North Lincolnshire Council

Habitats Regulations Assessment

Stage 1 Significance Test and Stage 2 Appropriate Assessment, January 2024

Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas

VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

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Significance Test

Title of Plan

Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas

Location of Plan or Project /Application

VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

Ordnance Survey Grid Reference: TA168172

International Nature Conservation Sites

Humber Estuary Special Protection Area (SPA)

Humber Estuary Special Conservation Area (SAC) and Ramsar site

Description of Project (Feather & Fletcher 2023)

The Proposed VPI Development will include the following components:

- ducting to connect GT1, GT2 and the auxiliary boilers to the VPI PCC plant;
- two PCC units (or 'trains'), each with associated blower, direct contact cooler, absorber,
- stack, stripper/ regenerator, thermal reclaimer unit and air-cooled heat exchangers;
- a CO2 vent stack for use during start up, shut down and emergencies only;
- CO2 compression facility with associated air-cooled heat exchangers;
- oxygen removal and dehydration facilities;
- CO2 metering and a pipeline connecting the PCC plant and compression facilities to the CO2 gathering network interface;
- on-site electrical substations;
- caustic, solvent and other chemical offloading and storage facilities;
- utilities (including chillers, steam generator, hydrogen package and air compressors)
- internal access roads;
- surface water drainage system.
- realignment of the existing ditch (South Killingholme Drain) within the VPI Site;

- construction and maintenance laydown areas; and
- a new site access from Rosper Road.

The Habitats Regulations Assessment Process

The process is described in detail in Circular 06/2005. The Council has followed the Circular as closely as possible. The main stages in the process are as follows. Note that if there are no harmful effects on the features of the International Nature Conservation Sites, or if these effects can be prevented, not all of the stages will be required.

- Determination of Likely Significant Effect
- Appropriate Assessment with regard to site Conservation Objectives.
    - Determine whether there will be an Adverse Effect on the Integrity (AEOI) of the International Nature Conservation Sites with reference to all the relevant interest features.
    - Consider possible restrictions and conditions.
    - Consider alternative approaches.
    - Consider any Imperative Reasons of Over-riding Public Interest (IROPI).

Put simply, the Local Planning Authority can only grant planning permission if, at a given stage above, in can be ascertained that the proposal would not adversely affect the integrity of the International Nature Conservation Sites. Even if, at a late stage in considerations, IROPI were found to apply, compensatory measures would need to be provided.

North Lincolnshire Council has prepared this Habitats Regulations Assessment (HRA), which draws heavily on the information provided by the applicant in a shadow HRA (Atkinson 2023).

Circular 06/2005 describes the key decision to be made as follows:

> "In the light of the conclusions of the assessment of the project's effects on the site's conservation objectives, the decision-taker must determine whether it can ascertain that the proposal will not adversely affect the integrity of the site(s). The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified. It is not for the decision-taker to show that the proposal would harm the site, in order to refuse the application or appeal. It is for the decision-taker to consider the likely and reasonably foreseeable effects and to ascertain that the proposal will not have an adverse effect on the integrity of the site before it

may grant permission. If the proposal would adversely affect integrity, or the effects on integrity are uncertain but could be significant, the decision-taker should not grant permission, subject to the provisions of regulations 49 and 53 as described below."

"..In the Waddenzee judgment, the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made certain that the plan or project will not adversely affect the integrity of the site. "That is the case where no reasonable scientific doubt remains as to the absence of such effects". Competent national authorities must be "convinced" that there will not be an adverse affect and where doubt remains as to the absence of adverse affects, the plan or project must not be authorised, subject to the procedure outlined in Article 6(4) of the EC Habitats Directive regarding imperative reasons of overriding public interest." – ODPM 2005.

Box 1- Government Guidance on the Determination of Likely Significant Effect (LSE) (www.gov.uk accessed 20 May 2021)

Screening
This step is a simple assessment to check or screen if a proposal:

- is directly connected with or necessary for the conservation management of a European site
- risks having a significant effect on a European site on its own or in combination with other proposals

You should consider the proposal's integral design features or characteristics, such as its layout, timing and location to inform your screening decision. These may mean that any risk to a European site is avoided and you do not need to do an appropriate assessment.

At this stage, you should not consider any mitigation measures included by the proposer for the purpose of avoiding or minimising risk to a European site. These mitigation measures need to be considered at the appropriate assessment stage.

Conservation management proposals
You must first check if the whole proposal is for the conservation management of the habitats or species for which the European site has been designated. If it is, you do not need to carry out an appropriate assessment.

You must continue screening the proposal if it contains:

- conservation management that could negatively affect a different feature or a different European site
- non-conservation management activities, such as development, commercial operations or recreational events

Assess the likely significant effect
You must check if the proposal could have a significant effect on a European site that could affect its conservation objectives.

You should check if there's a risk or possibility of a significant effect based on the evidence. You should only consider real, not hypothetical risk.

[…]

You should consider:

- the area over which the proposed activity would take place
- any overlaps or interaction with the protected features of a site in a direct or indirect way
- the effect of any essential parts of the proposal, such as its location, timing or design

If you cannot rule out the risk of the proposal having a significant effect, you will need to do an appropriate assessment.

Check for combined effects
Your proposal alone may have an effect on a European site that's not significant. You must check if this effect could combine with any other proposal planned or underway and affects the same site, that on its own also does not have a significant effect. If, in combination, your proposal could have a significant effect on the European site, you will need to do an appropriate assessment.

Check for proposals being dealt with by other competent authorities, such as:

- applications for a new permission
- applications to change an existing permission
- granted permissions that have not begun or been completed
- granted permissions that need renewing
- plans that have been drafted but not yet adopted

A proposal, alone or in combination with other proposals, could cause a significant effect on a European site if there's:

- a reduction in the amount or quality of designated habitats or the habitats that support designated species
- a limit to the potential for restoring designated habitats in the future
- a significant disturbance to the designated species
- disruption to the natural processes that support the site's designated features
- only reduction or offset measures in place

If there's no likely significant effect on the site, either alone or in combination, then you do not need to carry out an appropriate assessment.

You should record your screening decision and your reasons for it.

Likely Significant Effect (LSE) determination:

Potential hazards to the features of the International Nature Conservation Sites that have been considered are as follows:

Potential Construction Impact Pathways Scoped In (derived from Atkinson 2023)

- visual disturbance to SPA/ Ramsar birds using functionally linked land – disturbance to breeding avocet at Rosper Road Pools, and wintering/ passage waterbirds feeding, roosting and loafing in terrestrial fields east of Rosper Road, and Rosper Road Pools;
- noise disturbance to SPA/ Ramsar birds using functionally linked land – disturbance to breeding avocet at Rosper Road Pools, and wintering/ passage waterbirds feeding, roosting and loafing in terrestrial fields east of Rosper Road, and Rosper Road Pools;
- noise and visual disturbance to SPA/ Ramsar birds within the SPA/ Ramsar – disturbance to wintering/ passage waterbirds feeding, roosting and loafing on intertidal mudflats within the boundary of the designated site; and
- surface water quality – potential pathways for the surface water pollution to the adjacent drainage network, and ultimately to the Humber Estuary SAC/ SPA/ Ramsar into which the surface water drainage flows during the construction phase of the Proposed VPI Development e.g. sedimentation, vehicle fuel spill.
- air quality - potential pathways identified through stack emissions to air (acid, ammonia and nitrogen) during the operational phase of Proposed VPI Development resulting in effects on susceptible habitats within the Humber Estuary SAC/ SPA/ Ramsar.

Potential Construction Impact Pathways Scoped Out (derived from Atkinson 2023)

- noise/ visual disturbance to breeding bittern, marsh harrier and little tern - there is no suitable habitat for these qualifying species of SPA/ Ramsar breeding birds within the potential zone of influence of noise and visual disturbance arising from the construction or operation of the Proposed VPI Development;
- underwater noise disturbance to SAC/ Ramsar marine mammals and fish – all works are > 1 km from the estuary and over this distance it is reasonable to conclude that there would be no propagation of underwater noise such that the qualifying features could be significantly affected;
- direct loss or physical damage to qualifying habitats or habitats used by qualifying species – as established in the ecological impact assessment accompanying the application, the VPI Site itself is unsuitable as functionally linked land for SPA/ Ramsar birds as it is a mosaic of tall grassland, bare ground and dense/ scattered scrub. Moreover, given the distance between the designations and the Proposed VPI Development there is no pathway that could result in direct habitat loss or direct physical damage to any of the designated habitats. Similarly, there are no groundwater pathways over this distance through which the Proposed VPI Development could give rise to any effects on the groundwater dependent terrestrial ecosystems (GWTEs) of the sites;

- air quality (dust emissions) – given the distance of the designated habitats from the Proposed VPI Development (approximately 1.5 km), they are well outside the zone of influence of fugitive dust emissions from construction, which is approximately 50 m; and
- air quality (emissions from road traffic movements) - the affected roads are >200 m from the Humber Estuary SAC/ Ramsar boundary and therefore this pathway is scoped out of the Air Quality assessment for road traffic movements in the submitted Environmental Statement.

Assessment of Impact Pathways Scoped In

- Construction and Operational Visual Disturbance to Functionally Linked Land (Rosper Road Pools)

  The Proposed VPI Development is approximately 130 m west of Rosper Road Pools on the western side of Rosper Road. The tall hedgerow on the northern boundary of Rosper Road Pools provides significant screening from visual disturbance. The functionally linked land is more open to the west.

  The nature and scale of the operational and temporary construction activities associated with the Proposed VPI Development are not significantly different from on-going industrial activities within the area surrounding the Rosper Road Pools. It is envisaged that the plant, machinery, vehicles and structures used during construction and operation will not result in any material change in the conditions currently prevailing in terms of visual disturbance.

  There is no likely significant effect on the Humber SPA/Ramsar site in relation to the impact pathway "Construction and Operational Visual Disturbance to Functionally Linked Land (Rosper Road Pools)"

- Construction Noise Disturbance to Functionally Linked Land (Rosper Road Pools)

  Given the proximity of the Proposed VPI Development to Rosper Road Pools and therefore the potential for noise disturbance, Likely Significant Effects cannot be screened out and therefore this pathway is taken forward to Stage 2: Appropriate Assessment (Atkinson 2023).

- Operational Noise Disturbance to Functionally Linked Land (Rosper Road Pools)

  The modelled noise levels at the nearest functionally linked land associated with Rosper Road Fields (Field 5) are <60 dB LAeq,T across the open lagoon habitat. Studies indicate that noise levels >84 dBA typically elicit a flight response in birds and the same

research recommends that construction noise levels are kept below 70 dB to avoid excessive disturbance of birds (Atkinson 2023).

The modelling also demonstrates that there are no predicted exceedances of Natural England's suggested 3 dBA 'rule-of-thumb' change in noise level threshold at locations in the functionally linked land to the east of Rosper Road. A 'with mitigation' scenario has been modelled for the operational phase as this includes noise mitigation measures required for environmental compliance and is not related to ecological mitigation (as no ecological mitigation is required) (ibid).

There is no likely significant effect on the Humber SPA/Ramsar site in relation to the impact pathway "Operational Noise Disturbance to Functionally Linked Land (Rosper Road Pools)" when considering the Proposed VPI Development alone.

- Construction Visual Disturbance to Functionally Linked Land (Terrestrial Fields)

  The Proposed VPI Development is on the opposite side of Rosper Road to fields used occasionally by numbers of curlew >1% of the Humber Estuary population. These fields are considered functionally linked land. The provision of mitigation habitat by Able UK at Halton Marshes Wet Grassland is intended to mitigate for any loss of, of disturbance of, this functionally linked land. This approach is in accordance with the Policy CS12 of the North Lincolnshire Core Strategy and the North Lincolnshire Housing and Employment Land Allocations Development Plan Document.

  The nature and scale of the temporary construction activities associated with the Proposed VPI Development are not significantly different from on-going industrial activities within the area surrounding the Rosper Road Pools. It is envisaged that the plant, machinery, vehicles and structures used during construction will not result in any material change in the conditions currently prevailing in terms of visual disturbance. The hedgerows/ scattered trees along the eastern side of Rosper Road also provide some visual screening.

