The Planning Inspectorate
Yr Arolygiaeth Gynllunio

SCOPING OPINION:

Proposed Aldbrough Hydrogen Storage Project

Case Reference: EN030003

Adopted by the Planning Inspectorate (on behalf of the Secretary of State) pursuant to Regulation 10 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

11 July 2023

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1. INTRODUCTION

1.1.1 On 31 May 2023, the Planning Inspectorate (the Inspectorate) received an application for a Scoping Opinion from Equinor New Energy Limited (the Applicant) under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) for the proposed Aldbrough Hydrogen Storage Project (the Proposed Development). The Applicant notified the Secretary of State (SoS) under Regulation 8(1)(b) of those regulations that they propose to provide an Environmental Statement (ES) in respect of the Proposed Development and by virtue of Regulation 6(2)(a), the Proposed Development is 'EIA development'.

1.1.2 The Applicant provided the necessary information to inform a request under EIA Regulation 10(3) in the form of a Scoping Report, available from:

http://infrastructure.planninginspectorate.gov.uk/document/EN030003-000009

1.1.3 This document is the Scoping Opinion (the Opinion) adopted by the Inspectorate on behalf of the SoS. This Opinion is made on the basis of the information provided in the Scoping Report, reflecting the Proposed Development as currently described by the Applicant. This Opinion should be read in conjunction with the Applicant's Scoping Report.

1.1.4 The Inspectorate has set out in the following sections of this Opinion where it has / has not agreed to scope out certain aspects / matters on the basis of the information provided as part of the Scoping Report. The Inspectorate is content that the receipt of this Scoping Opinion should not prevent the Applicant from subsequently agreeing with the relevant consultation bodies to scope such aspects / matters out of the ES, where further evidence has been provided to justify this approach. However, in order to demonstrate that the aspects / matters have been appropriately addressed, the ES should explain the reasoning for scoping them out and justify the approach taken.

1.1.5 Before adopting this Opinion, the Inspectorate has consulted the 'consultation bodies' listed in Appendix 1 in accordance with EIA Regulation 10(6). A list of those consultation bodies who replied within the statutory timeframe (along with copies of their comments) is provided in Appendix 2. These comments have been taken into account in the preparation of this Opinion.

1.1.6 The Inspectorate has published a series of advice notes on the National Infrastructure Planning website, including Advice Note 7: *Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping* (AN7). AN7 and its annexes provide guidance on EIA processes during the pre-application stages and advice to support applicants in the preparation of their ES.

1.1.7 Applicants should have particular regard to the standing advice in AN7, alongside other advice notes on the Planning Act 2008 (PA2008) process, available from:

https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

1.1.8 This Opinion should not be construed as implying that the Inspectorate agrees with the information or comments provided by the Applicant in their request for an opinion from the Inspectorate. In particular, comments from the Inspectorate in this Opinion are without prejudice to any later decisions taken (eg on formal submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a Nationally Significant Infrastructure Project (NSIP) or Associated Development or development that does not require development consent.

2. OVERARCHING COMMENTS

2.1 Description of the Proposed Development

(Scoping Report Section 2)

ID	Ref	Description	Inspectorate's comments
2.1.1	n/a	General	The ES should incorporate a level of information to adequately and clearly understand the nature of the project and its associated impacts, ensuring the provision of sufficient technical detail for the reader to understand both the physical and operational characteristics of the development, as well as providing accompanying text and diagrams in plain language in order to enable understanding by those of a non-technical background.
2.1.2	n/a	General	The Scoping Report does not indicate how much baseline survey or operational monitoring data is either available or to be relied upon from the construction and operation of the Aldbrough Gas Storage (AGS) facility, or the works undertaken to date on the partially implemented AGS extension. Where data from these are to be used (for example noise monitoring in 6.6.8.3, archaeological investigations in 6.9.3.11), the ES should detail why this data is still considered to be relevant, and whether it can specifically be relied upon to either assess or mitigate effects from the Proposed Development, taking into account the relevant considerations including the age of the data, location and approach to surveys undertaken, and the nature of the Proposed Development being for the purposes of storing a different type of gas.
2.1.3	1.2.1.2 / General comment	Project parameters	Whilst the above comment notes that the Proposed Development description is written from a technical / engineering perspective, the Inspectorate considers that there is very little specific or indicative

ID	Ref	Description	Inspectorate's comments
			parameters of the Proposed Development identified within the scoping report. This includes, but not limited to parameters that are essential to include within the ES such as: • Dimensions and extent including height of the above ground infrastructure; • The anticipated depths and lateral extents of the caverns to be constructed; • Volumes of water to be abstracted / discharged (including for the rewatering / decommissioning process); • The lateral and vertical extent of the onshore "wet well" for seawater and depth below ground level; • Dimensions of the cofferdam; • The anticipated coordinates or other dimensions of the below-ground infrastructure; • Height of construction plant including the drilling rig; • Height of the existing landscape bund and landscape planting. The Inspectorate has provided its opinion based on our limited understanding of the development and without any indicative parameters around issues such as heights, and therefore the Inspectorate reserves the right to require further information if the parameters, when defined, are considered to alter the scope of the EIA. The ES should provide sufficient information to ensure that the maximum anticipated dimensions and parameters of the above and below ground infrastructure, and any flexibility sought, are assessed.

