitive habitat. The information from Tables 8A.12, 8A.13, 8A.16 and 8A.17 of [APP-100] is therefore summarised here (although it is noted that these results have not been established using the revised modelling methodology [REP2-017] and Appendix H of the HRA Report [REP5-006]):

For NO<sub>x</sub> concentrations, mean annual and daily mean NO<sub>x</sub> process contributions are as per footnote **e**.

Nutrient nitrogen deposition without SCR, process contributions (0.4%) at the European site are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>2</sup>) (without SCR, Table 8A.12 [APP-100]) but the baseline conditions (237%) already exceed 100% of the critical load. With SCR, Table 8A.16 of [APP-100] presents a process contribution (2.2%) above the 1% insignificance threshold.

For acid deposition without SCR, process contributions (0.4%) at the European site are below the 1% 'insignificance' threshold without SCR (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>2</sup>) but the baseline conditions (271%) already exceed 100% of the critical load (Table 8A.17 [APP-100]). With SCR, Table 8A.16 of [APP-100] presents a process contribution (1.9%) above the 1% insignificance threshold.

For ammonia concentrations, process contributions are as per footnote **e** except the evidence of this is presented at Table 8A.15 [APP-100].

This is the case with and without SCR as presented in table 4 of [REP2-017] (without SCR) and tables 5 of Appendix H [REP5-006] (with SCR) the case with and without SCR.



- h.** In Table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>3</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential ('de minimis') that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken because there is no pathway for LSE.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the 'conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken.'

The Applicant also cites paragraph 8.4.20 and 20.5.10 of ES Chapters 8 and 20 [APP-046],[APP-058] in supporting their reasoning that there will be no LSE in-combination.

Table 10H.4 of the HRA Report [REP5-006] does not consider any LSE in combination for the Humber Estuary SAC.

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<sup>3</sup> Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

**Stage 1 Matrix 2: Humber Estuary SPA**

Site Code: UK9006111

Distance to project: c. 15 km

| European site feature(s)  | Likely Effects of NSIP                   |     |     |  |     |     |                                     |     |     |   |     |     |
|---|--|-----|-----|--|-----|-----|-------------------------------------|-----|-----|---|-----|-----|
|   | Water Quality (including in-combination) |     |     | Air Quality (without SCR) <sup>4</sup> |     |     | Air Quality (with SCR) <sup>4</sup> |     |     | Air Quality (in-combination) <sup>4</sup> |     |     |
|   | C  | O   | D   | C                                      | O   | D   | C                                   | O   | D   | C   | O   | D   |
| Populations of European importance of Annex I and Annex II overwintering wildfowl and wading birds. | x a                                      | x b | x c | x d                                    | ? d | x d | x d                                 | ? d | x d | x d                                       | ? d | x d |
| Internationally important assemblage of migratory and wintering birds.                              |  |     |     |  |     |     |                                     |     |     |   |     |     |

**Notes / evidence**

- a. Mitigation measures will be put in place during construction (both best practice measures and those necessary to meet the requirements of environmental legislation for construction). These will be delivered through the CEMP [REP2-020] and secured through draft DCO (dDCO) requirement 18 [REP5-002]. On this basis LSE to European sites from surface water quality impacts are ruled out. These mitigation considerations in terms of LSE are summarised in section 3.3 of the HRA Report [REP5-006].

<sup>4</sup> The Applicant's matrices presented at Appendix G of [REP5-006] do not present / consider these

Table 10H.4 of the HRA Report [**REP5-006**] identifies Humber Estuary SPA as having potential impact pathways in the context of the Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SPA, SAC and Ramsar sites from the Proposed Development alone or in-combination with other projects. Section 3.4 of the HRA Report focuses largely on in-combination effects arising from air quality matters and little or no further explanation of in-combination effects in terms of surface water quality.

- b. Section 3.1.1 of the HRA Report [**REP5-006**] states that *'cooling towers will be used to control thermal discharges to the river and any pollutant discharges will be monitored, treated and controlled through an Environmental Permit required for the operation of the plant'*.

Potential for surface water quality impacts to European sites during operation at in table 10.6 of ES Chapter 10 [**APP-048**], and paragraphs 11.6.32 – 11.6.47 of ES Chapter 11 [**APP-049**]. Volumes of the proposed cooling water abstraction and discharge will be lower than the existing Eggborough coal-fired power station. Cooling water discharge temperature will be similar to existing coal fired power station (i.e. the current baseline).

The Applicant also proposes to adopt measures set out in the Outline Drainage Strategy which has been developed "*with regards to the effective and safe drainage of surface water from the Proposed Development Site*" (Annex 5 of [**APP-112**]).

LSE from surface water quality impacts in-combination with other plans and projects is addressed at Table 10H.4 of the HRA Report [**REP5-006**]. It identifies potential pathways for impacts only in the context of the Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SPA in-combination with the Proposed Development.