  There is no likely significant effect on the Humber SPA/Ramsar site in relation to the impact pathway "Construction Visual Disturbance to Functionally Linked Land (Terrestrial Fields)"

- Construction Noise Disturbance to Functionally Linked Land (Terrestrial Fields)

  The application site lies close to fields along Rosper Road that are functionally linked to the Humber Estuary SPA and Ramsar Site. The fields support wintering and passage curlew in significant numbers. This is an assemblage species.

  Able UK has created 20 hectares of core wet grassland habitat, buffered by further habitat, at Halton Marshes Wet Grassland (HMWG). This is intended to mitigate for all of the losses of functionally linked terrestrial land at Killingholme Marsh due to developments allocated through development plans (Taylor 2017). This provision is compatible with the requirements of The South Humber Gateway Strategic Mitigation Strategy and The Housing and Employment Allocations Development Plan Document (adopted March 2016) (ibid). Taking into account Natural England advice and the recorded commuting distances for curlew, it is reasonable to conclude that the mitigation for loss of feeding, roosting and loafing habitat for curlew from Killingholme Marsh can effectively be delivered by the provision of 20 hectares of core habitat, along with appropriate buffers at HMWGS (ibid).

  For clarity, this habitat has already been created and is being managed in accordance with a management plan and expert advice. The mitigation habitat will continue to be provided whether or not the VPI development goes ahead. However, this does mean that safeguards are already in place in relation to the displacement of birds from the terrestrial fields. Therefore, it is acceptable to consider the mitigation measures when determining likely significant effect.

  However, Natural England has concerns that sites mitigating for the future loss of feeding, roosting and loafing habitat cannot fully mitigate for the disturbance of birds that still use Kiillingholme Marsh in the interim period. Although disturbed birds could return to to Killingholme Marsh fields after the disturbance, or could move to HMWG, they have still been disturbed, as opposed to displaced. Such disturbance could occur repeatedly and could have the following effects (E. Brading, pers. comm.):

  - displacement which may result in greater energy expenditure;
  - increased stress which may result in physiological and behavioural changes that can potentially reduce fitness;
  - interference or masking effects on communication signals which may affect predation rates and mating success;
  - increased vigilance which can reduce foraging or roosting time.

  Therefore the potential for noise disturbance Likely Significant Effects cannot be screened out and this pathway is taken forward to Stage 2: Appropriate Assessment.

- Construction and Operational Noise/ Visual Disturbance to Habitats within SPA/ Ramsar Boundary

  The Proposed VPI Development is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. At this distance it is reasonable to conclude there is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats as a result of construction activities (Atkinson 2023).

  There will be no driven impact piling for the construction of the Proposed VPI Development as all piling will be undertaken using a Continuous Flight Auger (CFA) piling rig. The noise modelling undertaken for the Proposed VPI Development confirms that piling noise will have attenuated to within ambient levels at the nearest areas of mudflats at North Killingholme Marshes. It is therefore concluded that there is no potential for noise disturbance to birds feeding, roosting and loafing on the mudflats at North Killingholme marshes (ibid).

  There is no likely significant effect on the Humber SPA/Ramsar site in relation to the impact pathway “Construction and Operational Noise/ Visual Disturbance to Habitats within SPA/ Ramsar Boundary”

- Construction and Operational Surface Water Quality

  There is the potential for pollution/ siltation of Humber Estuary via the surface water drainage network, into which surface water run-off from the Proposed VPI Development will outfall during construction. However, standard environmental measures to control pollution to the drains during construction phase will adequately minimise risk. As this is required for compliance with environmental legislation, and not specifically to mitigate for impacts on the SAC/ SPA/ Ramsar, this can be taken into account at the screening stage. It is therefore concluded that with the embedded measures to control pollution/ siltation during construction, there will be no likely significant effects on Humber Estuary SAC/ SPA/ Ramsar habitats or the species they support.

  There is no likely significant effect on the Humber SPA/Ramsar site in relation to the impact pathway “Construction and Operational Surface Water Quality”

- Operational Air Quality.

  Air quality modelling has been undertaken for operational emissions from the Proposed VPI Development (Atkinson 2023). The impact of emissions on sensitive ecological receptors are quantified in two ways:

  - direct impacts – due to increases in atmospheric pollutant concentrations, which are assessed against defined 'critical levels'; and
  - indirect impacts – deposition of acids and nutrient nitrogen to the ground surface, which are assessed against defined 'critical loads'.

  The critical levels for the protection of vegetation and ecosystems are defined as "concentrations of pollutants in the atmosphere above which direct adverse effects on...plants [and] ecosystems...may occur according to present knowledge," and critical loads are defined as "a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge" (Centre for Ecology and Hydrology (CEH) and Air Pollution Information System (APIS) website (2022). Critical levels and loads are set out in detail in Section 6.2 of the applicant's ES Chapter 6 (Air Quality).

  The air quality assessment has considered the modelled effects of nitrogen dioxide NO_2 (annual mean/ daily mean), sulphur dioxide SO_2 (annual mean) and ammonia NH_3 (annual mean) emissions from the Proposed VPI Development on the worst impacted designated site receptor. All impacts are considered to be insignificant at the ecological receptors as they do not exceed the 1% screening threshold for Process Contributions (PC). It is therefore concluded that the Proposed VPI Development will result no likely significant effects on the Humber Estuary SAC/ SPA/ Ramsar habitats as a result of changes in air quality due to operational stack emissions for these pollutants, except for annual average nitrogen oxides NOx at the worst-case impacted receptor (Humber Estuary (OE1)). The increase in the annual average NOx PC at this receptor represents +4.7% of the AQAL for the Proposed VPI Development assessment. As LSEs cannot be excluded at the screening stage, this pathway is taken forward for Task 2: Appropriate Assessment (Atkinson 2023).

In-combination Plans and Projects.
The proposed project would have the following effects alone. Therefore, it is not necessary at this stage to consider whether this project would act in combination with other plans or projects in relation to these effects (DTA Publications):

- Construction Noise Disturbance to Functionally Linked Land (Rosper Road Pools)
- Operational Air Quality.

The following pressures, attributable to the project, are so minor that effects in-combination with other plans or projects are not likely:

- construction and operational visual disturbance to functionally linked land (Rosper Road Pools);
- construction visual disturbance to functionally linked land (Terrestrial Fields);
- construction and operational noise/ visual disturbance to habitats within SPA/ Ramsar boundary;
- noise/ visual disturbance to breeding bittern, marsh harrier and little tern;
- underwater noise disturbance to SAC/ Ramsar marine mammals and fish;
- direct loss or physical damage to qualifying habitats or habitats used by qualifying;
- air quality (dust emissions); and
- air quality (emissions from road traffic movements).

The following pressure could lead to a likely significant effect on the Humber Estuary SPA and Ramsar site when considered in combination with other projects:

- operational noise disturbance to functionally linked land (Rosper Road Pools);

  Given the proximity of the proposed Gigastack (PA/SCO/2022/13) and ABP Westgate projects (PA/2022/1223) to Rosper Road Pools and the potential for simultaneous operation with the Proposed VPI Development, there is potential for in-combination noise/ visual disturbance to Rosper Road Pools. As LSEs cannot be excluded at the screening stage, this pathway is taken forward for Task 2: Appropriate Assessment.

Determination of Likely Significant Effect under the Conservation of Habitats and Species Regulations 2017 (as amended)

1. North Lincolnshire Council does not consider that the plan or project is directly connected with, or necessary to, the management of the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC) for nature conservation.

2. North Lincolnshire Council is of the opinion that the plan or project is likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Protection Area (SPA) and Ramsar site.

   North Lincolnshire Council is of the opinion that the plan or project is not likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Conservation Area (SAC).

Overall Conclusion

North Lincolnshire Council is of the opinion that an appropriate assessment is required to determine the implications of the project in view of the sites' conservation objectives for the European interest. The appropriate assessment will initially consider the effects of the project alone. The potential impacts requiring appropriate assessment are as follows:

- Construction Noise Disturbance to Functionally Linked Land (Rosper Road Pools)
- Operational noise disturbance to functionally linked land (Rosper Road Pools);
- Construction Noise Disturbance to Functionally Linked Land (Terrestrial Fields)
- Operational Air Quality.

Signed [redacted] Date 29 January 2024

Designation Natural Environment Policy Specialist

Summary of Determination of Likely Significant Effect (LSE) on International Nature Conservation Site Interest Features

Humber Estuary Special Area of Conservation (SAC) Interest Features

Interest Feature	Likely Significant Effect	Reason
1. Coastal lagoons	No LSE	Feature not found in or near application site
2. Fixed dunes with herbaceous vegetation ("grey dunes")	No LSE	Feature not found in or near application site
3. Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	**LSE**	**Aerial deposition of NOx may exceed the process critical load thresholds for salt meadow habitats at North Killingholme Haven Pits SSSI.**
4. Dunes with *Hippophae rhamnoides* sea-buckthorn.	No LSE	Feature not found in or near application site
5. Embryonic shifting dunes	No LSE	Feature not found in or near application site
6. Estuaries	No LSE	Standard environmental measures to control pollution to the drains during construction phase will adequately minimise risk. As this is required for compliance with environmental legislation, and not specifically to mitigate for impacts on the SAC/ SPA/ Ramsar, this can be taken into account at the screening stage. Aerial deposition of pollutants will not exceed critical load thresholds for this habitat.
7. *Halichoerus grypus* Grey seal	No LSE	Feature not found in or near application site
8. *Lampetra fluviatilis* River lamprey.	No LSE	Feature not found in or near application site
9. Mudflats and sandflats not covered by seawater at low tide	No LSE	Standard environmental measures to control pollution to the drains during construction phase will adequately minimise risk. As this is required for compliance with environmental legislation, and not specifically to mitigate for impacts on the SAC/ SPA/ Ramsar, this can be taken into account at the screening stage. Aerial deposition of pollutants will not exceed critical load thresholds for this habitat.
10. *Petromyzon marinus* Sea lamprey	No LSE	Feature not found in or near application site
11. *Salicornia* and other annuals colonising mud and sand	No LSE	Feature not found in or near application site
12. Sandbanks which are slightly covered by sea water all the time	No LSE	Feature not found in or near application site
13. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")	No LSE	Feature not found in or near application site

Humber Estuary Special Protection Area (SPA) Interest Features

Qualifying species
The site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

Annex 1 species	Count and season	Likely Significant Effect	Reason
Avocet *Recurvirostra avosetta*	59 individuals – wintering	No LSE	Not recorded in 2021/22 wintering surveys of Rosper Road Pools. There is no other suitable habitat for this species near the application site. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Bittern *Botaurus stellaris*	4 individuals – wintering	No LSE	Scoped out of assessment. There is no suitable habitat within the potential zone of influence of noise and visual disturbance arising from construction or operation.
Hen harrier *Circus cyaneus*	8 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal.
Golden plover *Pluvialis apricaria*	30,709 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal.
Bar-tailed godwit *Limosa lapponica*	2,752 individuals – wintering	No LSE	Peak count of 6 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak
Ruff *Philomachus pugnax*	128 individuals – passage	No LSE	Not recently recorded as a wintering species near the proposal.
Bittern *Botaurus stellaris*	2 booming males – breeding	No LSE	Scoped out of assessment. There is no suitable habitat within the potential zone of influence of noise and visual disturbance arising from construction or operation.
Marsh harrier *Circus aeruginosus*	10 females – breeding	No LSE	Scoped out of assessment. There is no suitable habitat within the potential zone of influence of noise and visual disturbance arising from construction or operation.
Avocet *Recurvirostra avosetta*	**64 pairs – breeding**	**LSE**	**Unspecified number of pairs breeding at Rosper Road Pools. Potential for construction noise disturbance of this species.**
Little tern *Sterna albifrons*	51 pairs – breeding	No LSE	Scoped out of assessment. There is no suitable habitat within the potential zone of influence of noise and visual disturbance arising from construction or operation.

The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

Migratory species	Count and season	Likely Significant Effect	Reason
Shelduck *Tadorna tadorna*	4,464 individuals – wintering	No LSE	Peak count of 12 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak
Knot *Calidris canutus*	28,165 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal.
Dunlin *Calidris alpina*	22,222 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.