ID	Ref	Description	Inspectorate's comments
			The ES should confirm how it is to be assured that the lateral extent of the caverns does not extend outside of the red line boundary of the Proposed Development, and extend the boundary if required.
2.1.4	2.4.3 and Chapter 4 alternatives	Brine Discharge and wet well	Brine discharge back into the North Sea is noted to be required. The Scoping Report does not refer to whether there is the potential for storage or reuse of the brine for other processes (such as the manufacture of chlorine as used by other similar processes). The Proposed Development also includes a 'wet well' located onshore approximately 450m west of the cliff face. The Scoping Report does not explain why the wet well onshore is required and why seawater cannot be directly pumped to the caverns, or, given that it is considered possible that the wet well may be at a depth where it could interact with underlying groundwater. Where alternatives have been considered (eg alternatives for usage of brine), then these should be set out within the ES along with reasons for selecting the preferred option including environmental considerations etc.
2.1.5	2.4.3 and 2.5	Site preparation	No specific information is given within the Scoping Report in relation to any requirements to remove redundant or derelict components of the existing AGS leaching system (discussed in section 4.3). The indicative layout figure 2.1 appears to indicate that the planned pipework is in the same alignment and geographic area as the redundant pipework shown in figure 7.2, and as such it appears that this may require removal. The ES project description should include a description of such works if they are to be included as part of the Proposed Development (including removal of infrastructure such as the existing monopile), and any potentially significant effects associated with such works should be assessed.

ID	Ref	Description	Inspectorate's comments
			The ES should also confirm any additional permissions required for these works.
2.1.6	2.5	Construction, operational and decommissioning timescales and components	The Scoping Report does not clearly define which activities are considered to be construction and which are considered to be operation. For example, the timescales of cavern leaching and commissioning are not given (with the exception of a reference to a 10 year design life of marine infrastructure in paragraph 2.8.1.1), as only a general construction period of 2026-2029 is provided (paragraph 2.5.1.2). In addition, the marine aspect chapters of the Scoping Report consider the construction of the marine infrastructure as part of the construction phase, and use of the marine infrastructure (for drilling and leaching) as part of the operational phase. This does not align with the description of the phases in sections 2.5, 2.6 and 2.7. The activities undertaken within each phase of the development should be described consistently within the ES. Where a distinction is needed between the construction activities, 'sub phases' could be used to provide clarity. Were the caverns to be constructed sequentially (ie only commencing excavation of the second cavern when the first is operational), the Inspectorate considers that this could lead to an ongoing and extended construction period, with the associated effects such as 24 hours working. This would be reduced, for example, if the drilling wells are to be undertaken consecutively during the specified 3 years construction period (ie over 9 consecutive 60 day periods of 24 hours working as indicated within paragraph 2.6.2.1), with the leaching process, which is not indicated to be 24 hours working, undertaken as a separate phase. As another example, the decommissioning period referred to in paragraph 2.8.1.2 of c. 5 and a half years indicates that the above

ID	Ref	Description	Inspectorate's comments
			ground infrastructure is required to remain until the caverns and wells are fully abandoned, however it is not stated if all above ground equipment is to remain, potentially resulting in longer term environmental effects, or whether some can be decommissioned sooner. The ES should clearly define anticipated duration and project timescales for each element of construction, operation and decommissioning. The ES should provide an indicative construction programme, define which activities constitute construction and operation, and assess the timescales of these consistently within the technical ES chapters.
2.1.7	2.5.3.4	Construction of marine infrastructure	The description of construction methods in the Scoping Report is high level and provides no indication of the number of vessel movements and their potential extent. The ES should provide estimates of these and the assumptions behind them.
2.1.8	2.8 and 6.3.4.1	Decommissioning of proposed marine infrastructure	The Scoping Report proposes to remove the proposed marine infrastructure protruding above the seabed. The ES should provide further clarity on plans for the subsurface elements, to identify any residual risks beyond the operational stage arising from coastal recession and demonstrate capacity to adapt to climate change including coastal change. The ES should justify the appropriateness of retaining the pipework in situ, give the potential for longer term adverse effects (ie the Scoping Report (section 4.3 and paragraph 7.3.3.13) refers to the derelict state of the existing (disused) AGS pipeline and monopile, and previous requests to remove this (Marine Licence application) being refused, implying that there is a requirement for removal at some point).