- c. Gas connection pipeline, cooling water abstraction pipeline and the intake and outfall structures on the River Aire (associated with the construction of the Proposed Development) will remain in-situ (Appendix G [**REP5-006**]). References to decommissioning in terms of water resources are made at paragraphs 11.5.43 and 11.6.58 of [**APP-049**], which liken potential impacts to those identified during construction and refer to a "*detailed Decommissioning Environmental Management Plan [which] will be prepared to identify required measures to prevent pollution during this phase of the development*".
- d. The ExA notes that there is no reference to air quality impacts during construction, operation or decommissioning (for the project alone and in-combination) to the qualifying features of the Humber Estuary SPA. The ExA understands that, based on the evidence presented in respect of the Humber Estuary SAC, and the qualifying features of the SPA that there are no pathways for LSE to these features.

**Stage 1 Matrix 3: Humber Estuary Ramsar**

Distance to project: c. 15 km

| European site feature(s)  | Likely Effects of NSIP                   |     |     |  |     |     |                                     |     |     |   |     |     |
|---|--|-----|-----|--|-----|-----|-------------------------------------|-----|-----|---|-----|-----|
|   | Water Quality (including in-combination) |     |     | Air Quality (without SCR) <sup>5</sup> |     |     | Air Quality (with SCR) <sup>5</sup> |     |     | Air Quality (in-combination) <sup>5</sup> |     |     |
|   | C  | O   | D   | C                                      | O   | D   | C                                   | O   | D   | C   | O   | D   |
| Estuarine habitats including dune systems, intertidal mud and sand flats, saltmarshes and brackish lagoons. | x a                                      | x b | x c | x d                                    | ? d | x d | x d                                 | ? d | x d | x d                                       | ? d | x d |
| Grey seal   | x a                                      | x b | x c | x e                                    | x e | x e | x e                                 | x e | x e | x e                                       | x e | x e |
| Internationally important populations of passage wildfowl and waders.                                       | x a                                      | x b | x c | x e                                    | x e | x e | x e                                 | x e | x e | x e                                       | x e | x e |

**Notes / evidence**

- a. Mitigation measures will be put in place during construction (both best practice measures and those necessary to meet the requirements of environmental legislation for construction). These will be delivered through the CEMP [REP2-020] and secured through draft DCO (dDCO) requirement 18 [REP5-002]. On this basis LSE to European sites from surface water quality impacts are ruled out. These mitigation considerations in terms of LSE are summarised in section 3.3 of the HRA Report [REP5-006].

<sup>5</sup> The Applicant's matrices presented at Appendix G of [REP5-006] do not present / consider these

Table 10H.4 of the HRA Report [**REP5-006**] identifies Humber Estuary Ramsar as having potential impact pathways in the context of the Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SPA, SAC and Ramsar sites from the Proposed Development alone or in-combination with other projects. Section 3.4 of the HRA Report focuses largely on in-combination effects arising from air quality matters and little or no further explanation of in-combination effects in terms of surface water quality.

- b. Section 3.1.1 of the HRA Report [**REP5-006**] states that *'cooling towers will be used to control thermal discharges to the river and any pollutant discharges will be monitored, treated and controlled through an Environmental Permit required for the operation of the plant'*.

Potential for surface water quality impacts to European sites during operation at in table 10.6 of ES Chapter 10 [**APP-048**], and paragraphs 11.6.32 – 11.6.47 of ES Chapter 11 [**APP-049**]. Volumes of the proposed cooling water abstraction and discharge will be lower than the existing Eggborough coal-fired power station. Cooling water discharge temperature will be similar to existing coal fired power station (i.e. the current baseline).

The Applicant also proposes to adopt measures set out in the Outline Drainage Strategy which has been developed *'with regards to the effective and safe drainage of surface water from the Proposed Development Site'* (Annex 5 of [**APP-112**]).

LSE from surface water quality impacts in-combination with other plans and projects is addressed at Table 10H.4 of the HRA Report [**REP5-006**]. It identifies potential impact pathways only in the context of the Eggborough Power Station Decommissioning and Demolition and Chapel Haddlesey Hydroelectric schemes. In both instances, the Applicant considers there is no potential for LSE on the Humber Estuary SPA in-combination with the Proposed Development.

- c. Gas connection pipeline, cooling water abstraction pipeline and the intake and outfall structures on the River Aire (associated with the construction of the Proposed Development) will remain in-situ (Appendix G [**REP5-006**]). References to decommissioning in terms of water resources are made at paragraphs 11.5.43 and 11.6.58 of [**APP-049**], which liken potential impacts to those identified during construction and refer to a *"detailed Decommissioning Environmental Management Plan [which] will be prepared to identify required measures to prevent pollution during this phase of the development"*.
- d. The ExA notes that there is no reference to air quality impacts during construction, operation or decommissioning (for the project alone and in-combination) to the Estuarine habitats qualifying features of the Humber Estuary Ramsar. The ExA is unclear whether, based on the evidence presented in respect of the Humber SAC (and the similarities of Estuarine

habitats qualifying features) the conclusions in respect of the SAC for this habitat type apply in the context of the Ramsar site.