Black-tailed godwit *Limosa limosa*	**1,113 individuals – wintering**	**LSE**	**Peak of 480 birds recorded at Rosper Road Pools. Potential for construction noise disturbance of this species.**
Redshank *Tringa totanus*	4,632 individuals – wintering	No LSE	Peak count of 8 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Knot *Calidris canutus*	18,500 individuals – passage	No LSE	Not recently recorded as a passage species near the proposal.
Dunlin *Calidris alpina*	20,269 individuals – passage	No LSE	Not recently recorded as a passage species near the proposal. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Black-tailed godwit *Limosa limosa*	**915 individuals – passage**	**LSE**	**Significant numbers of birds recorded in early and late wintering bird surveys at Rosper Road Pools. Birds may also be present during the passage period. Potential for construction noise disturbance of this species.**
Redshank *Tringa totanus*	7,462 individuals – passage	No LSE	Peak count of 8 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.

Assemblage qualification:
The site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season:

Interest Feature	Likely Significant Effect	Reason
Over 20,000 waterbirds (waterbirds as defined by the Ramsar Convention) in any season: In the non-breeding season, the area regularly supports 153,934 individual waterbirds	**LSE**	**Peaks of 30-74 curlew on nearby fields.** **Peak of 94 gadwall and 126 wigeon wintering on Rosper Road Pools.** **Potential for construction noise disturbance of these species.**

Humber Estuary Ramsar Site Interest Features:

Interest Feature	Likely Significant Effect	Reason
Criterion 1: near-natural estuary with the following component habitats:		
Dune systems and humid dune slacks	No LSE	Feature not found in or near application site
Estuarine waters	No LSE	Standard environmental measures to control pollution to the drains during construction phase will adequately minimise risk. As this is required for compliance with environmental legislation, and not specifically to mitigate for impacts on the SAC/ SPA/ Ramsar, this can be taken into account at the screening stage. Aerial deposition of pollutants will not exceed critical load thresholds for this habitat.
Intertidal mud and sand flats	No LSE	
Saltmarshes	**No LSE**	**Aerial deposition of NOx may exceed the process critical load thresholds for salt meadow habitats at North Killingholme Haven Pits SSSI.**
Coastal brackish/saline lagoons	No LSE	Feature not found in or near application site
Criterion 3: animal species important for maintaining the biological diversity of the biogeographic region:		
grey seals *Halichoerus grypus* at Donna Nook	No LSE	Feature not found in or near application site
natterjack toad *Bufo calamita* at Saltfleetby-Theddlethorpe	No LSE	Feature not found in or near application site
Criterion 5: regularly supports 20,000 or more waterbirds	**LSE**	**Peaks of 30-74 curlew on nearby fields. Peak of 94 gadwall and 126 wigeon wintering on Rosper Road Pools. Potential for construction noise disturbance of these species.**

Criterion 6: regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird in any season

Species	Count and season	Likely Significant Effect	Reason
Shelduck *Tadorna tadorna*	4,464 individuals – wintering	No LSE	Peak count of 12 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak
Golden plover *Pluvialis apricaria*	30,709 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal.
Knot *Calidris canutus*	28,165 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal.
Dunlin *Calidris alpina*	22,222 individuals – wintering	No LSE	Not recently recorded as a wintering species near the proposal. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Black-tailed godwit *Limosa limosa*	**1,113 individuals – wintering**	**LSE**	**Peak of 480 birds recorded at Rosper Road Pools. Potential for construction noise disturbance of this species.**
Bar-tailed godwit *Limosa lapponica*	2,752 individuals – wintering	No LSE	Peak count of 6 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak

Redshank *Tringa totanus*	4,632 individuals – wintering	No LSE	Peak count of 8 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Golden plover *Pluvialis apricaria*	17,996 individuals – passage	No LSE	Not recently recorded as a passage species near the proposal.
Knot *Calidris canutus*	18,500 individuals – passage	No LSE	Not recently recorded as a passage species near the proposal.
Dunlin *Calidris alpina*	20,269 individuals – passage	No LSE	Not recently recorded as a passage species near the proposal. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Black-tailed godwit ***Limosa limosa***	**915 individuals – passage**	**LSE**	**Significant numbers of birds recorded in early and late wintering bird surveys at Rosper Road Pools. Birds may also be present during the passage period. Potential for construction noise disturbance of this species.**
Redshank *Tringa totanus*	7,462 individuals – passage	No LSE	Peak count of 8 at Rosper Road Pools is <1% of the Humber Estuary 5-year mean peak. The proposal is approximately 1.5 km inland from the nearest intertidal mudflats at North Killingholme Marshes Foreshore. There is no potential for direct noise or visual disturbance to waterbirds feeding, roosting and loafing on the mudflats.
Criterion 8: migration path on which fish stocks, either within the wetland or elsewhere, depend:			
River lamprey *Lampetra fluviatilis*		No LSE	Feature not found in or near application site
Sea lamprey *Petromyzon marinus*		No LSE	

Humber Estuary Citations and Conservation Objectives

European Site Conservation Objectives for Humber Estuary Special Area of Conservation Site Code: UK0030170

With regard to the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats and habitats of qualifying species**
- **The structure and function (including typical species) of qualifying natural habitats**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which qualifying natural habitats and habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks

H1130. Estuaries

H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats

H1150. Coastal lagoons*

H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*

H2160. Dunes with *Hippophae rhamnoides*; Dunes with sea-buckthorn

S1095. *Petromyzon marinus*; Sea lamprey

S1099. *Lampetra fluviatilis*; River lamprey

S1364. *Halichoerus grypus*; Grey seal

* denotes a priority natural habitat or species (supporting explanatory text on following page)

This is a European Marine Site

This site is a part of the Humber Estuary European Marine Site. These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

*** Priority natural habitats or species**

Some of the natural habitats and species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Habitats Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 31 March 2014 to reflect the consolidation of the Habitats Regulations in 2017.

With regard to the natural habitats and/or species for which the site has been designated (the Qualifying Features listed below);

Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.

Subject to natural change, to maintain or restore:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;

European Site Conservation Objectives for Humber Estuary Special Protection Area Site Code: UK9006111

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A021 *Botaurus stellaris*; Great bittern (Non-breeding)
A021 *Botaurus stellaris*; Great bittern (Breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A081 *Circus aeruginosus*; Eurasian marsh harrier (Breeding)
A082 *Circus cyaneus*; Hen harrier (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Breeding)
A140 *Pluvialis apricaria*; European golden plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A151 *Philomachus pugnax*; Ruff (Non-breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage

This is a European Marine Site

This SPA is a part of the Humber Estuary European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 21 February 2019 (version 4). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

The Humber Estuary Ramsar site conservation objectives

Criterion 2: Conservation objective for the internationally important wetland, hosting an assemblage of threatened coastal and wetland invertebrates

Subject to natural change, maintain* the wetland hosting an assemblage of threatened coastal and wetland invertebrates in favourable condition, in particular:

- Saltmarsh communities
- Coastal lagoons

Criterion 3: Conservation objective for the internationally important wetland, supporting a breeding colony of grey seals *Halichoerus grypus*

Subject to natural change, maintain* the **wetland hosting a breeding colony of grey seals** in favourable condition, in particular:

- Intertidal mudflats and sandflats

Criterion 5: Conservation objective for the internationally important wetland, regularly supporting 20,000 or more waterfowl

Subject to natural change, maintain* the **wetland regularly supporting 20,000 or more waterfowl** in favourable condition, in particular:

- Intertidal mudflats and sandflats
- Saltmarsh communities
- Tidal reedbeds
- Coastal lagoons

Criterion 6: Conservation objective for the internationally important wetland, regularly supporting 1% or more of the individuals in a population of one species or sub-species of waterfowl

Subject to natural change, maintain* the **wetland regularly supporting 1% or more of the individuals in a population of one species or sub-species of waterfowl** in favourable condition, in particular:

- Intertidal mudflats and sandflats
- Saltmarsh communities
- Tidal reedbeds
- Coastal lagoons

Note: The Ramsar site conservation objectives for **criterion 2 & 3** interest focus on the condition of the habitats that support or host species of international importance. Information on the status of the species in terms of national and international population and distribution trends will be used to inform judgements made with regards to the management and protection of the sites.

The Ramsar site conservation objectives for **criterion 5 & 6** interest focus on the condition of the habitats that support the bird populations. This is in recognition of changes in bird populations that

may take place as a consequence of national or international trends or events. Annual counts for qualifying species will be used by Natural England in the context of five-year peak means together with other available information on the national and international population and distribution trends to inform judgements regarding the management and protection of the site.

- Maintain implies restoration if the feature is not currently in favourable condition.

Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas

VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

Appropriate Assessment under the Conservation of Habitats and Species Regulations 2017 (as amended)

1 Summary - Record of Appropriate Assessment in accordance with Habitats Regulations Guidance Note 1

1.1 Title of Plan or Project/Application

Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas.

1.2 Location of Plan or Project /Application

VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

Ordnance Survey Grid Reference: TA168172

1.3 International Nature Conservation Site

Humber Estuary Special Protection Area (SPA)

Humber Estuary Ramsar Site.

1.4 Nature/Description of Plan or Project/Application (Feather & Fletcher 2023)

The Proposed VPI Development will include the following components:

- ducting to connect GT1, GT2 and the auxiliary boilers to the VPI PCC plant;
- two PCC units (or 'trains'), each with associated blower, direct contact cooler, absorber,
- stack, stripper/ regenerator, thermal reclaimer unit and air-cooled heat exchangers;
- a CO2 vent stack for use during start up, shut down and emergencies only;
- CO2 compression facility with associated air-cooled heat exchangers;
- oxygen removal and dehydration facilities;
- CO2 metering and a pipeline connecting the PCC plant and compression facilities to the CO2 gathering network interface;
- on-site electrical substations;
- caustic, solvent and other chemical offloading and storage facilities;
- utilities (including chillers, steam generator, hydrogen package and air compressors)
- internal access roads;
- surface water drainage system.
- realignment of the existing ditch (South Killingholme Drain) within the VPI Site;
- construction and maintenance laydown areas; and
- a new site access from Rosper Road.

Date Appropriate Assessment recorded: 29 January 2024

1.4 This is a record of the appropriate assessment, required by Regulation 63 of the Habitats Regulations 2017, as amended, undertaken by North Lincolnshire Council in respect of the above plan/project. Having considered that the plan or project would be likely to have a significant effect on the Humber Estuary SPA and that the plan or project was not directly connected with or necessary to the management of

the site, an appropriate assessment has been undertaken of the implications of the proposal in view of the sites conservation objectives.

1.5 Natural England was consulted under Reg.63(3) on 02 May 2023 and replied on 16 May 2023 and subsequent occasions; comments expressed by the organisation have helped to formulate this version of the Habitats Regulations Assessment.

1.6 The opinion of the general public was not formally taken under Reg.63(4).

1.7 The sites' conservation objectives have been taken into account, including consideration of the situation for the site and information supplied by Natural England (See Appendix 3). The likely effects of the proposal on the international nature conservation interests for which the site was designated may be summarised as:

- Construction Noise Disturbance to Functionally Linked Land (Rosper Road Pools)
- Operational noise disturbance to functionally linked land (Rosper Road Pools);
- Construction Noise Disturbance to Functionally Linked Land (Terrestrial Fields)
- Operational Air Quality.

1.8 The assessment has concluded that the plan or project as proposed would not adversely affect the integrity of the site.

Signed  . Date 29 January 2024

Designation Natural Environment Policy Specialist

2 Introduction

2.2 The project assessed here is an application for planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas. The project will take place at VPI Immingham: a gas-fired CHP Plant located on Rosper Road in South Killingholme. The plant operates 24/7 to provide the electricity and steam that is critical to the operation of the neighbouring refineries and also to supply electricity to the National Grid.

2.1 North Lincolnshire Council has determined that:

2.2.1 The plan or project is not directly connected with, or necessary to, the management of the Humber Estuary Special Protection Area (SPA) and Ramsar site or Humber Estuary Special Conservation Area (SAC) for nature conservation.