ID	Ref	Description	Inspectorate's comments
			Should future removal of the pipeline be required as part of decommissioning, this should be identified and appropriately assessed within the ES. If the infrastructure is to remain in situ, the ES should consider potential future effects, including those potentially exacerbated by climate change such as coastal erosion. The ES should, where relevant, also include any receptors or potential effects that were indicated to be a reason for refusal of the marine licence.
2.1.9	2.8.1.1	Design life	As the design life of the subsurface infrastructure would exceed the design life (30 years) of the above ground infrastructure (AGI), the ES should confirm whether the operational phase is likely to include the renewal and replacement of the AGI to extend the lifetime of the Proposed Development. The ES must include an assessment of any potentially significant effects associated with operational renewal if this is likely to occur.
2.1.10	Table 7.1	Study areas	The marine study areas described in the Scoping Report are ambiguously defined, eg 'the wider Holderness coast', or the 'Aldbrough Hydrogen Storage offshore area' (paragraphs 7.6.3.1 and 7.11.3.1). The ES should clearly define the study areas applied, justify their extent, and present them on figures where possible.

2.2 EIA Methodology and Scope of Assessment

(Scoping Report Section 5)

ID	Ref	Description	Inspectorate's comments
2.2.1	3.1.3 – 3.1.4 and 3.3.2	Deemed or exempted consents	The ES is not specific in relation to which permissions, licences etc are to be included within the DCO application (either deemed or through exemptions), and which are to be undertaken as a separate application at a later point, or the reasons behind these options. The ES or other related dDCO documents should clearly state which licences are being applied for in the Application, and whether any aspects of these are required to be assessed. The application should also describe the anticipated works under each licence, for example the extent of construction and decommissioning of redundant infrastructure under a marine licence if required.
2.2.2	3.4.2.4	Draft National Policy Statements (NPS)	The Scoping Report details the requirements of the draft NPS. However, these are not referred to in the context of individual aspect chapters. The Inspectorate considers that each chapter should indicate how the requirements for the assessment of environmental effects of the draft (or if adopted at the time of writing) NPS are met by the ES.
2.2.3	5.4.1.3	Decommissioning	The Scoping Report proposes not to address decommissioning to the same level of detail as the other phases as it will be more than 30 years in the future and it is assumed that in general the environmental effects from decommissioning will be no worse than those that occur during construction. While the Inspectorate generally agrees with this assumption, there are some notable exceptions, such as the rewatering of the caverns and associated impact on groundwater resource, as well as the removal of marine infrastructure and potential impact on marine biota. The Inspectorate therefore agrees with the proposed approach

ID	Ref	Description	Inspectorate's comments
			to decommissioning, unless otherwise stated in the aspect chapter comments below.
2.2.4	5.4.1.9 and 5.11.1.1	Indirect effects	The Scoping Report defines indirect effects (effects that arise from the impact of activities not explicitly forming part of the Proposed Development and therefore not under the control of the Applicant) and proposes to scope these out. In this context the Scoping Report states that in order to operate, the Proposed Development will require a connection to the proposed hydrogen pipeline and potentially the Electricity Transmission system.
2.2.5	5.5	Mitigation	Where design related or additional mitigation measures are required, the ES should confirm how these are to be secured within the dDCO.
2.2.6	5.11.1.1	Future hydrogen pipeline and electricity connections	The Scoping Report states that in order to operate, the Proposed Development will require a connection to a proposed hydrogen pipeline to be consented via a separate application, and potentially the Electricity Transmission system. The Planning Act 2008 aims to create a holistic planning regime so that the cumulative effect of different elements of the same project can be considered together. Co-ordinated applications typically bring economic efficiencies and reduced environmental impact. The Inspectorate recognises that on some occasions it may not be possible to coordinate applications, and that applicants may therefore decide to submit separate applications for each element. Where this is the case, the ES should include information on the other elements and explain the reasons for the separate application confirming that there are no obvious reasons for why other elements are likely to be refused. If this option is pursued, the Applicant accepts the implicit risks involved in doing so and must ensure they provide sufficient information to comply with the EIA Regulations including the indirect,

ID	Ref	Description	Inspectorate's comments
			secondary, and cumulative effects, which will encompass information on network connections.
2.2.7	5.12	Climate change	It is unclear whether the ES will include a stand-alone Climate Change chapter, and whilst the Scoping Report refers to a greenhouse gas assessment, it is not stated where this is to be presented. Given the matters scoped into the assessment, the Inspectorate considers that a separate Climate Change chapter would be appropriate.
2.2.8	5.12.1.2	Greenhouse Gas Emissions	The Scoping Report references the IEMA Environmental Impact Assessment Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2017. The ES should adopt the approach in the latest version of the guidance (currently the 2nd edition, published in 2022).
2.2.9	5.12.1.3	Climate Change Resilience	Other than the vulnerability of the Proposed Development to flood risk and coastal erosion, the Scoping Report considers that no other potential effects of climate change would be relevant, however no justification is provided. The ES should demonstrate that the relevant climate change scenarios and resultant climate related impacts, and the potential for these to give rise to significant effects on the Proposed Development Inspectorate / in combination with the Proposed Development, have been fully considered.
2.2.10	7.1.1.1	Aviation and Radar	The Report states that aviation and radar have not been considered in the Scoping Report due to the scale of the Proposed Development. However, the Scoping Report has not provided the height of the above ground infrastructure or the construction plant. Insufficient information regarding the scale of the development and location of