- e. The ExA notes that there is no reference to air quality impacts during construction, operation or decommissioning (for the project alone and in-combination) to these qualifying features of the Humber Estuary Ramsar. The ExA understands that, based on the evidence presented in respect of the Humber Estuary SAC and SPA, and the qualifying features of the SPA, that there are no pathways for LSE to these features.

**Stage 1 Matrix 4: Skipwith Common SAC (E7)**

Site Code: UK0030276

Distance to project: c. 15 km

| European site feature(s)                          | Likely Effects of NSIP    |     |     |                        |     |     |                              |     |     |
|---|---------------------------|-----|-----|------------------------|-----|-----|------------------------------|-----|-----|
|   | Air Quality (without SCR) |     |     | Air Quality (with SCR) |     |     | Air Quality (in-combination) |     |     |
|   | C                         | O   | D   | C                      | O   | D   | C                            | O   | D   |
| European dry heaths                               |                           |     |     |                        |     |     |                              |     |     |
| Northern Atlantic wet heaths with Erica tetralix. | x a                       | ? b | x a | x a                    | ? b | x a | n/a                          | ? c | n/a |

**Notes / evidence**

- a. Paragraph 8.6.3 of ES Chapter 8 [APP-046] and Table 10.6 of ES Chapter 10 [APP-048] concludes construction air quality effects on ecological receptors (ie inclusive of European sites) are screened out based on separation distances.  
The Applicant also proposes to adopt measures set out in the framework CEMP [REP2-020] including specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [REP5-002].  
Paragraph 8.6.44 of ES Chapter 8 [APP-046] likens decommissioning effects to those assessed for construction activities.
- b. For NOx concentrations (without SCR), mean annual and daily mean NOx process contributions at the European site (0.5% and 3% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) and the baseline conditions (52% annual mean, 41% daily mean) are below 100% of the critical level. With SCR, the process

6 <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>

contributions are 0.3% and 1.9% respectively). This is presented in tables 2 and 3 of [REP2-017] (without SCR) and tables 2 and 3 of Appendix H [REP5-006] (with SCR)

For nutrient nitrogen deposition (without SCR), process contributions at the European site (0.3%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) but the baseline conditions (182%) already exceed 100% of the critical load. With SCR the process contribution is 0.3%. This is presented in table 4 of [REP2-017] (without SCR) and table 5 of Appendix H [REP5-006] (with SCR).

For acid deposition (without SCR), process contributions at the European site (0.2%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) but the baseline conditions (208%) already exceed 100% of the critical load. With SCR the process contribution is 0.3% This is presented in table 5 of [REP2-017] (without SCR) and table 6 of Appendix H [REP5-006] (with SCR).

For ammonia concentrations, process contributions at the European site (0.8%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) (presented in table 4 of Appendix H [REP5-006]) but the baseline conditions (201%) already exceed 100% of the critical load (Table 6 [REP2-017]).

- c. In table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>7</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential ('*de minimis*') that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken because there is no pathway for LSE.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the "conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken".

The Applicant also cites paragraph 8.4.20 and 20.5.10 of ES Chapters 8 and 20 [APP-046],[APP-058] in supporting their reasoning that there will be no LSE in-combination.

Table 10H.4 of the HRA Report [REP5-006] does not consider any LSE in combination for the Skipwith Common SAC.

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7 Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.



**Stage 1 Matrix 5: Thorne Moor SAC (E8)**

Site Code: UK0012915

Distance to project: c. 15.5 km

| European site feature(s)                            | Likely Effects of NSIP    |     |     |                        |     |     |                              |     |     |
|---|---------------------------|-----|-----|------------------------|-----|-----|------------------------------|-----|-----|
|   | Air Quality (without SCR) |     |     | Air Quality (with SCR) |     |     | Air Quality (in-combination) |     |     |
|   | C                         | O   | D   | C                      | O   | D   | C                            | O   | D   |
| Degraded bogs still capable of natural regeneration | x a                       | ✓ b | x a | x a                    | ✓ b | x a | n/a                          | ✓ c | n/a |

**Notes / evidence**

- a. Paragraph 8.6.3 of ES Chapter 8 [APP-046] and Table 10.6 of ES Chapter 10 [APP-048] concludes construction air quality effects on ecological receptors (ie inclusive of European sites) are screened out based on separation distances.  
The Applicant also proposes to adopt measures set out in the framework CEMP [REP2-020] including specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [REP5-002].  
Paragraph 8.6.44 of ES Chapter 8 [APP-046] likens decommissioning effects to those assessed for construction activities.
- b. For NOx concentrations (without SCR), mean annual and daily mean NOx process contributions at the European site (0.6% and 2.7% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>8</sup>) and the baseline conditions (60% annual mean, 48% daily mean) are below 100% of the critical level. With SCR, the process

8 <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>

contributions are 0.4% and 1.8% respectively. This is presented in tables 2 and 3 of [REP2-017] (without SCR) and tables 2 and 3 of Appendix H [REP5-006] (with SCR).