2.2.2 The plan or project is likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Protection Area (SPA) and Ramsar site.

2.2.3 The plan or project is not likely to have a significant effect alone or in combination with other plans and projects on the Humber Estuary Special Conservation Area (SAC) for nature conservation.

2.3 Therefore, as the Competent Authority for the plan or project, North Lincolnshire Council must carry out an appropriate assessment in accordance with Regulation 63 of The Conservation of Habitats and Species Regulations 2017, as amended.

2.4 This document is the formal record of that process. North Lincolnshire Council has prepared this Habitats Regulations Assessment (HRA), which draws heavily on the information provided by the applicant in a shadow HRA (Atkinson 2023).

3 The Appropriate Assessment Process

3.1 The process is described in detail in Circular 06/2005. The Council has followed the Circular as closely as possible. The main stages in the process are as follows. Note that if there are no harmful effects on the features of the Humber Estuary, or if these effects can be prevented, not all of the stages will be required.

3.1.2.1 Determination of Likely Significant Effect

3.1.2.2 Appropriate Assessment with regard to site Conservation Objectives.

3.1.2.3 Determine whether there will be an Adverse Effect on the Integrity (AEOI) of the International Nature Conservation Sites with reference to all the relevant interest features.

3.1.2.4 Consider possible restrictions and conditions.

3.1.2.5 Consider alternative approaches.

3.1.2.6 Consider any Imperative Reasons of Over-riding Public Interest (IROPI).

3.2 Put simply, the Local Planning Authority can only adopt the plan if, at a given stage in 3.1 above, it can be ascertained that the proposal would not adversely affect the integrity of the International Nature Conservation Sites. Even if, at a late stage in considerations, IROPI and no alternatives were found to apply, compensatory measures would need to be provided.

3.3 Circular 06/2005 describes the key decision to be made as follows:

3.3.1 "In the light of the conclusions of the assessment of the project's effects on the site's conservation objectives, the decision-taker must determine whether it can ascertain that the proposal will not adversely affect the integrity of the site(s). The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified. It is not for the decision-taker to show that the proposal would harm the site, in order to refuse the application or appeal. It is for the decision-taker to consider the likely and reasonably foreseeable effects and to ascertain that the proposal will not have an adverse effect on the integrity of the site before it may grant permission. If the proposal would adversely affect integrity, or the effects on integrity are uncertain but could be significant, the decision-taker should not grant permission, subject to the provisions of regulations 49 and 53 as described below."

3.3.2 "... In the Waddenzee judgment, the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made **certain** that the plan or project will not adversely affect the integrity of the site. "*That is the case where no reasonable scientific doubt remains as to the absence of such effects*". Competent national authorities must be **"*convinced*"** that there will not be an adverse affect and where doubt remains as to the absence of adverse affects, the plan or project must not be authorised, subject to the procedure outlined in Article 6(4) of the EC Habitats Directive regarding imperative reasons of overriding public interest." – ODPM 2005.

Box 2- Government Guidance on the Appropriate Assessment (www.gov.uk accessed 20 May 2021)

You must carry out an appropriate assessment if you:

- decide there's a risk of a likely significant effect on a European site
- do not have enough evidence to rule out a risk

The assessment should be:

- more detailed and thorough than the screening check
- appropriate for the nature and complexity of the proposal and allow you to carry out the integrity test

Your appropriate assessment should:

- assess the likely significant effects of a proposal on the integrity of the site and its conservation objectives
- consider ways to avoid or reduce (mitigate) any potential for an 'adverse effect on the integrity of the site'

Test the integrity of the site
Your appropriate assessment must show whether an adverse effect on the integrity of the site from the proposal can be ruled out or not.

The integrity of the site will be adversely affected if a proposal could, for example:

- destroy, damage or significantly change all or part of a designated habitat
- significantly disturb the population of a designated species, for example, its breeding birds or hibernating bats
- harm the site's ecological connectivity with the wider landscape, for example, harm a woodland that helps to support the designated species from a nearby European site
- harm the site's ecological function, or its ability to survive damage, and reduce its ability to support a designated species
- change the site's physical environment, for example, by changing the chemical makeup of its soil, increasing the risk of pollution or changing the site's hydrology
- restrict access to resources outside the site that are important to a designated species, for example, food sources or breeding grounds
- prevent or disrupt restoration work, or the potential for future restoration, if it undermines the site's conservation objectives

You must be able to rule out all reasonable scientific doubt that the proposal would not have an adverse effect on the integrity of the site before you can allow the proposal to go ahead.

How to assess effects on site integrity
To carry out the assessment and apply the integrity test, you should consider:

- the ecological requirements, conservation objectives and the current conservation status (if known) of the site's designated features that might be affected by the proposal
- each potential effect on the European site, including the risk of combined effects with other proposals, and how they might impact on the site's conservation objectives
- the scale, extent, timing, duration, reversibility and likelihood of the potential effects
- how certain you are of the effects occurring
- mitigation measures that have been proposed or conditions you can attach to avoid or limit the effects
- how confident you can be that mitigation measures will be effective over the whole lifetime of the proposal - for example, the effects of construction, operation and decommissioning

You must consult the relevant SNCB and you should send them a copy of your draft appropriate assessment. You must consider the advice you get back. You should only disagree with the advice if you have a good reason.

You should keep a record of your final appropriate assessment, particularly if you're not following the SNCB's advice. You may need it as evidence if, for example, there's an appeal or freedom of information request.

If you're a local planning authority in England making a decision on planning applications, you should read the guide about appropriate assessments and legal implications on neighbourhood plans and permissions in principle.

Consider mitigation measures
As part of your appropriate assessment, you should consider any mitigation measures that have been included as part of the proposal to remove or reduce potential adverse effects.

You or the proposer can get advice on mitigation measures from the relevant SNCB or an ecological adviser.

You should assess what difference the mitigation measures would make to the effects of the proposal on the site. You must be sure that the mitigation will be effective. To do this, your assessment will need to show:

- how the measures would be implemented and monitored, and how long for
- how you would enforce the measures if you had to
- how certain you are that the measures would work to avoid or reduce effects on the site
- how long it will take for the measures to take effect
- the level of success you expect, or what changes you'd make if monitoring shows the measures may fail

You must make sure that any necessary mitigation measures are put in place now and not wait for adverse effects to happen first.

Attach conditions
If mitigation measures are needed to avoid adverse effects, you should attach conditions or take other necessary steps to make sure the measures are carried out.

You can make conditions flexible. For example, you could remove conditions if it's clear from monitoring that the risk of negative effects is lower than first thought. You should consult the relevant SNCB to make sure the new conditions are still effective.

You should be sure you can enforce the conditions if you need to, and that the proposer is capable of fulfilling them.

Design or method conditions
You can attach conditions to the design features or methods of a proposal to avoid damaging sensitive habitats.

For example, for construction work near a watercourse, you could include the condition of creating a bund to stop sediment or pollution getting into the watercourse.

Timing conditions
You can attach timing conditions to avoid work taking place during sensitive times of year or day.

For example, to avoid disturbing:

- birds, seals and bats during their breeding season
- birds on land or at sea when they're resting or feeding during the winter months

Monitoring conditions
You can attach monitoring conditions to check whether the mitigation measures are working as expected. You can use monitoring as an early warning to identify the risk of any new potential impacts.

Monitoring conditions should clearly state what action the proposer will need to take to make sure adverse effects do not occur if either the:

- impacts are likely to be greater than expected
- mitigation might not be working as expected

[…]

Decide if the proposal passes or fails the integrity test
A proposal will pass the integrity test if your appropriate assessment can show that there is no reasonable scientific doubt that the proposal will not have an adverse effect on the integrity of the site.

This means you can carry out, allow or adopt the proposal - after assessing any other factors that you need to consider - such as noise pollution, landscape damage or flood risk.

If the proposal fails the integrity test because you cannot rule out an adverse effect on site integrity, you must reject the proposal in its current form. This means permission is not granted. The work cannot go ahead or the plan cannot be adopted unless it can pass 3 legal tests and be granted an exception, known as a 'derogation'

4 Description of Development (Feather & Fletcher 2023)

The Proposed VPI Development will include the following components:

- ducting to connect GT1, GT2 and the auxiliary boilers to the VPI PCC plant;
- two PCC units (or 'trains'), each with associated blower, direct contact cooler, absorber,
- stack, stripper/ regenerator, thermal reclaimer unit and air-cooled heat exchangers;
- a CO2 vent stack for use during start up, shut down and emergencies only;
- CO2 compression facility with associated air-cooled heat exchangers;
- oxygen removal and dehydration facilities;
- CO2 metering and a pipeline connecting the PCC plant and compression facilities to the CO2 gathering network interface;
- on-site electrical substations;
- caustic, solvent and other chemical offloading and storage facilities;
- utilities (including chillers, steam generator, hydrogen package and air compressors)
- internal access roads;
- surface water drainage system.
- realignment of the existing ditch (South Killingholme Drain) within the VPI Site;
- construction and maintenance laydown areas; and
- a new site access from Rosper Road.

5 Summary of Likely Significant Effects on the International Nature Conservation Sites

5.1 Construction Noise Disturbance to Functionally Linked Land (Rosper Road Pools)
5.2 Operational Noise Disturbance to Functionally Linked Land (Rosper Road Pools).
5.3 Construction Noise Disturbance to Functionally Linked Land (Terrestrial Fields)
5.4 Operational Air Quality.

6 Construction Noise Disturbance to Functionally Linked Land (Rosper Road Pools)

6.1 Likely Significant Effect

6.1.1 The application site lies close to Rosper Road Pools- a site which is functionally linked to the Humber Estuary SPA and Ramsar Site. The pools support breeding avocets and wintering and passage black-tailed godwits, curlew, gadwall and wigeon in significant numbers. The avocets and godwits are listed as features of the SPA and Ramsar site, whereas the others are assemblage species.

6.1.2 Given the proximity of the Proposed VPI Development to Rosper Road Pools and therefore the potential for construction noise disturbance, Likely Significant Effects cannot be screened out.

6.2 Conservation Objectives

6.2.1 Where a likely significant effect has been identified, construction noise disturbance could prejudice the following elements of the Humber Estuary SPA conservation objectives in relation to breeding avocet, wintering and passage black tailed godwit and the assemblage of wintering and passage waterbirds:

- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

6.3 Further Analysis

6.3.1 The applicant has carried out detailed noise modelling of likely construction noise from the proposal alone and has compared the results with the baseline noise levels recorded at Rosper Road Pools (Atkinson 2023). The baseline noise modelling was undertaken at two locations within Rosper Road Pools that were chosen to be representative of habitats that supported important numbers of SPA/ Ramsar waterbirds that were considered functionally linked to the Humber Estuary. The noisiest activities during construction are associated with the site clearance works (vehicle movements etc.) as there will be no driven impact piling of foundations for the buildings on site; all piling will be done using Continuous Flight Auger (CFA) rigs, which do not produce the 'peaky' noise output that can be disruptive to birds. The modelled noise levels at the nearest part of Rosper Road Pools are in the 60 – 65 dB LAeq,T range and <60 dB LAeq,T across the open lagoon habitat (ibid).

6.3.2 Natural England requested that additional assessment work was undertaken to review the predicted changes in construction noise against ambient noise and suggested that a 3 dBA 'rule of thumb' change in noise level compared to ambient noise represented a suitable threshold above which any changes could disturb birds. A 3 dBA increase is a concept used in acoustics and sound engineering to describe a doubling of sound energy using a logarithmic scale. It is therefore not an absolute threshold above which disturbance to birds would occur, but has been applied by the applicant as a screening threshold above which disturbance to birds may occur, and therefore requires further assessment.

6.3.3 The modelling demonstrates that there are no predicted exceedances of Natural England's suggested 3 dBA 'rule-of-thumb' change in noise level threshold at the identified locations in Rosper Road Pools (ibid).

6.3.4 When considering the application alone, it is therefore concluded that the change in noise levels during construction is not at a magnitude that would be expected to cause significant disturbance to waterbirds using Rosper Road Pools for breeding, feeding or roosting at any time of year, and therefore there will be no adverse effects on the integrity of the Humber Estuary SPA/ Ramsar.