ID	Ref	Description	Inspectorate's comments
			nearby potential receptors to enable the Inspectorate to scope this out has not been provided at this stage.
2.2.11	7.2.1.1	Marine Environment Study Areas	Paragraph 7.2.1.1 and Table 7.1 states that for five offshore chapters, the study area is defined as "The Proposed Development area in the context of the wider Holderness coast", and for shipping and navigation as "The Proposed Development area up to mean high water". The ES should provide a defined study area and justification for this for each chapter, with this represented on appropriate figures. The ES should also detail agreement with relevant statutory consultees in relation to study areas.
2.2.12	8.2 and 8.5	Standalone Socio-economic and Human Health ES aspect chapters	The Scoping Report proposes that Socio-economic and Human Health will be assessed within two standalone chapters in the ES. On the basis that the assessment of socio-economic effects is closely associated with the Human Health components of the EIA and the Scoping Report also states that there will be a degree of commonality or overlap in the data sets used to inform the environmental baseline. The Applicant is advised to consider the possibility to combine the assessment of the two aspects into one chapter to avoid duplication work.
2.2.13	n/a	Unexploded ordnance (UXO)	With the exception of brief references to the requirement to undertake UXO clearance in the marine mammals chapter, the ES does not explain how it will assess the potential for significant effects from UXO from the onshore or offshore construction works, either in relation to ground conditions or other relevant chapters such as major accidents or disasters. Given the location of the Proposed Development, the Inspectorate considers an assessment of UXO should be scoped into the ES.
2.2.14	n/a	Electric and Magnetic Fields (EMF)	The Scoping Report makes no mention of impacts of EMF. The ES should confirm either that the project does not contain any EMF

ID	Ref	Description	Inspectorate's comments
			sources that may have a potential public health impact; or ensure that an appropriate assessment of the possible impact is included in the ES.
2.2.15	n/a	Invasive non-native species (INNS)	The Scoping Report makes no mention of the potential for the scheme to contribute towards the spreading of INNS. The ES should consider this impact pathway and assess any potentially significant effects.

3. ENVIRONMENTAL ASPECT COMMENTS

3.1 Terrestrial: Geology and Ground Conditions

(Scoping Report Section 6.3)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.1.1	6.3.3.13	Petroleum Exploration and Development Licence (PEDL)	The Scoping Report states that the Proposed Development is located within PEDL 183. The ES should assess the potential for significant effects associated with any interaction between the Proposed Development construction and operation and the PEDL, including (but not limited to) the potential for the sterilisation of the PEDL asset and major accident or hazards associated with any interaction.
3.1.2	6.3.3.16	Saline intrusion	The Scoping Report notes that the aquifer is subject to saline intrusion. The ES should assess how the Proposed Development would prevent an increase in the saline intrusion to the aquifer, for example how the wet well would be designed to avoid interacting with the underlying aquifer(s). Please refer to the consultation response from the Environment Agency in this regard (Appendix 2 of this Opinion).
3.1.3	Table 6.2 / 6.3.7.2	Sterilisation of future mineral resources – All phases	On the basis that the Proposed Development is not located within or near a Mineral Safeguarding Area, the Inspectorate is in agreement that an assessment of the sterilisation of mineral resources can be scoped out of the ES.
3.1.4	Table 6.2 / 6.3.7.2	Geological Sites of Special Scientific Interest (SSSI) – All phases	On the basis that the Proposed Development is not located within or near a geological SSSI, the Inspectorate is in agreement that an assessment of designated geological sites can be scoped out of the ES (note however Table 3.9 ID 3.9.2).

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.1.5	Table 6.2 / 6.3.7.3	Exposure of workforce to health Impacts - Construction phase	On the basis that any required protective measures will be outlined within the Construction Environment Management Plan, the Inspectorate is in agreement that an assessment of the exposure of the workforce to contamination during the construction phase can be scoped out of the ES.
3.1.6	Table 6.2 / 6.3.7.4	Soil compaction and changes to drainage and water infiltration - Construction phase	On the basis that the topsoil and subsoil in areas of heavy plant movement will be stripped and stored in line with DEFRA 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, the Inspectorate is in agreement that an assessment of soil compaction and changes to drainage and water infiltration during the construction phase can be scoped out of the ES. The ES should however confirm how soil management procedures are to be secured in the dDCO.
3.1.7	Table 6.2 / 6.3.7.5	Potential contamination of the ground and groundwater from accidental leaks and spillages – Construction and Operation	The Inspectorate is not in agreement that an assessment of the effects from contamination incidents can be scoped out of the assessment, as Table 6.7 within the water environment and flood risk chapter scopes this in and therefore the Inspectorate considers that there is an identified risk. In addition, the Scoping Report refers to the potential for the accidental loss of drilling fluids in relation to physical intrusion into aquifers. The Inspectorate considers that this may also have potential effects on water quality in relation to contamination or physical properties and should be included in the assessment.
3.1.8	n/a	Geotechnical Hazards	The geology and ground conditions chapter, and the Scoping Report in general, make limited reference to impacts as a result of geotechnical or geological hazards for both the terrestrial and marine areas. Given the nature of the scheme (above ground construction,