For nutrient nitrogen deposition (without SCR), process contributions at the European site (0.7%) are below the 1% 'insignificance' threshold without SCR (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) but the baseline conditions (292%) already exceed 100% of the critical load as presented in table 4 of [REP2-017]. With SCR, the 1% 'insignificance' threshold of process contributions is exceeded (1.1%) (table 5 of Appendix H [REP5-006]). The Applicant concludes this is potential pathway by which the Proposed Development could result in LSE from the operation of the Proposed Development (with SCR only) resulting in *"increased nutrient nitrogen deposition on Thorne Moor SAC as a result of the increase in NH3 emissions"* (paragraph 4.1 of the HRA Report [REP5-006]).

For acid deposition (without SCR), process contributions at the European site (0.4%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) but the baseline conditions (290%) exceed 100% of the critical load. With SCR the process contribution is 0.9%. This is presented in table 5 of [REP2-017] (without SCR) and table 6 of Appendix H [REP5-006] (with SCR).

For ammonia concentrations, process contributions at the European site (1.1%) exceed the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>6</sup>) (presented in table 4 of Appendix H [REP5-006] and the baseline conditions (123%) exceed 100% of the critical load (Table 6 [REP2-017]). The Applicant does not conclude as potential pathway by which the Proposed Development could result in LSE from the operation of the Proposed Development, but notes that LSE in terms of nutrient nitrogen deposition is *"as a result of the increase in NH3 emissions"* (paragraph 4.1 of the HRA Report [REP5-006]).

- c. In table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>9</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential (*'de minimis'*) that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the *"conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken"*.

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<sup>9</sup> Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

Table 10H.4 of the HRA Report [**REP5-006**] concludes LSE in-combination at Thorne Moor SAC but only in the context of Eggborough Coal-Fired Power Station Decommissioning and Demolition, but no quantitative assessment has been undertaken.

**Stage 1 Matrix 6: River Derwent SAC (E12)<sup>10</sup>**

Site Code: UK0030253

Distance to project: c. 9.5km

| European site feature(s)   | Likely Effects of NSIP                   |        |        |                           |     |     |                        |     |     |                              |     |     |
|--|--|--------|--------|---------------------------|-----|-----|------------------------|-----|-----|------------------------------|-----|-----|
|  | Water Quality (including in-combination) |        |        | Air Quality (without SCR) |     |     | Air Quality (with SCR) |     |     | Air Quality (in-combination) |     |     |
|  | C  | O      | D      | C                         | O   | D   | C                      | O   | D   | C                            | O   | D   |
| Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation | x a, b                                   | x c, b | x d, b | x e                       | x g | x e | x e                    | x g | x e | n/a                          | x h | n/a |
| River lamprey Lampetra fluviatilis   | x a, b                                   | x c, b | x d, b | x f                       | x f | x f | x f                    | x f | x f | n/a                          | x f | n/a |
| Sea lamprey Petromyzon marinus   | x a, b                                   | x c, b | x d, b | x f                       | x f | x f | x f                    | x f | x f | n/a                          | x f | n/a |
| Otter Lutra lutra  | x a, b                                   | x c, b | x d, b | x f                       | x f | x f | x f                    | x f | x f | n/a                          | x f | n/a |
| Bullhead Cottus gobio  | x a, b                                   | x c, b | x d, b | x f                       | x f | x f | x f                    | x f | x f | n/a                          | x f | n/a |

**Notes / evidence**

<sup>10</sup> ES Chapter 10 [APP-048] and Chapter 11 [APP-049] identify the River Derwent SAC as a statutory nature conservation designation within 10km of the Proposed Development. ES Chapter 8 identifies the River Derwent SAC as a receptor [APP-046], and it is also presented as a receptor within the Applicant's Technical Note on Air Quality Impacts [REP2-017] and Appendix H of the HRA Report [REP5-006]. Aside from Appendix H, there are no other references to the River Derwent SAC as part of the HRA Report (eg in the list of sites considered in the screening for LSE ((tables 10H.1 and 10H.2 of the HRA report [REP5-006]) and no HRA matrices are presented in relation of this site in Appendix G.

- a. Mitigation measures will be put in place during construction (both best practice measures and those necessary to meet the requirements of environmental legislation for construction). These will be delivered through the CEMP [REP2-020] and secured through draft DCO (dDCO) requirement 18 [REP5-002]. On this basis LSE to European sites from surface water quality impacts are ruled out. These mitigation considerations in terms of LSE are summarised in section 3.3 of the HRA Report [REP5-006].