6.4 In-combination Effects

6.4.1 The applicant has carried out detailed noise modelling (Atkinson 2023), taking into account potential in-combination construction noise with:

- the proposed Phillips 66 Development (PA/2023/422);
- the proposed ABP Land Adjacent to the Westgate Entrance, Port of Immingham (With Buildings Option) (PA/2022/1223);
- the proposed Gigastack project immediately north of Rosper Road Pools (RRP): a 100MW hydrogen electrolyser together with an underground electrical cable connection to the Hornsea Two onshore substation, water discharge and a hydrogen export pipeline to the Humber Refinery (EIA

Scoping request received- PA/SCO/2022/13);

- the proposed Viking CCS Carbon Dioxide Pipeline Order (Planning Inspectorate ref EN070008)

Results are summarised below:

Proposal	Will VPI proposal act in combination with this proposal in terms of construction noise disturbance to RRP?	Notes
Phillips 66 Development (PA/2023/422)	No	There are no changes exceeding 3 dBA.
ABP Land Adjacent to the Westgate Entrance, Port of Immingham (With Buildings Option) (PA/2022/1223)	No	ABP project alone may require loud piling that could cause disturbance. This project will need to mitigate its noise levels. VPI construction noise will not materially add to this noise.
Gigastack project PA/SCO/2022/13	No	This proposal site is much nearer to RRP than VPI is and is much more likely to cause disturbance alone. This project will need to mitigate its noise levels. VPI construction noise will not materially add to this noise.
Viking CCS Carbon Dioxide Pipeline Order (Planning Inspectorate ref EN070008)	No	The two projects will need to time their construction activities so they are not overlapping by virtue of their partially shared site boundaries.

6.4.2 As set out in Table 6 of the submitted Report to Inform Habitats Regulations Assessment no other plans or projects have been identified that would act in combination with the VPI proposal in terms of construction noise disturbance to functionally linked land (Rosper Road Pools)(Atkinson 2023).

6.4 Measures taken to avoid, minimise or mitigate effects

6.3.1 None required.

6.5 Determination of AEOI.

6.5.1 There will be no adverse effect on the Integrity of the Humber Estuary SPA and Ramsar site arising from construction noise disturbance to functionally linked land (Rosper Road Pools).

7 Operational noise disturbance to functionally linked land (Rosper Road Pools).

7.1 Likely Significant Effect

7.1.1 Given the proximity of the proposed Gigastack (PA/SCO/2022/13) and ABP Westgate projects (PA/2022/1223) to Rosper Road Pools and the potential for simultaneous operation with the Proposed VPI Development, there is potential for in-combination noise/visual disturbance to Rosper Road Pools. The pools support breeding avocets and wintering and passage black-tailed godwits, curlew, gadwall and wigeon in significant numbers. The avocets and godwits are listed as features of the SPA and Ramsar site, whereas the others are assemblage species.

7.2 Conservation Objectives

7.2.1 Where a likely significant effect has been identified, construction noise disturbance could prejudice the following elements of the Humber Estuary SPA conservation objectives in relation to breeding avocet, wintering and passage black tailed godwit and the assemblage of wintering and passage waterbirds:

- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

7.3 In-combination Effects

7.3.1 The applicant has carried out detailed noise modelling (Atkinson 2023), taking into account potential in-combination operational noise with:

- the proposed Phillips 66 Development (PA/2023/422);
- the proposed ABP Land Adjacent to the Westgate Entrance, Port of Immingham (Open storage Option) (PA/2022/1223);
- the proposed Gigastack project immediately north of Rosper Road Pools (RRP): a 100MW hydrogen electrolyser together with an underground electrical cable connection to the Hornsea Two onshore substation, water discharge and a hydrogen export pipeline to the Humber Refinery (EIA Scoping request received- PA/SCO/2022/13);
- the proposed Viking CCS Carbon Dioxide Pipeline Order (Planning Inspectorate ref EN070008)

Results are summarised below:

Proposal	**Will VPI proposal act in combination with this proposal in terms of operational noise disturbance to RRP?**	**Notes**
Phillips 66 Development (PA/2023/422)	No	There are no changes exceeding 3 dBA.
ABP Land Adjacent to the Westgate Entrance, Port of Immingham (Open storage option) (PA/2022/1223)	No	ABP project alone may create load noises that could cause disturbance. No changes exceeding 3 dBA are modelled at present. This project will need to mitigate its noise levels. VPI operational noise will not materially add to this noise.
Gigastack project PA/SCO/2022/13	No	This proposal site is much nearer to RRP than VPI is and is much more likely to cause disturbance alone. This project will need to mitigate its noise levels. VPI operational noise will not materially add to this noise.
Viking CCS Carbon Dioxide Pipeline Order (Planning Inspectorate ref EN070008)	No	There are no changes exceeding 3 dBA.

7.3.2 As set out in Table 6 of the submitted Report to Inform Habitats Regulations Assessment no other plans or projects have been identified that would act in

combination with the VPI proposal in terms of operational noise disturbance to functionally linked land (Rosper Road Pools)(Atkinson 2023).

7.4 Measures taken to avoid, minimise or mitigate effects

7.4.1 None required.

7.5 Determination of AEOI.

7.5.1 There will be no adverse effect on the Integrity of the Humber Estuary SPA and Ramsar site arising from operational noise disturbance to functionally linked land (Rosper Road Pools).

8 Construction Noise Disturbance to Functionally Linked Land (Terrestrial Fields)

8.1 Likely Significant Effect

8.1.1 The application site lies close to terrestrial fields on Killingholme Marsh that are functionally linked to the Humber Estuary SPA and Ramsar Site. Peaks of 30-74 curlew (an assemblage species) have recently been recorded in these fields. Disturbance of these birds would not be fully mitigated by the provision of alternative habitat at Halton Marsh, as repeated disturbance events could occur, with a variety of effects on the birds.

8.1.2 Given the proximity of the Proposed VPI Development to the fields and therefore the potential for construction noise disturbance, Likely Significant Effects cannot be screened out.

8.2 Conservation Objectives

8.2.1 Where a likely significant effect has been identified, construction noise disturbance could prejudice the following elements of the Humber Estuary SPA conservation objectives in relation to the assemblage of wintering and passage waterbirds (Curlew in particular):

8.2.1.1 The population of each of the qualifying features, and,

8.2.1.2 The distribution of the qualifying features within the site.

8.3 Further Analysis

8.3.1 The applicant has carried out detailed noise modelling of likely construction noise from the proposal alone and has compared the results with the baseline noise levels recorded at the terrestrial fields (Atkinson 2023). The baseline noise modelling was undertaken at two locations within the fields that were chosen to be representative of habitats that supported important numbers of SPA/ Ramsar waterbirds that were considered functionally linked to the Humber Estuary. The noisiest activities during construction are associated with the site clearance works (vehicle movements etc.) as there will be no driven impact piling of foundations for the buildings on site; all piling will be done using Continuous Flight Auger (CFA) rigs, which do not produce the ‘peaky’ noise output that can be disruptive to birds. The modelled noise levels at the nearest fields are in the 60 – 65 dB LAeq,T range and <60 dB LAeq,T across the majority of the field. (ibid).

8.3.2 The modelling demonstrates that there are no predicted exceedances of Natural England’s suggested 3 dBA ‘rule-of-thumb’ change in noise level threshold at the nearest field to the VPI development (see section 6.3 for the explanation of this approach). Further away there could be a 3 dBA increase,

but both baseline and predicted levels would be too quiet to produce likely disturbance effects.

8.3.3 When considering the application alone, it is therefore concluded that the change in noise levels during construction is not at a magnitude that would be expected to cause significant disturbance to waterbirds using terrestrial fields east of Rosper Road for breeding, feeding or roosting at any time of year, and therefore there will be no adverse effects on the integrity of the Humber Estuary SPA/ Ramsar.

8.4 In-combination Effects

8.4.1 The applicant has carried out detailed noise modelling (Atkinson 2023), as described in section 6.4 above.

Results are summarised below:

Proposal	Will VPI proposal act in combination with this proposal in terms of construction noise disturbance to terrestrial fields?	Notes
Phillips 66 Development (PA/2023/422)	No	There are no changes exceeding 3 dBA (except where noise levels will be very low)
ABP Land Adjacent to the Westgate Entrance, Port of Immingham (With Buildings Option) (PA/2022/1223)	No	ABP project alone may require loud piling that could cause disturbance. This project will need to mitigate its noise levels. VPI construction noise will not materially add to this noise.
Gigastack project PA/SCO/2022/13	No	This proposal site will occupy much of the terrestrial fields. Loss of habitat has been mitigated at Halton Marsh. The Gigastack project will need to mitigate its noise levels. VPI construction noise will not materially add to this noise.
Viking CCS Carbon Dioxide Pipeline Order (Planning Inspectorate ref EN070008)	No	The two projects will need to time their construction activities so they are not overlapping by virtue of their partially shared site boundaries.

8.4.2 As set out in Table 6 of the submitted Report to Inform Habitats Regulations Assessment no other plans or projects have been identified that would act in combination with the VPI proposal in terms of construction noise disturbance to functionally linked land (Terrestrial Fields)(Atkinson 2023).

8.5 Measures taken to avoid, minimise or mitigate effects

8.5.1 None required.

8.6 Determination of AEOI.

8.6.1 There will be no adverse effect on the Integrity of the Humber Estuary SPA and Ramsar site arising from construction noise disturbance to functionally linked land (Terrestrial Fields).

9 Operational Air Quality

9.1 Likely Significant Effect

9.1.1 Potential effects in relation to the deposition of oxides of nitrogen (NOx) have been identified in relation to “wetland and reedbed” and “pioneer, low, mid upper saltmarshes” habitats at North Killingholme Haven Pits SSSI and Killingholme Foreshore, part of the Humber Estuary SAC, SPA and Ramsar site.

9.1.2 The modelled increase in the annual average oxides of nitrogen (NOx) process contribution (PC) at the Humber Estuary due to the proposed development represents +4.7% of the air quality assessment level (AQAL).

9.1.3 A likely significant effect could not be excluded at the screening stage.

9.2 Conservation Objectives

9.2.1 Where a likely significant effect has been identified excessive nitrogen deposition could prejudice the following elements of the Humber Estuary SAC conservation objectives in relation to Atlantic Salt Meadows at North Killingholme Haven Pits SSSI and Killingholme Foreshore,

9.2.1.1 The extent and distribution of qualifying natural habitats and habitats of qualifying species;

9.2.1.2 The structure and function (including typical species) of qualifying natural habitats;

9.2.1.3 The structure and function of the habitats of qualifying species;

9.2.1.4 The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;

9.2.1.5 The populations of qualifying species, and,

9.2.1.6 The distribution of qualifying species within the site.

9.3 Further Analysis (adapted from Atkinson 2023)

9.3.1 The applicant has supplied the findings of an air quality impact assessment in ES Chapter 6: Air Quality (ES Volume 1), with a detailed operational phase assessment presented in Appendix 6B (ES Volume II). The magnitude of air quality impacts at sensitive ecological receptors has been quantified through detailed dispersal modelling of the pollutants emitted from the main stack, and has been considered in the context of relevant critical levels and critical loads for designated ecological sites.

9.3.2 There are two measures of particular relevance when considering the potential for significant effects on habitats to result from changes in air quality arising from the Proposed VPI Development. The first is the concentration of oxides of nitrogen (known as NOx) in the atmosphere. The main importance is as a source of nitrogen (N), which is then deposited on adjacent habitats either directly (known as dry deposition, including directly onto the plants themselves) or washed out in rainfall (known as wet deposition). The deposited nitrogen can then have a range of effects, primarily growth stimulation or inhibition, but also biochemical and physiological effects such as changes to chlorophyll content. NOx may also have some effects which are un-related to its role in total nitrogen intake (such as the acidity of the gas

potentially affecting lipid biosynthesis) but the evidence for these effects is limited and they do not appear to occur until high annual concentrations of NOx are reached.