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			formation of extensive underground caverns and hydrogen storage), the ES should provide information in relation to how potentially significant effects from geotechnical and geological hazards are to be assessed, for all construction and operational requirements (above ground infrastructure, below ground infrastructure and marine infrastructure). In the event that this is to be undertaken separately to the ES, the ES should outline how this is to occur. The ES should include any temporary hazards associated with construction works (such as creating access points), or permanent risks associated with the operation or location of the Proposed Development (such as cliff erosion). This can be in the form of cross referring to other chapters if the assessment is presented in full elsewhere within the ES.
3.1.9	n/a	Agricultural Land Classification (ALC)	The Scoping Report states in 6.3.3.7 that the (provisional) ALC of the Proposed Development land is Grade 2 and 3, and in paragraph 6.3.8.4 states that an ALC survey is required. There is however no further specific mention of any assessment of any effects to ALC. The Inspectorate considers that the ES should either include an assessment of the temporary and permanent effects to ALC and consider any related effects to other ES aspect topics such as socioeconomics, or provide a justification of how the Proposed Development will not sterilise the use of agricultural land. The Applicant's attention is drawn to the consultation responses received from Natural England regarding the extent of the ALC survey (Appendix 2 of this Opinion).
3.1.10	n/a	Groundwater and ground gas chemistry	The Scoping Report does not contain any detail on the potential for changes to groundwater and ground gas chemistry as a result of, for example, a reaction between the stored hydrogen gas or use of nitrogen in construction and existing rock / soil or groundwater

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			chemistry causing the production of a by-product or changes to the physical properties. There is a noted need (2.7.3.1) to filter the gas prior to transport and use. The ES should provide information on any anticipated effects as a result of these potential interactions.

ID	Ref	Description	Inspectorate's comments
3.1.11	Table 6.4	Magnitude of Impacts	The ES should include, where relevant, any quantitative criteria for the magnitude impact eg hectares of agricultural land loss.
3.1.12	n/a	Cross reference between chapters	The Inspectorate notes that receptors such as groundwater and surface water are included in both the geology and ground conditions and water environment and flood risk chapter. Where cross references are made to assessments in a single chapter, the ES should clearly signpost this, or where the assessments are split between the chapters, ensure the ES clearly states which effect is being assessed.

3.2 Terrestrial: Water Resources and Flood Risk

(Scoping Report Section 6.4)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.2.1	Table 6.7 / 6.4.7.3	Water quality impacts to designated sites (Special Areas of Conservation (SACs) and Marine Conservation Zones (MCZ)) from chemical pollution, erosion and sedimentation – Construction	The Scoping Report proposes to scope this matter out given the active erosion and dynamic nature of the coastline meaning that water quality effects on designated sites would not be significant in EIA terms. In light of the advice from Natural England (see Appendix 2 of this Opinion) the Inspectorate does not agree that this can be scoped out of the ES. The ES should however consider whether it is appropriate to include MCZs within the terrestrial water resources chapter, as these relate to a marine designation.
3.2.2	6.4.8.3	Watercourses within the Proposed development boundary	Paragraph 6.4.8.3 states that the Scoping Boundary does not cross any watercourses (onshore). This does not reflect the baseline environment presented in paragraphs 6.4.3.4 – 6.4.3.7. The ES should be consistent in its presentation of the baseline environment and assessment of relevant receptors. The Inspectorate therefore considers that the relevant surface water bodies should be included within the assessment.
3.2.3	Table 6.7 / Table 10.1	Summary table	The Inspectorate notes that there is a discrepancy between Table 6.7 which scopes in pollution, erosion and sedimentation, and summary Table 10.1 which places these in the scoped out column. For clarity, The Inspectorate considered that the topics listed as scoped in within table 6.7 should be scoped in.

ID	Ref	Description	Inspectorate's comments
3.2.4	Table 6.7	Chemical Pollution during construction and operation	The ES should confirm whether there is a requirement to assess the potential for the pollution of water resources as a result of any leaks of hydrogen gas from the below ground infrastructure (wells and caverns).
3.2.5	Table 6.7	Erosion and Sedimentation – Construction and operation	The Scoping Report identifies these as potential hydromorphological / hydrological issues. However, these are the only specific effects referred to. The ES should confirm if there is the potential for other effects to the chemical or biological characteristics of water bodies, and provide supporting evidence where relied upon to scope these matters out.
3.2.6	Table 6.7	Impediments to flow – Construction and operation	The ES should confirm whether the assessment of impediments to flow includes both groundwater and surface water bodies, as this is not stated within the Scoping Report.
3.2.7	Table 6.7	Impacts on public and private water supplies – Construction and operation	The Scoping Report in general assumes that decommissioning effects are broadly similar to construction effects. The Inspectorate considers however that the decommissioning requirements of filling the caverns with water extracted from a groundwater source (as detailed in 2.8.1.2), with no subsequent water return, may have the potential to result in new adverse effects to the public water supply or other groundwater related receptors (eg water flow). The ES should consider whether a separate assessment is to be required (potentially at a future date) for the impacts on water availability during the decommissioning phase, in particular in relation to the potential for changes to water availability as a result of climate change. The ES should also clarify why abstracted groundwater is required to be used for the decommissioning phase, rather than abstracted