Table 10H.4 of the HRA Report [REP5-006] does not identify the River Derwent SAC.

- b. See footnote 10. Only “*Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation*” is specifically considered in the Applicant’s air quality modelling assessment, and the HRA Report does not otherwise refer to the River Derwent SAC (including water quality impacts and the other qualifying features).

Based on the figures and information provided by the Applicant (eg Figure 10H.1 of [REP5-006] and ES Chapters 10 and 11 ([APP-048] and [APP-049])), and the understanding of the local and regional geography from unaccompanied site visits, it is not obvious to the ExA that such pathways of surface water quality impacts exist ie the River Derwent SAC is essentially “upstream” of the point where the River Aire meets the River Ouse, although the Applicant has not specifically explained this.

- c. Section 3.1.1 of the HRA Report [REP5-006] states “*cooling towers will be used to control thermal discharges to the river and any pollutant discharges will be monitored, treated and controlled through an Environmental Permit required for the operation of the plant*”.

Potential for surface water quality impacts to European sites during operation at in table 10.6 of ES Chapter 10 [APP-048], and paragraphs 11.6.32 – 11.6.47 of ES Chapter 11 [APP-049]. Volumes of the proposed cooling water abstraction and discharge will be lower than the existing Eggborough coal-fired power station. Cooling water discharge temperature will be similar to existing coal fired power station (i.e. the current baseline).

The Applicant also proposes to adopt measures set out in the Outline Drainage Strategy which has been developed ‘with regards to the effective and safe drainage of surface water from the Proposed Development Site’ (Annex 5 of [APP-112]).

In terms of the consideration of LSE from surface water quality impacts in-combination with other plans and projects, Table 10H.4 of the HRA Report [REP5-006] does not identify the River Derwent SAC.

- d. Gas connection pipeline, cooling water abstraction pipeline and the intake and outfall structures on the River Aire (associated with the construction of the Proposed Development) will remain in-situ (Appendix G [REP5-006]).

References to decommissioning in terms of water resources are made at paragraphs 11.5.43 and 11.6.58 of [APP-049], which liken potential effects to those identified during construction and refer to a "*detailed Decommissioning Environmental Management Plan [which] will be prepared to identify required measures to prevent pollution during this phase of the development*".

- e. Paragraph 8.6.3 of ES Chapter 8 [APP-046] and Table 10.6 of ES Chapter 10 [APP-048] concludes construction air quality effects on ecological receptors (ie inclusive of European sites) are screened out based on separation distances.

The Applicant also proposes to adopt measures set out in the framework CEMP [REP2-020] including specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [REP5-002]. Paragraph 8.6.44 of ES Chapter 8 [APP-046] likens decommissioning effects to those assessed for construction activities.

- f. The ExA notes that there is no reference to air quality impacts during construction, operation or decommissioning (for the project alone and in-combination) to the River lamprey, Sea lamprey, Otter and Bullhead qualifying features of the River Derwent SAC. The ExA understands there are no pathways for LSE to these features although this is not specifically defined by the Applicant.

- g. The For NOx concentrations (without SCR), mean annual and daily mean NOx process contributions at the European site (0.8% and 3% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>11</sup>) and the baseline conditions (46% annual mean, 36% daily mean) are below 100% of the critical level. With SCR, the process contributions are 0.5% and 1.9% respectively). This is presented in tables 2 and 3 of [REP2-017] (without SCR) and tables 2 and 3 of Appendix H [REP5-006] (with SCR)

For nutrient nitrogen and acid deposition, Tables 4 and 5 of [REP2-017]) and Tables 5 and 6, Appendix H, [REP5-006] states that there is no published data in terms of critical loads for nutrient nitrogen and acid deposition.

For ammonia concentrations, process contributions at the European site (0.5%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>11</sup>) (presented in table 5 of Appendix H [REP5-006]) and the baseline conditions (75%) are below 100% of the critical load (Table 6 of [REP2-017]).

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<sup>11</sup> <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>

- h.** In table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>12</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential (*'de minimis'*) that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken because there is no pathway for LSE.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the "conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken".

The Applicant also cites paragraph 8.4.20 and 20.5.10 of ES Chapters 8 and 20 [APP-046],[APP-058] in supporting their reasoning that there will be no LSE in-combination.

Table 10H.4 of the HRA Report [REP5-006] does not conclude as to LSE in combination for the River Derwent SAC.