9.3.3 The guideline atmospheric concentration of NOx advocated by Government for the protection of vegetation is 30 micrograms per cubic metre (µgm-3), known as the Critical Level (Hall et al. 2006)). This is driven by the role of NOx in N deposition and in particular in growth stimulation and inhibition. If the total NOx concentration in a given area is below the critical level, it is unlikely that N deposition will be an issue, unless there are other sources of nitrogen (e.g. ammonia). If it is above the critical level then local N deposition from NOx could be an issue and should be investigated.

9.3.4 The second important metric is a direct determination of the rate of the resulting N deposition, which is habitat specific because different habitats have varying tolerance to nitrogen. For many habitats, there are measurable effects in the form of published dose-response relationships for N deposition, which do not exist for NOx. Unlike NOx, the N deposition rate below which current evidence suggests that effects should not arise is different for each habitat. The rate (known as the Critical Load) is provided on the UK Air Pollution Information System website (www.apis.ac.uk) and is expressed as a quantity (kilograms) of nitrogen over a given area (hectare) per year (kg N/ha/yr). More recently, there has also been research compiled that investigates N dose-response relationships in a range of habitats (Caporn et al. 2016).

9.3.5 Killingholme Foreshore

9.3.5.1 The applicant's air quality impact assessment has modelled a number of receptors within the Humber Estuary SAC/ SPA/ Ramsar/ SSSI that are sensitive to NOx emissions. The nearest to the Proposed VPI Development comprises pioneer lower and lower-mid saltmarshes on Killingholme Foreshore (receptor OE1e in ES Appendix 6B), which is approximately 1.8 km east of the Proposed VPI Development close to 'The Lookout'. Here, the process contribution resulting from the maximum annual mean NOx emissions is 4.4% of the critical level for the Humber Estuary SAC/ SPA/ Ramsar. This therefore exceeds the threshold at which an adverse effect on the designated habitats (and therefore the species they support) may occur, and indicates that further assessment is required.

9.3.5.2 However, further analysis reveals that, at this location, frequent tidal inundation is likely to flush out nitrogen from the atmosphere, whilst adding significantly greater nutrient inputs from estuarine waters. Furthermore, the SSSI unit in question was recently assessed as being in favourable condition, despite existing high levels of nitrogen deposition. Overall, this foreshore saltmarsh habitat will not be adversely affected by the small increase in N deposition resulting from the operation of the Proposed VPI Development alone.

9.3.6 Upper Saltmarsh within North Killingholme Haven Pits SSSI

9.3.6.1 This area is characterised by:

- a relatively small area of saltmarsh (<0.3% of the estuary total);
- saltmarsh in unfavourable condition due to coastal erosion:

9.3.6.2 The relatively small area of saltmarsh (<0.3% of the estuary total) in SSSI unit 95 is classed as being in unfavourable condition due to coastal squeeze. The Humber Flood Risk Management Strategy is delivering a programme of managed realignment to offset losses to coastal squeeze over the next 50 years (E. Brading, pers. comm.).

9.3.6.3 It is therefore reasonable to conclude that the small increases in N deposition at this location would not result in any significant changes to the extent or distribution of saltmarsh within the Humber Estuary such that the conservation objectives would be compromised.

9.3.7 Wetland and reedbed within North Killingholme Haven Pits SSSI

9.3.7.1 This area is characterised by:

- wetland and reedbed habitat in favourable condition, meeting its targets for habitats supporting qualifying species of waterbirds;
- habitat that does not exhibit significant vulnerability to nitrogen deposition.

9.3.7.2 It is therefore reasonable to conclude that the small increases in N deposition at this location would not result in any significant changes to the extent or distribution of reedbed within the Humber Estuary such that the conservation objectives would be compromised.

9.3.8 Overall assessment: project alone

9.3.8.1 It is therefore concluded that the effects of changes in air quality (arising from nitrogen deposition) from operation of the Proposed VPI Development alone will not result in an adverse effect on the integrity of the Humber Estuary SAC/ SPA/ Ramsar.

9.4 In-combination Effects

9.4.1 The applicant has modelled nitrogen deposition due to the VPI proposal in-combination with the Phillips 66 Development (PA/2023/422). The findings presented are very similar to those for the VPI development alone.

9.4.2 It is therefore concluded that the in-combination effects of changes in air quality (arising from nitrogen deposition) from operation of the Proposed VPI Development with the Proposed Phillips 66 Development will not result in an adverse effect on the integrity of the Humber Estuary SAC/ SPA/ Ramsar.

9.5 Measures taken to avoid, minimise or mitigate effects

9.5.1 None required.

9.6 Determination of AEOI.

9.6.1 There will be no adverse effect on the Integrity of the Humber Estuary SPA and Ramsar site arising from operational air quality.

9 Register of conditions or restrictions required

9.1 None required.

10 Overall determination of AEOI.

10.1 Project without restrictions or conditions.

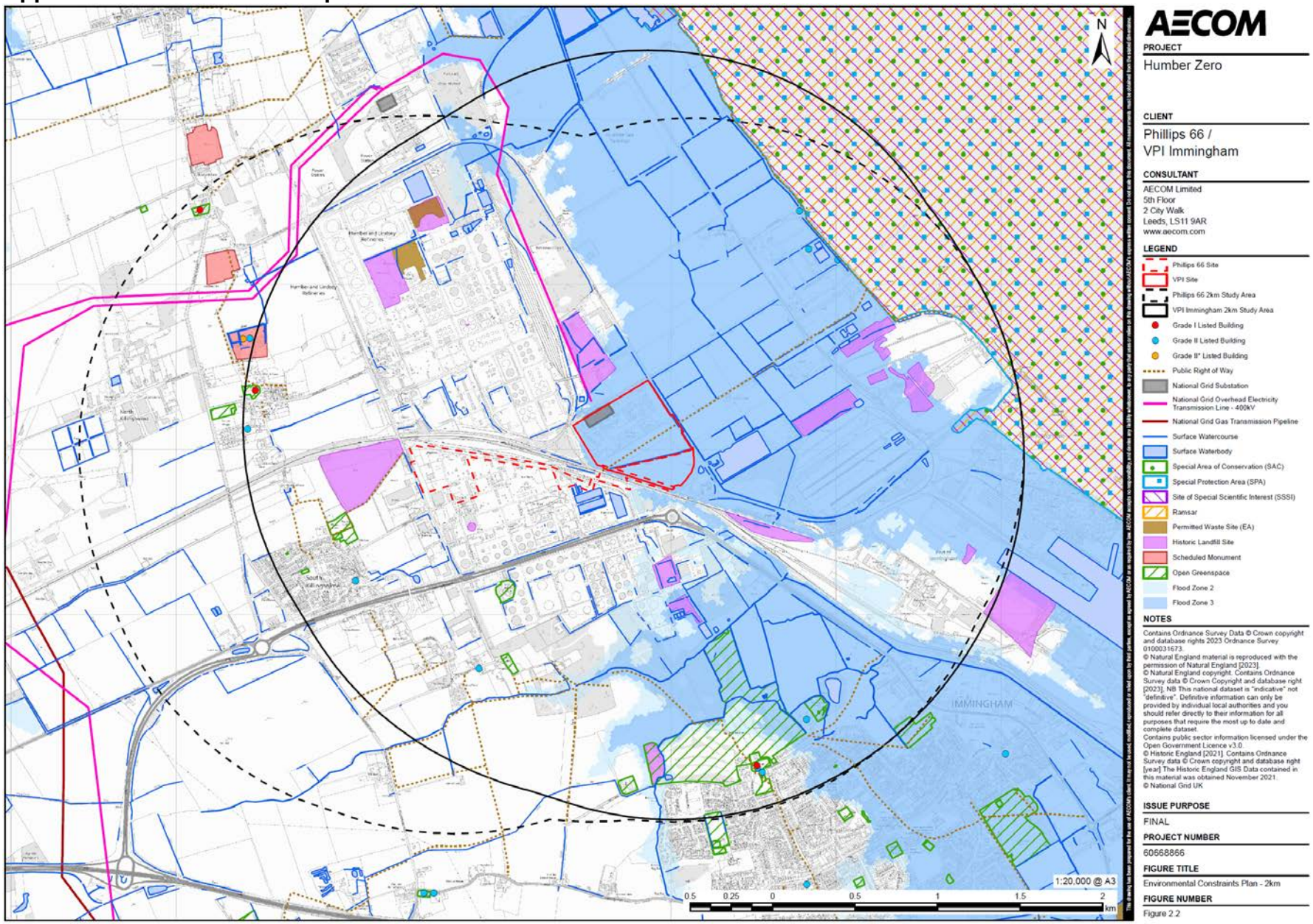
10.1.1 The proposed project is not necessary for the management of the Humber Estuary SAC, SPA or Ramsar site.

10.1.2 The proposed project would have a likely significant effect on the Humber Estuary SPA.

10.1.3 Overall, it is possible to ascertain that the proposal will not have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site alone or in combination with other plans or projects.

Appendices

Appendix 1 - Location of Proposals in relation to the International Nature Conservation Site



AECOM

PROJECT
Humber Zero

CLIENT
Phillips 66 /
VPI Immingham

CONSULTANT
AECOM Limited
5th Floor
2 City Walk
Leeds, LS11 9AR
www.aecom.com

LEGEND
- Phillips 66 Site
- VPI Site
- Phillips 66 2km Study Area
- VPI Immingham 2km Study Area
- Grade I Listed Building
- Grade II Listed Building
- Grade II* Listed Building
- Public Right of Way
- National Grid Substation
- National Grid Overhead Electricity Transmission Line - 400kV
- National Grid Gas Transmission Pipeline
- Surface Watercourse
- Surface Waterbody
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Ramsar
- Permitted Waste Site (EA)
- Historic Landfill Site
- Scheduled Monument
- Open Greenspace
- Flood Zone 2
- Flood Zone 3

NOTES
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ISSUE PURPOSE
FINAL

PROJECT NUMBER
60668866

FIGURE TITLE
Environmental Constraints Plan - 2km

FIGURE NUMBER
Figure 2.2

Appendix 2 References

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Critical Loads and Critical Levels - a guide to the data provided in APIS | Air Pollution Information System

Appendix 3 - Consultee responses

Date: 16 May 2023
Our ref: 427468
Your ref: PA/2023/421

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Rebecca Leggott
North Lincolnshire Council
Economy and Environment
Church Square House
30-40 High Street
Scunthorpe
DN15 6NL
planning@northlincs.gov.uk

BY EMAIL ONLY

Dear Rebecca Leggott

Planning consultation: Construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, coding equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas
Location: VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

Thank you for your consultation on the above dated 27 March 2023 which was received by Natural England on the same date.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

SUMMARY OF NATURAL ENGLAND'S ADVICE

FURTHER INFORMATION REQUIRED TO DETERMINE IMPACTS ON DESIGNATED SITES

As submitted, the application could have potential significant effects on Humber Estuary Special Protection Area (SPA)/Special Area of Conservation (SAC)/Ramsar site, Humber Estuary Site of Special Scientific Interest (SSSI), and North Killingholme Haven Pits SSSI. Natural England requires further information in order to determine the significance of these impacts and the scope for mitigation. The following information is required:

- Further assessment of potential construction and operational phase visual impacts to SPA/Ramsar birds;
- Further assessment of potential construction and operational phase noise impacts to SPA/Ramsar birds;
- Further assessment of potential operational phase air quality impacts.

Without this information, Natural England may need to object to the proposal.

Please re-consult Natural England once this information has been obtained.

Natural England's further advice on designated sites/landscapes and advice on other issues is set out below.

Additional Information required

THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 (AMENDED)

Internationally designated sites

Natural England notes that the Habitats Regulations Assessment (HRA) has not been produced by your authority, but by the applicant. As competent authority, it is your responsibility to produce the HRA and be accountable for its conclusions. We provide the advice enclosed on the assumption that your authority intends to adopt this HRA to fulfil your duty as competent authority

Natural England notes that an appropriate assessment of the proposal has been undertaken in accordance with regulation 63 of the Conservation of Species and Habitats Regulations 2017 (as amended). Natural England is a statutory consultee on the appropriate assessment stage of the Habitats Regulations Assessment process, and a competent authority should have regard to Natural England's advice.