ID	Ref	Description	Inspectorate's comments
			seawater as used during the construction phase, and how this has been considered in the assessment of alternatives. The Applicant should also ensure all relevant statutory consultees are utilised to obtain baseline information, as for example, the Environment Agency details a (deregulated) abstraction licence that has not been included within the Scoping Report

3.3 Terrestrial: Air Quality

(Scoping Report Section 6.5)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.3.1	Table 6.11	Emissions from the Hydrogen Storage Facility during operation	The Scoping Report proposes to scope out this matter given that the Proposed Development will not have any combustion activities during operation except for emergency flaring and flaring during maintenance. On this basis, the Inspectorate agrees that the combustion activities during operational phase can be scoped out. However, the Scoping Report indicates that fugitive emissions of hydrogen are a concern and a Risk Plan is proposed to estimate expected rates of residual fugitive emissions by the plant after mitigation. The ES should provide information on the estimated quantities. The ES should confirm if there are any potential impacts to air quality arising from fugitive hydrogen emissions and assess any likely significant effects.
3.3.2	Table 6.11 and 6.10.7.4	Air quality impact from related traffic during operational phase	The Scoping Report is contradictory on this matter. Table 6.11 (of the air quality aspect) scopes this matter into the air quality chapter, although it anticipates that it is not likely to have a significant effect, while paragraph 6.10.7.4 of the Traffic and Transport aspect proposes to scope it out. Considering the nature of the Proposed Development, the Inspectorate is content that this matter may be scoped out however the ES should cross reference with the findings in the traffic and transport chapter (final traffic estimates) to justify this position. The Inspectorate draws the Applicant's attention to ID 3.8.4 in relation to the estimation of operational traffic.
3.3.3	n/a	Offshore air quality impacts	The Scoping Report 2.8.1.2 states that decommissioning would involve similar types and numbers of vessels as the construction, however it does not make reference to potential for air quality

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			impacts relating to the offshore components of the Proposed Development during construction and decommissioning. The ES should include information about any potential emissions from offshore activity, eg from vessels, including the type and expected volume of emissions. It should explain whether there are any impact pathways to relevant human and ecological receptors. Where significant effects are likely to occur, an assessment of this matter should be included within the ES.

ID	Ref	Description	Inspectorate's comments
3.3.4	6.5.3.5, 6.5.4.3 and 6.5.4.4	Types of receptors	The Scoping Report states that the key sensitive receptors include schools, hospitals, nurseries, care homes and residential areas. The ES should also consider if there are any ecological receptors that require consideration in respect of air quality related impacts.
3.3.5	6.5.8.1	Baseline data collection	The Scoping Report proposes to use the air quality data sourced from national or local monitoring networks and baseline surveys are not proposed to be undertaken. The ES should demonstrate the relevant data used are representative and effort should be made to agree the requirement for any additional baseline survey data with the Local Planning Authority. The assessment in the ES should be carried out with reference to a robust baseline position reflecting the relevant study area, including an understanding of relevant pollutant concentrations. The Scoping Report references that baseline air quality data for PM_{10} and if relevant NO_x/NO_2 will be sourced but does not reference $PM_{2.5}$, the Applicant should agree whether further monitoring of this pollutant is required with the Local Planning Authority.

ID	Ref	Description	Inspectorate's comments
3.3.6	6.5.8.2	Air quality impact from related traffic during construction and decommissioning phases	Table 6.11 scopes this matter into the air quality aspect chapter, however little information is provided in the Scoping Report regarding the methodologies and assessment criteria. The ES should provide up to date information on the anticipated construction programme and the predicted number of HGV movements to confirm that relevant thresholds for air quality assessment are not exceeded (eg as set out by the Institute of Air Quality Management) or provide a detailed air quality impact assessment.
3.3.7	n/a	Study area	The ES should include a figure/ figures to identify the final study areas for each element of the air quality assessment, including the location of human and ecological receptors that have been considered.