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12 Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

**Stage 1 Matrix 7: Strensall Common SAC (E13)**

Site Code: UK0030284

Distance to project: c. 35km

| European site feature(s)   | Likely Effects of NSIP    |     |     |                        |     |     |                              |     |     |
|--|---------------------------|-----|-----|------------------------|-----|-----|------------------------------|-----|-----|
|  | Air Quality (without SCR) |     |     | Air Quality (with SCR) |     |     | Air Quality (in-combination) |     |     |
|  | C                         | O   | D   | C                      | O   | D   | C                            | O   | D   |
| European dry heaths.<br>Northern Atlantic wet heaths with <i>Erica tetralix</i> (wet heathland with cross-leaved heath). | x a                       | ? b | x a | x a                    | ? b | x a | n/a                          | ? c | n/a |

**Notes / evidence**

- a. Paragraph 8.6.3 of ES Chapter 8 [APP-046] and Table 10.6 of ES Chapter 10 [APP-048] concludes construction air quality effects on ecological receptors (ie inclusive of European sites) are screened out based on separation distances.  
The Applicant also proposes to adopt measures set out in the framework CEMP [REP2-020] including specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [REP5-002].  
Paragraph 8.6.44 of ES Chapter 8 [APP-046] likens decommissioning effects to those assessed for construction activities.
- b. For NOx concentrations (without SCR), mean annual and daily mean NOx process contributions at the European site (0.4% and 1.1% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>13</sup>) and the baseline

13 <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>



conditions (55% annual mean, 44% daily mean) are below 100% of the critical level. With SCR, the process contributions are 0.2% and 0.7% respectively. This is presented in tables 2 and 3 of [REP2-017] (without SCR) and tables 2 and 3 of Appendix H [REP5-006] (with SCR)

For nutrient nitrogen deposition, process contributions at the European site (0.2%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>13</sup>) but the baseline conditions (216%) exceed 100% of the critical load. This is the case with and without SCR as presented in table 4 of [REP2-017] (without SCR) and table 5 of Appendix H [REP5-006] (with SCR).

For acid deposition, process contributions at the European site (<0.1%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>13</sup>) but the baseline conditions (124%) already exceed 100% of the critical load. This is the case with and without SCR as presented in table 5 of [REP2-017] (without SCR) and table 6 of Appendix H [REP5-006] (with SCR).

For ammonia concentrations, process contributions at the European site (0.5%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>13</sup>) (presented in table 4 of Appendix H [REP5-006]) but the baseline conditions (250%) already exceed 100% of the critical load (Table 6 [REP2-017]).

- c. In table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>14</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential ('*de minimis*') that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken because there is no pathway for LSE.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the "conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken".

The Applicant also cites paragraph 8.4.20 and 20.5.10 of ES Chapters 8 and 20 [APP-046],[APP-058] in supporting their reasoning that there will be no LSE in-combination.

Table 10H.4 of the HRA Report [REP5-006] does not consider any LSE in combination for the Strensall Common SAC.

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<sup>14</sup> Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

**Stage 1 Matrix 8: North York Moors SAC (E14)**

Site Code: UK0030284

Distance to project: c. 65km

| European site feature(s)  | Likely Effects of NSIP    |     |     |                        |     |     |                              |     |     |
|---|---------------------------|-----|-----|------------------------|-----|-----|------------------------------|-----|-----|
|   | Air Quality (without SCR) |     |     | Air Quality (with SCR) |     |     | Air Quality (in-combination) |     |     |
|   | C                         | O   | D   | C                      | O   | D   | C                            | O   | D   |
| Blanket bogs  | x a                       | ? b | x a | x a                    | ? b | x a | n/a                          | ? c | n/a |
| Northern Atlantic wet heaths with Erica tetralix. (Wet heathland with cross-leaved heath) |                           |     |     |                        |     |     |                              |     |     |
| European dry heaths   |                           |     |     |                        |     |     |                              |     |     |

**Notes / evidence**

- a. Paragraph 8.6.3 of ES Chapter 8 [APP-046] and Table 10.6 of ES Chapter 10 [APP-048] concludes construction air quality effects on ecological receptors (ie inclusive of European sites) are screened out based on separation distances.  
The Applicant also proposes to adopt measures set out in the framework CEMP [REP2-020] including specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [REP5-002].  
Paragraph 8.6.44 of ES Chapter 8 [APP-046] likens decommissioning effects to those assessed for construction activities.
- b. For NOx concentrations (without SCR), mean annual and daily mean NOx process contributions at the European site (0.2 and 0.7% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by

Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>15</sup>) and the baseline conditions (28% annual mean, 22% daily mean) are below 100% of the critical level. With SCR, the process contributions are 0.1% and 0.4% respectively. This is presented in tables 2 and 3 of [REP2-017] (without SCR) and tables 2 and 3 of Appendix H [REP5-006] (with SCR)

For nutrient nitrogen deposition, process contributions at the European site (0.2%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>15</sup>) but the baseline conditions (398%) already exceed 100% of the critical load. This is the case with and without SCR as presented in table 4 of [REP2-017] (without SCR) and table 5 of Appendix H [REP5-006] (with SCR).

For acid deposition (without SCR), process contributions at the European site (0.1%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>15</sup>) but the baseline conditions(330%) already exceed 100% of the critical load. With SCR, the process contribution is 0.2%. This is presented in table 5 of [REP2-017] (without SCR) and table 6 of Appendix H [REP5-006] (with SCR).