The appropriate assessment concludes that your authority is able to ascertain that the proposal will not result in adverse effects on the integrity of any of the sites in question.

Having considered your assessment, and the measures proposed to mitigate for any adverse effects, Natural England's advice is that your assessment is not sufficiently rigorous or robust to justify this conclusion and therefore **it is not possible** to ascertain that the proposal will not result in adverse effects on the integrity of the sites in question. We advise that your authority should not grant planning permission at this stage.

We advise that the following additional work on the assessment is required to enable it to be sufficiently rigorous and robust. Natural England should be re-consulted once this additional work has been undertaken and the HRA has been revised.

Potential air quality impacts

Natural England welcomes the *Report to Inform Habitats Regulations Assessment* ('HRA') (dated February 2023) and the air quality assessment in *ES Appendix 6B: Operation Stage Assessment* ('Appendix 6B') (no date), submitted in support of this application. Natural England provides the following advice on the information provided.

Screening of likely significant effects

We note that the HRA rules out likely significant effects from potential construction phase air quality impacts (both alone and in-combination). On the basis of the information provided, Natural England concurs with this view. However, we provide the following advice on potential operational phase impacts.

No information has been provided on how the ecological receptors have been selected or how the habitat information has been determined. For example, OE2 receptor, the grid reference provided does not fall within the designated site. We highlight that Appendix 6B, Table 6B.11 describes North Killingholme Haven Pits as 'northern wet heath' (OE1d) and 'Pioneer, low, mid upper saltmarshes' (OE2), however, the Defra Priority Habitat Inventory (PHI) shows the habitats as saline lagoon and deciduous woodland. In addition, low and medium altitude hay meadow does not form part of the Humber Estuary designations. Please provide further explanation and justification for the locations selected.

Section 5.31 of the HRA states that '*All impacts are considered to be insignificant at the ecological receptors as they do not exceed the 1% screening threshold for Process Contributions (PC)… except for annual average nitrogen oxides NOx at the worst-case impacted receptor (Humber Estuary (OE1))*'. However, we note that in Appendix 6B, tables 6B.29 – 6B.32, the percentage

change in Process Contributions over the baseline is greater than 1% of the environmental benchmark for the following receptors:

- OE1 (4.7%) and OE2 (1.7%) for Nitrogen oxides (NOx)
- OE1 (3.5%) and OE2 (1.4%) for ammonia (NH_3)
- OE1d (1.5%) and OE1e (1.5%) for nitrogen deposition

We assume the justification to rule out likely significant effects from nitrogen deposition comes from section 6B.6.10 in Appendix 6B which states '*Impacts at OE1d and OE1e are both 1.5% and given that the background concentrations are already significantly exceeding the critical load, the impacts are still considered to be 'negligible' and the effect on the receptor 'not significant'*.'

Natural England does not accept the justification that if background concentrations are already in exceedance of the critical load, then impacts are automatically considered to be negligible. The ruling of the Dutch Nitrogen cases determined that in circumstances where the conservation status is unfavourable '*...the possibility of authorising activities which may subsequently affect the ecological situation of the sites concerned seems necessarily limited*'. Therefore, further assessment to determine whether additional pollutant input may lead to impacts to designated habitats is required.

It is not clear why potential impacts from NOx at North Killingholme Haven Pits SSSI (which is part of the Humber Estuary SPA/Ramsar) have not been assessed further.

Furthermore, it is not clear why likely significant effects from NH_3 have been screened out. Section 6B.6.8 of Appendix 6B states that the potential impacts from NH_3 are *'considered to be 'negligible' and therefore the effects are 'not significant'.* However, Natural England does not agree that a Process Contribution of 3.5% of the environmental benchmark is not significant.

Therefore, we advise that it is not possible to rule out likely significant effects from the above impact pathways at the screening stage.

Appropriate Assessment

We note that the potential impacts of NOx emissions at receptor OE1e has been assessed at the appropriate assessment stage and the potential impacts of nitrogen deposition is also discussed. We note the commentary in sections 6.4 – 6.6 of the HRA on the interacting effects of NOx and nitrogen deposition. We note that although the annual average Predicted Environmental Concentration (PEC) of NOx is less than 100% of the Air Quality Assessment Level (AQAL), the PEC of nitrogen deposition is greater than 100% of the AQAL.

It is not clear whether the appropriate assessment is assessing potential impacts of NOx, nitrogen deposition, or both. For example, sections 6.11 and 6.12 provide justification as to why there would be no adverse effects on integrity to the Humber Estuary saltmarsh habitats from NOx emissions. Whereas, sections 6.9 and 6.10 provide justification as to why there would be no adverse effects on integrity to the Humber Estuary SAC saltmarsh habitats from nitrogen deposition.

To justify why a higher critical load of nitrogen deposition would be appropriate, we note section 6.10 of the HRA states that saltmarsh habitat on the Humber Estuary is subject to frequent inundation, and therefore this will reduce the impact of nitrogen from atmosphere on the vegetation. Whilst we do agree that inundation will reduce impacts, advice on Air Pollution Information System (APIS) also states that pioneer low – mid saltmarsh areas are more resilient to nitrogen deposition than the mature upper areas, and we advise the higher marshes will be subjected to the least amount of tidal influence. Therefore, further clarification should be provided on the types of Humber Estuary SAC saltmarsh present within proximity of the proposed development, as this will further inform whether the upper critical load can be relied upon.

Natural England advises that both potential impacts from NOx emissions and nitrogen deposition should be fully assessed at the appropriate assessment stage. The assessment should make it

clear which impact pathways are being assessed, and the outcomes of the site integrity test should be set out clearly.

Potential disturbance to SPA birds using Humber Estuary SPA/Ramsar and functionally linked land during construction and operation

Natural England notes from tables 10-25 of *ES Appendix 13A: Ecological Baseline Report* (January 2023) that significant numbers of SPA birds were recorded during the wintering and passage bird surveys on functionally linked land between Rosper Road and the Humber Estuary, as well as within the boundary of the Humber Estuary European Sites. Additionally, we note, from the information provided, that there are known breeding avocet at Rosper Road Pools.

Visual impacts

Your assessment concludes that likely significant effects from visual impacts have been screened out from this project alone. On the basis of the information provided, Natural England concurs with this view.

We note that the in-combination assessment rules out adverse impacts on integrity from visual impacts in-combination with other projects, including 'Land Adjacent to the Westgate Entrance, Port of Immingham (Open Storage Option)' and 'Project Gigastack'. However, we note the in-combination assessment assesses the VPI development with each neighbouring development individually and there is no consideration of the cumulative effects of all the developments acting together. For example, no assessment has been undertaken to assess the impacts of bird usage from structures on three sides of Rosper Road Pools. Therefore, we advise this should be further assessed in the HRA.

Noise impacts

We note that likely significant effects from noise disturbance during both construction and operational phases have been screened out for all locations – (i) functionally linked land at Rosper Road Pools, (ii) functionally linked land at adjacent terrestrial fields, and (iii) habitats within the SPA/Ramsar boundary.

On the basis of the information provided, Natural England concurs with the view that likely significant effects from potential noise impacts during both construction and operational phases to (iii) habitats within the SPA/Ramsar boundary can be ruled out due to distance from the proposed development. However, we have the following comments regarding (i) functionally linked land at Rosper Road Pools and (ii) functionally linked land at adjacent terrestrial fields.

We note that the HRA states, in numerous sections, that *'Studies indicate that noise levels >84 dBA typically elicit a flight response in birds and the same research recommends that construction noise levels are kept below 70 dB to avoid excessive disturbance of birds'.* However, it is not specified which studies this refers to. We think that this may be the 'Bird Disturbance Toolkit'. As we advised for the VPI Immingham Development Consent Order, Natural England considers this Toolkit as a relatively simplistic approach. The Institute of Estuarine and Coastal Studies (IECS) carried out a literature review of bird disturbance and reported (in 2009) that there was little evidence available on the impacts of construction disturbance to birds. On this basis, it is unclear how the very specific noise and distance 'triggers' for individual species of birds were derived for the subsequent toolkit.

It is also worth noting that the Humber Estuary is an SPA and therefore no construction works have been carried out that would cause significant disturbance to SPA birds, so any evidence taken from this site would be limited. Monitoring work associated with construction disturbance undertaken on this site has either been carried out outside the sensitive season; when there are low numbers of birds present; or when the competent authority has already determined that the proposed works will not adversely affect the integrity of the Humber Estuary designated site.

Natural England advises that caution should be exercised when attempting to define a threshold

based on noise levels alone. Other factors such as noise 'peakiness', including rise time of a noise signal and the frequency content of the noise source, should also be expected to affect bird behaviour. We advise that generic noise threshold levels are unlikely to offer a suitable approach for assessing the potential effects of noise on birds. Instead, we suggest that the assessment should determine if the predicted construction/operational noise levels are greater than the current background levels, using a 3dB(A) rule-of-thumb to determine significance.

We advise that the baseline noise levels should be established at the locations of sensitive ecological receptors and compared to the predicted noise levels. The assessment should set the sensitive receptors in the context of the existing noise environment – i.e. how noise levels will change, including the type of noise, such as consistent or sudden loud bangs etc. We note that as part of the VPI Immingham OCGT DCO the ambient range of noise levels across these fields were assessed as being 61dB LAeq and 51dB LAF90 along Rosper Road at the closest point of the field nearest to the proposed VPI Development, to 48dB LAeq and 43/46dB LAF90 along the eastern edge.

We note that the HRA and Chapter 13 refer to *ES Chapter 7: Noise and Vibration* (no date) for further detailed noise modelling assessment. However, we note 7.1.1 of Chapter 7 states that *'This chapter assesses the impact of noise on residential and other human receptors. The assessment of noise impacts on relevant ecological receptors is presented in Chapter 13: Ecology and Nature Conservation (ES Volume I).'* Therefore, it is unclear if the noise modelling has been undertaken in an ecological context.

We note that section 7.5.2 of *ES Chapter 7: Noise and Vibration* (no date) includes measures to mitigate noise impacts, although we note this is primarily focussed on human receptors. We advise that if any measures are required to mitigate adverse effects on integrity to the Humber Estuary qualifying species, this should be assessed at the appropriate assessment stage of the HRA.

Natural England will assess the in-combination assessment once the HRA has been updated, taking account of our advice above on the impacts alone, and when further detail has been provided on how the predicted noise levels will change compared to the ambient noise levels.

South Humber Gateway Mitigation Strategy

Natural England has been working with North Lincolnshire Council and other estuary stakeholders for many years to deliver a strategic approach to mitigation within the South Humber Gateway (for impacts associated with the loss of land functionally linked to the Humber Estuary SPA/Ramsar site). Natural England believes this is the most effective way to mitigate for impacts on functionally linked land.

As the proposed development site falls within the South Humber Bank mitigation zone, the Applicant should liaise with your Authority regarding how they should contribute to the strategic approach, if appropriate.

WILDLIFE AND COUNTRYSIDE ACT 1981 (AMENDED)

Nationally designated sites

Natural England notes that the application site is located in close proximity to Humber Estuary SSSI. Based on the plans submitted, Natural England considers that the proposed development could have potential significant effects on the interest features for which the site has been notified. Our advice regarding the potential impacts upon the above SSSIs coincide with our advice regarding the potential impacts upon the European sites as detailed above. Natural England also offers the following additional advice.

Please note that if your authority is minded to grant planning permission contrary to the advice in this letter, you are required under Section 28I (6) of the Wildlife and Countryside Act 1981 (as amended) to notify Natural England of the permission, the terms on which it is proposed to grant it

and how, if at all, your authority has taken account of Natural England's advice. You must also allow a further period of 21 days before the operation can commence.

Other advice

Further general advice on the protected species and other natural environment issues is provided at Annex A.

If you have any queries relating to the advice in this letter please contact me on emma.brading@naturalengland.org.uk. For any new consultations, or to provide further information on this consultation, please send your correspondences to consultations@naturalengland.org.uk.

Please consult us again once the information requested above, has been provided.