3.4 Terrestrial: Noise and Vibration

(Scoping Report Section 6.6)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.4.1	6.6.7.2 and Table 6.13	Road traffic noise during operation	The Scoping Report proposes to scope out this matter on the basis that significant increases in road traffic noise during operation are not expected to occur. Considering the nature of the Proposed Development, the Inspectorate is content that this matter may be scoped out however the ES should cross reference with the findings in the traffic and transport chapter to justify this position. The Inspectorate draws the Applicant's attention to ID 3.8.4 in relation to the estimation of operational traffic.
3.4.2	6.6.7.3 and Table 6.13	Vibration from the operation of the Hydrogen Storage Facility	The Scoping Report 6.6.7.3 states that there would be no significant vibration generating equipment required during operation. Based on the nature and characteristics of the Proposed Development, the Inspectorate agrees that operational vibration may be scoped out from further assessment. However, the description of the Proposed Development within the ES should demonstrate that operational plant and equipment is of a type and to be used in locations unlikely to result in significant vibration impacts on sensitive receptors.
3.4.3	6.6.7.4	Noise and vibration effects during decommissioning	The Scoping Report states that no separate assessment of decommissioning noise and vibration will be included in the ES, on the basis that effects are expected to be similar to those generated during the construction phase. However, the Scoping Report 2.8.1.2 states that rewatering of the caverns with water from an on-site groundwater abstraction well would be involved. The Inspectorate considers that there is future uncertainty on noise and vibration effects due to the operation of the rewatering process, therefore is not content to scope this matter out. The Inspectorate would expect

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			to see a Decommissioning Plan, agreed with the Local Authority, secured through the inclusion of an Outline Decommissioning Plan or similar with the Application. The ES should clearly set out how impacts from noise and vibration are to be assessed for the decommissioning phase.

ID	Ref	Description	Inspectorate's comments
3.4.4	6.6.3.4	Sensitive receptors	The Scoping Report states that the key receptors for noise and vibration are the nearby residential properties. The ES should also consider if there are any ecological receptors that require consideration in respect of noise and vibration impacts in particular related to the construction of marine infrastructure. Where this has potential to influence other assessments, this should be cross referenced eg Marine Mammals.
3.4.5	n/a	Vibration effects during construction	The Scoping Report does not explicitly scope in vibration impacts during construction. The ES should include an assessment of significant effects from vibration, including the fixed and mobile construction plant and drilling operation for both construction of marine infrastructure and salt caverns as well as any potential impacts due to underground geological changes, in line with relevant British Standards, and confirm if any mitigation measures and/or monitoring required.

3.5 Terrestrial: Ecology and Nature Conservation

(Scoping Report Section 6.7)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.5.1	6.7.7.2	Dormice	Impacts on this species are proposed to be scoped out as the background data search indicates they are considered absent from the county. The Inspectorate agrees that dormice can be scoped on this basis.
3.5.2	6.7.7.3	White-clawed Crayfish	Impacts on this species are proposed to be scoped out on the basis that the ditches at the site are unsuitable habitat and the ES will provide baseline information to confirm this. The Inspectorate agrees with the basis for scoping out this receptor.

ID	Ref	Description	Inspectorate's comments
3.5.3	6.7.4.1 – 6.7.4.2	Construction phase disturbance and habitat fragmentation	The Scoping Report states at 2.6.2.2 that the drilling rig will operate continuously 24 hours a day, 7 days a week and will be lit during night-time hours. The ES should assess the visual and noise impact of these working hours on ecological receptors.

ID	Ref	Description	Inspectorate's comments
3.5.4	6.7.8	Surveys	Given that the construction of the Project is not planned until 2026, the Applicant is advised to set out how they are going to ensure that the conclusions of the ecological assessments remain valid prior to the commencement of construction activities.
3.5.5	6.7.8.20	Confidential Annexes	Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers (referred to in paragraph 6.7.8.20) and rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.

3.6 Terrestrial: Landscape and Visual Assessment

(Scoping Report Section 6.8)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.6.1	6.8.7.2	Impacts to Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) located beyond 2.5 km radius around the Hydrogen Storage Facility boundary – All phases	The Scoping Report states that this matter is to be scoped out of the ES but provides little justification or evidence. Whilst it is noted that paragraph 6.8.3.4 provides a high-level topography of the Proposed Development, the Inspectorate would require further details on parameters and a ZTV in order to adequately rule out significant effects on these receptors. In the absence of this information the Inspectorate is not in a position to scope these matters out and they should be assessed within the ES.
3.6.2	6.8.7.2	Impacts to LCTs and LCAs within a 2.5 km radius around the Hydrogen Storage Facility boundary but which do not fall within the Zone of Theoretical Visibility (ZTV) output – All phases	Providing the ZTV is produced in line with relevant guidance, necessary ground-truthing and subject to agreement with relevant parties, the Inspectorate agrees that receptors outside of the ZTV are unlikely to be significantly impacted by the Proposed Development. The Inspectorate is therefore content to scope this matter out.
3.6.3	6.8.7.2	Visual effects on visual receptors beyond 2.5 km of Hydrogen Storage Facility boundary or those locations judged to have limited or no visibility of the Proposed Development following the results of the ZTV and verification on site – All phases	Insufficient evidence has been provided in the Scoping Report to rule out effects on these receptors. The ES should demonstrate there is no intervisibility, otherwise the potential effects on views and visual amenity within the ZTV where significant effects are likely to occur should be assessed.