For ammonia concentrations, process contributions at the European site (0.3%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>15</sup>) (presented in table 4 of Appendix H [REP5-006]) but the baseline conditions (136%) exceed 100% of the critical load (Table 6 [REP2-017]).

- c. In table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>16</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential (*'de minimis'*) that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken because there is no pathway for LSE.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the "conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken".

The Applicant also cites paragraph 8.4.20 and 20.5.10 of ES Chapters 8 and 20 [APP-046],[APP-058] in supporting their reasoning that there will be no LSE in-combination.

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15 <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>

16 Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

Table 10H.4 of the HRA Report [**REP5-006**] does not consider any LSE in combination for the North York Moors SAC.

**Stage 1 Matrix 9: Hatfield Moor SAC (E15)**

Site Code: UK0030166

Distance to project: c. 20km

| European site feature(s)                                   | Likely Effects of NSIP    |     |     |                        |     |     |                              |     |     |
|--|---------------------------|-----|-----|------------------------|-----|-----|------------------------------|-----|-----|
|  | Air Quality (without SCR) |     |     | Air Quality (with SCR) |     |     | Air Quality (in-combination) |     |     |
|  | C                         | O   | D   | C                      | O   | D   | C                            | O   | D   |
| Degraded raised bogs still capable of natural regeneration | x a                       | ? b | x a | x a                    | ? b | x a | n/a                          | ? c | n/a |

**Notes / evidence**

- a. Paragraph 8.6.3 of ES Chapter 8 [APP-046] and Table 10.6 of ES Chapter 10 [APP-048] concludes construction air quality effects on ecological receptors (ie inclusive of European sites) are screened out based on separation distances.
- The Applicant also proposes to adopt measures set out in the framework CEMP [REP2-020] including specific air quality mitigation measures to minimise the impacts of construction works, and the CEMP is secured by dDCO requirement 18 [REP5-002].
- Paragraph 8.6.44 of ES Chapter 8 [APP-046] likens decommissioning effects to those assessed for construction activities.
- b. For NOx concentrations (without SCR), mean annual and daily mean NOx process contributions at the European site (0.2% and 1.7% respectively) are below the 1% mean annual / 10% daily 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>17</sup>) and the baseline conditions (76% annual mean, 61% daily mean) are below 100% of the critical level. With SCR, the process contributions are 0.1% and 1.1% respectively. This is presented in tables 2 and 3 of [REP2-017] (without SCR) and tables 2 and 3 of Appendix H [REP5-006] (with SCR)

17 <https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits>

For nutrient nitrogen deposition, process contributions at the European site (0.2%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>15</sup>) but the baseline conditions (350%) already exceed 100% of the critical load. This is the case with and without SCR as presented in table 4 of [REP2-017] (without SCR) and table 5 of Appendix H [REP5-006] (with SCR).

For acid deposition, process contributions at the European site (0.2%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>17</sup>) but the baseline conditions (354%) already exceed 100% of the critical load. This is the case with and without SCR as presented in table 5 of [REP2-017] (without SCR) and table 6 of Appendix H [REP5-006] (with SCR).

For ammonia concentrations, process contributions at the European site (0.3%) are below the 1% 'insignificance' threshold (as defined by Environment Agency's environmental permitting air emissions risk assessment significance criteria<sup>17</sup>) (presented in table 4 of Appendix H [REP5-006]) but the baseline conditions (161%) exceed 100% of the critical load (Table 6 [REP2-017]).

- c. In table 2.1 of [REP5-006], the Applicant refers to IAQM guidance<sup>18</sup> that where process contributions are 1% (or even slightly above) then the magnitude of change is so inconsequential ('*de minimis*') that it does not require an in-combination effects assessment, and therefore a quantitative assessment of in-combination effects assessment has not been undertaken because there is no pathway for LSE.

Applicant states that both NE and EA consider the potential for in-combination effects to be negligible for the Proposed Development based on the predicted process contribution and the "conservatism and level of uncertainty inherent within the dispersion modelling assessment undertaken".

The Applicant also cites paragraph 8.4.20 and 20.5.10 of ES Chapters 8 and 20 [APP-046],[APP-058] in supporting their reasoning that there will be no LSE in-combination.

Table 10H.4 of the HRA Report [REP5-006] does not consider any LSE in combination for the Hatfield Moor SAC.

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18 Institute of Air Quality Management (IAQM) (2016) Use of a Criterion for the Determination of an Insignificant Effect of Air Quality Impacts on Sensitive Habitats. IAQM Position Statement – Effect of Air Quality Impacts on Sensitive Habitats.