Yours sincerely

Emma Brading

Lead Adviser
Sustainable Development
Yorkshire and Northern Lincolnshire Area Team

Outstanding issues PA/2023/502 - Proposed enabling works on land east of Rosper Road, Killingholme

Brading, Emma <[redacted]>

Wed 08/11/2023 12:08

To:Andrew Law <Andrew.Law@northlincs.gov.uk>
Cc:Andrew Taylor <Andrew.Taylor@northlincs.gov.uk>;Gooch, Hannah <Hannah.Gooch@naturalengland.org.uk>

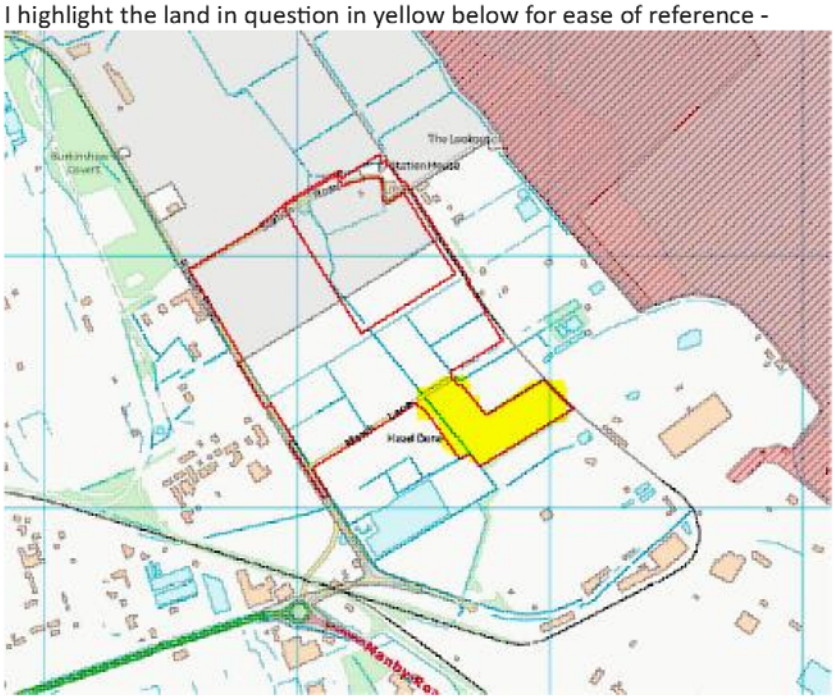
Hi Andrew Law

We are in the process of assessing the revised HRA and wanted to flag some outstanding issues. Please can we arrange a call to discuss? Would Monday 13th between 11:00 and 12:30 or 16:00 and 17:30 work for you?

Some of our previous comments have not been addressed:

1. We still seek clarification on whether the mitigation provided as part of the DCO accounts for loss of functionally linked land outside of the DCO boundary. There is an additional piece of land to the south of Marsh Lane (see image below) which has never been part of the DCO order limits. Therefore it is not clear if mitigation for functionally linked land is required. The bird usage of this part of the site is currently not clear from the data provided, however due to habitat suitability and proximity to the estuary, we advise the precautionary principle is applied and its assumed to be functionally linked.

I highlight the land in question in yellow below for ease of reference -



2. We still have some concerns regarding the future use of the site. Your previous response was: "I have sought further clarification from the agent with regards to the purpose of the enabling works, particularly as part of the site lies outside of the boundary of the AMEP DCO. At present I am only able to assess the construction phase; however I will require this additional information when applying the planning balance." Do you have any further information on this?

3. At this stage we do not consider the noise assessment to be detailed enough to provide certainty that the proposed mitigation (noise barriers) is sufficient. There is also no in-combination assessment with VPI Immingham CCS (PA/2023/421) and Westgate Immingham (PA/2022/1223) which also propose construction works close to Rosper Road Pools and the remaining fields. We have concerns about the effects to birds should construction of the developments happen at the same time.

I look forward to hearing from you regarding a meeting date.

Emma Brading
Lead Adviser
Sustainable Development
Yorkshire and Northern Lincolnshire Area Team

Pronouns: She/Her

www.gov.uk/natural-england

We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

Natural England offers two chargeable services – The Discretionary Advice Service (DAS) provides pre-application, pre-determination and post-consent advice on proposals to developers and consultants as well as pre-licensing species advice and pre-assent and consent advice. The Pre-submission Screening Service (PSS) provides advice for protected species mitigation licence applications.

These services help applicants take appropriate account of environmental considerations at an early stage of project development, reduce uncertainty, reduce the risk of delay and added cost at a later stage, whilst securing good results for the natural environment.

Re: PA/2023/421 VPI Carbon Capture, Killingholme (HRA)

Brading, Emma <xxxxxxxxx>
Thu 04/01/2024 15:18
To:Andrew Taylor <xxxxxxxxxxx>
Dear Andrew

Thank you for your consultation. As the draft HRA is not on the planning portal we offer the following comments via email for your consideration. We have reviewed the 'Report to Inform Habitats Regulations Assessment' by AECOM (dated October 2023) and are satisfied with the assessment and conclusions. However, there are a few items within the draft HRA that we suggest are amended before publication:

- Construction Visual and Noise Disturbance to Functionally Linked Land (Terrestrial Fields) - on pages 9 and 10 of the draft HRA references Halton Marshes Wet Grassland, the South Humber Gateway Strategic Mitigation Strategy and Policy CS12 of the North Lincolnshire Core Strategy. Policy CS12 is clear that 'The SHGCMSDP will identify appropriate areas of mitigation **for the loss of** offsite SPA and Ramsar waterbird roosting and foraging habitat'. We would highlight that the impacts from a) loss of functionally linked land and b) disturbance to birds using functionally linked land are separate impact pathways. Therefore, we do not agree that Halton Marshes Wet Grassland can be used as existing mitigation for disturbance impacts. As long as the terrestrial fields to the north of Rosper Road Pools remain suitable for SPA birds, there is potential for disturbance impacts to occur. We are satisfied with the noise assessment and conclusions in 'Report to Inform Habitats Regulations Assessment' by AECOM (dated October 2023). Therefore, we advise that likely significant effects from Construction Visual and Noise Disturbance to Functionally Linked Land (Terrestrial Fields) are screened in and assessed at the appropriate assessment stage, using a similar rationale as section 6 and 7 of the draft HRA (for Rosper Road Pools).
- Section 8 Operational Air Quality – this should be assessed against the Humber Estuary SAC/Ramsar conservation objectives, rather than the SPA.
- We wouldn't consider 'high background nitrogen deposition' a reason to conclude no adverse effects on integrity. Therefore, we suggest you remove this from section 8.3.6 and 8.3.7, or make clear that is it not part of the final justification.
- For section 8.3.6 we consider the key justification to be – the relatively small area of saltmarsh (<0.3% of the estuary total) in SSSI unit 95 is classed as unfavourable condition due to coastal squeeze. The Humber Flood Risk Management Strategy is delivering a programme of managed realignment to offset losses to coastal squeeze over the next 50 years.
- For section 8.3.7 we consider the key justification to be – the wetland and reedbed habitat does not exhibit significant vulnerability to nitrogen deposition.

We would be able to issue a formal no objection letter once the above issues are resolved.

Kind regards

Emma Brading
Lead Adviser
Sustainable Development
Yorkshire and Northern Lincolnshire Area Team

Date: 25 January 2024
Our ref: 463801
Your ref: PA/2023/421

Dean Watson
North Lincolnshire Council
Economy and Environment
Church Square House
30-40 High Street
Scunthorpe
DN15 6NL
planning@northlincs.gov.uk

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

BY EMAIL ONLY

Dear Dean Watson

Planning consultation: Construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, coding equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas
Location: VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

Thank you for your consultation on the above dated 15 January 2024 which was received by Natural England on the same date.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

SUMMARY OF NATURAL ENGLAND'S ADVICE

NO OBJECTION

Based on the plans submitted, Natural England considers that the proposed development will not have significant adverse impacts on designated sites Humber Estuary Special Protection Area
/Special Conservation Area/Ramsar site/Site of Special Scientific Interest and has no

objection. Natural England's advice on other natural environment issues is set out below.

THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 (AMENDED)

Internationally designated sites - Humber Estuary Special Protection Area/ Special Conservation Area/ Ramsar site

Natural England notes that your authority, as competent authority, has undertaken an appropriate assessment of the proposal in accordance with regulation 63 of the Conservation of Species and Habitats Regulations 2017 (as amended). Natural England is a statutory consultee on the

appropriate assessment stage of the Habitats Regulations Assessment process.

Your appropriate assessment concludes that your authority is able to ascertain that the proposal will not result in adverse effects on the integrity of any of the sites in question. Having considered the assessment Natural England advises that we concur with the assessment conclusions, although we highlight that we have different reasons for reaching this conclusion, which we have set out below.

In-combination assessment

We accept that the assessment for the proposed development can only make use of the information currently available from other proposed projects. Natural England has requested further information on noise and visual disturbance to SPA birds using functionally linked land for the planning applications at Land Adjacent to Westgate Entrance PA/2022/1223 (letter dated 02 August 2023) and Land at Marsh Lane PA/2023/502 (letter dated 15 November 2023).

Regarding development within the South Humber Gateway, Halton Marshes Wet Grassland has been created as mitigation for the loss of functionally linked land. However, as the mitigation site hasn't yet fully achieved its habitat objectives (as far as we are aware) and significant numbers of SPA birds are still present outside of the site, we consider that potential disturbance impacts must still be assessed.

Visual disturbance – in-combination

Natural England does not agree with the HRA (dated January 2023) that potential impacts from visual disturbance to SPA birds using functionally linked land during construction and operation: '*are so minor that effects in-combination with other plans or projects are not likely*'. However we note Table 6 of the 'Report to inform a Habitats Regulations Assessment' (hereafter referred to as 'shadow HRA'; dated October 2023) screens in likely significant effects from visual disturbance during construction and operation in-combination with the relevant projects.

Natural England is particularly concerned about potential reduction in perceived openness and accessibility of Rosper Road Pools by SPA/Ramsar birds that use the site, due to the proposed developments in-combination. However, due to the distance of the proposed development from Rosper Road Pools and the existing industrial development behind it, we advise that the in-combination assessment as per Section 7 of the shadow HRA is considered sufficient at this time to conclude no adverse effects from the proposed developments in-combination with other plans and projects. However, we highlight that we do not fully agree with the assessment in paragraph 7.8 of the shadow HRA, as Natural England considers that there is still a requirement for planning applications PA/2022/1223 and PA/2023/502 to provide further assessment and for any mitigation measures to be agreed with Natural England.

Noise disturbance – in-combination

As previously advised, Natural England does not recommend that a 70dB threshold is used as a generic threshold for noise levels which result in disturbance of birds. We advise noise assessments should set the sensitive receptors in the context of the existing noise environment and assess how noise levels will change, including the type of noise, such as consistent or sudden loud bangs and how this may impact on birds.

Natural England does not agree with the in-combination assessment in the HRA which states that the other identified projects will not act in-combination with the proposed development. However, we note Table 6 of the shadow HRA screens in likely significant effects from noise disturbance during construction and operation in-combination with the relevant projects. Based on the in-combination assessment as per Section 7 of the shadow HRA we advise that is considered sufficient at this time to conclude no adverse effects from the proposed developments in-combination with other plans and projects. However, we note the in-combination assessment for the proposed development relies on mitigation measures implemented for other projects and Natural England considers that there is

still a requirement for planning applications PA/2022/1223 and PA/2023/502 to provide further assessment and for any mitigation measures to be agreed with Natural England.

WILDLIFE AND COUNTRYSIDE ACT 1981 (AMENDED)

Nationally designated sites - Humber Estuary Site of Special Scientific Interest

Based on the plans submitted, Natural England considers that the proposed development will not damage or destroy the interest features for which the site has been notified and has no objection.

Should the proposal change, please consult us again on consultations@naturalengland.org.uk.

If you have any queries relating to the advice in this letter please contact me on emma.brading@naturalengland.org.uk.

Yours sincerely

Emma

Brading

Lead

Adviser
Sustainable Development
Yorkshire and Northern Lincolnshire Area Team