## **ANNEX 2: STAGE 2 MATRICES: ADVERSE EFFECT ON INTEGRITY**

## Stage 2 Matrices: Adverse Effect on Integrity

This annex of the RIES identifies the European sites and features for which the Applicant's conclusions were considered during the examination. These integrity matrices have been produced by the Inspectorate based on the submissions of the applicant and interested parties during the examination

### Key to Matrices:

- ✓ Likely significant effect cannot be excluded
  - × Likely significant effect can be excluded
  - ? Unclear whether likely significant effect can be excluded
- 
- C construction
  - O operation
  - D decommissioning

Information supporting the conclusions is detailed in footnotes for each table with reference to relevant supporting documentation.

Where an impact is not considered relevant for a feature of a European Site the cell in the matrix is formatted as follows:

|     |
|-----|
| n/a |
|-----|



**Stage 2 Matrix 1: Thorne Moor SAC (E8)**

Site Code: UK0012915

Distance to project: c. 15.5 km

| European site feature(s)                            | Likely Effects of NSIP                           |     |     |
|---|--|-----|-----|
|   | Air Quality (with SCR, alone and in-combination) |     |     |
|   | C  | O   | D   |
| Degraded bogs still capable of natural regeneration | n/a  | x a | n/a |

**Notes / evidence**

- a. The Applicant concluded that the project will not adversely affect the integrity of the Thorne Moor SAC (sections 4.5 (project alone) and 4.6 (in combination with other plans and projects) of the HRA Report [REP5-006]).

The Applicant notes that nutrient nitrogen is *"very slightly in excess of the 1% screening insignificance threshold"* and only relates to *"a small part of the Thorne Moor"* (Figure 1, Appendix H, [REP5-006]). NE has been consulted, and is satisfied that there will be no adverse effects on the integrity of the European Site on this basis (table 2.1 of [REP5-006] (the joint response to the ExA's rule 17 request (item 8))).

A Site Improvement Plan (SIP) exists for the Thorne Moor SAC has been prepared by NE, which states that: 'As with most lowland raised bogs in England, the aerial deposits of nitrogen exceed the threshold limits above which the quality and character of bog vegetation begin to be altered and adversely impacted.' The APIS database states a critical load range of 5 – 10 kg N/ha/yr for the 'degraded raised bogs' habitat feature, with the current deposition range at Thorne Moor SAC stated at 14.6 – 18.8 kg N/ha/yr (average or 15.2 kg N/ha/yr).

Applicant cites uncertainty around whether the unfavourable condition of the lowland raised bog feature within the northern part of the Thorne Moor SAC is influenced by high nutrient nitrogen deposition rates. The Applicant maintains that *'the degree to which N deposition is influencing any adverse change in the vegetation of the bog habitat cannot be reasonably quantified'*

The Applicant cites that *'Published dose-response relationships for bog habitats are limited but have shown that the effects of additional nitrogen at existing high background nitrogen rates may be modest compared to those at low'*

*background rates, because nitrogen is already in excess and the ability of plants to respond to additional nitrogen is finite...The process contribution from the proposed development with SCR...is well below the process contribution that would be reasonably expected to result in a measurable change to the vegetation composition of the SAC, even when the high background N deposition rates are considered.'*

Reference is made to research published by NE for 'bogs' with high background deposition rates<sup>1</sup>, which the Applicant interprets as defining a value of 3.3 kg N/ha/yr that the Proposed Development (alone and in-combination) would need to contribute in order to adversely affect the bog habitat (ie a 'measurable change'). No other large scale power generation, agricultural projects or road schemes have been identified by the Applicant that could potentially result in increased nitrogen or acid deposition to the Thorne Moor SAC to that level of effect.

The closure of the existing Eggborough coal-fired power station will result in a net decrease in the overall process contribution from N deposition to Thorne Moor SAC (existing process contribution from the operation of Eggborough coal-fired power station has been modelled at up to 3% of the critical load). This net reduction will contribute towards the SIP action 3A for Thorne Moor SAC to '*control, reduce and ameliorate atmospheric nitrogen impacts*'. The SIP aims to '*address priority issues that are currently impacting or threatening the condition of the designated features.*'

There are also a number of key changes to the modelling assessment of the SCR scenario presented in [APP-100] and [REP2-017] (described at section 2, Appendix H, [REP5-006]) which update the assessments. The ExA notes that this information does not update the 'without SCR' assessment information from [REP2-017]. The revised SCR assessment includes:

- Changes to ammonia slip concentration from the Proposed Development
- Changes to long-term process contribution load and operation run time % in the modelling assumptions
- Changes to the emission rates for the reciprocating engine component of the peaking plant modelling have been modelled at a lower emission limit value in line with Large Combustion Plant BAT Conclusions.

The ExA therefore notes that the parameters and assessments as presented in the ES ([APP-046] and [APP-100]) as a "worst case" are no longer applicable to HRA as a result of [REP2-017] and [REP5-006].

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1 Caporn, S., Field, C., Payne, R., Dise, N., Britton, A., Emmett, B., Jones, L., Phoenix, G., S Power, S., Sheppard, L. & Stevens, C. (2016). Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210