ID	Ref	Description	Inspectorate's comments
3.6.4	6.8.3.3	Earth bund	The Scoping Report states that the Hydrogen Storage Facility lies entirely within an earth bund that is well vegetated, however no dimensions are provided for the height of the bund or the treeline. This information should be provided in the ES.
3.6.5	6.8.3.19	Study Area(s)	The Scoping Report states that a study area of 2.5km will be applied based on the anticipated visibility of the Proposed Development as well as identified Landscape and Visual receptors. However, in the absence of any project parameters it is unclear what the anticipated visibility of the Proposed Development would be. The ES should contain a robust justification for the extent of the study area(s) with reference to recognised professional guidance and the extent of the likely impacts, informed by fieldwork and relevant models such as the Zone of Theoretical Visibility. The Applicant should agree the study area(s) with the relevant consultation bodies.
3.6.6	n/a	Night-time views	The Scoping Report states at 2.6.2.2 that the drilling rig will operate continuously 24 hours a day, 7 days a week and will be lit during night-time hours. The ES should assess the impact of these night-time activities on Landscape and Visual receptors.

3.7 Terrestrial: Historic Environment

(Scoping Report Section 6.9)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.7.1	6.9.7.2	Assessment of areas previously subject to investigation	The Scoping Report seeks to scope out an assessment of the areas of the Proposed Development boundary that have been subject to archaeological examination (including intrusive works) as part of previous planning applications and / or construction works. The Inspectorate is in agreement with this approach, provided that the findings of the previous archaeological investigation are adequately described and represented on appropriate figures.

ID	Ref	Description	Inspectorate's comments
3.7.2	6.9.8.3 – 6.9.8.7	Archaeological assessment process	The Scoping Report indicates a five stage process to archaeological investigation (Desk based assessment, a site walkover, geoarchaeological investigation, geophysical survey and trial trenching). The ES should explain how the approach to intrusive works has been designed to obtain the maximum available information (for example whether it is possible to combine geotechnical / land quality ground investigation works with geoarchaeological works), and in the case where intrusive works for other purposes are undertaken prior to detailed archaeological works, how any adverse effects to archaeological assets are to be prevented. The Applicant should make effort to agree the need for intrusive investigations with relevant consultation bodies. Where necessary

ID	Ref	Description	Inspectorate's comments
			intrusive investigations should be completed prior to submission of the DCO application.

3.8 Terrestrial: Traffic and Transport

(Scoping Report Section 6.10)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.8.1	Table 6.24 and 6.10.7.5	Hazardous loads during construction and drilling phase	The Scoping Report states that except for fuel no other hazardous substances are expected to be transported regularly in significant quantities during the construction period. The Inspectorate agrees that this matter can be scoped out.
3.8.2	Table 6.24 and 6.10.7.2 - 6.10.7.4	Air quality impact during construction and drilling phase Air quality impact during operational phase Noise impact during construction and drilling phase	This aspect seeks to scope out air quality and noise impacts. The Applicant is referred to Tables 3.3 and 3.4 of this Opinion for the Inspectorate's comments on these aspects.
3.8.3	Table 6.24 and 6.10.7.6	Decommissioning	The Scoping Report proposes to scope out effects during the decommissioning phase due to uncertainties in relation to future traffic flows. The Inspectorate accepts that a full assessment of traffic impacts may not be possible at the current time. The Inspectorate would expect to see a Decommissioning Plan, agreed with the Local Authority, secured through the inclusion of an Outline Decommissioning Plan or similar with the Application. The ES should clearly set out if and how decommissioning is to be assessed and any components which may remain following decommissioning.
3.8.4	6.10.8.9	Transport Assessment (TA)	The Scoping Report states that a formal TA is not proposed due to the traffic associated with the operational phase of the Proposed Development is anticipated to be below the required threshold set out

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			in the IEMA (1993) guidelines for a formal TA. The ES description of development should clearly set out the operational vehicle types and numbers (with reference to thresholds within guidance) to justify this position and seek agreement with National Highways and the local highways authority.

ID	Ref	Description	Inspectorate's comments
3.8.5	6.10.8.1	Study area	The Scoping Report states that the traffic and transport study area will be agreed with relevant consultation bodies. The ES should justify how the study area has been identified for assessment with reference to relevant industry guidance, sensitive receptors and agreement with the relevant highway authorities. A plan illustrating the extent of the study area, the expected route(s) of construction traffic, and anticipated numbers of vehicle movements (including vehicle type, peak hour and daily movements) should be included in the ES.
3.8.6	6.10.8.4	Impact assessment methodology	The impact assessment is proposed to be based on the methodology outlined in the Guidelines for the Environmental Assessment of Road Traffic (1993). The Inspectorate understands that this guidance is planned to be updated by the Institute of Environmental Management and Assessment (IEMA). The ES should take account of future updates where relevant.
3.8.7	6.10.8.15	Abnormal Load Route Assessment (ALRA)	The Scoping Report states that an ALRA will be undertaken however limited information on the methodology is provided. The Inspectorate expects that the ES should consider the worst case number of abnormal indivisible loads (AIL), types of vehicles that will be required and alternative routes. If mitigation is required, it should be clear how this will be secured in the DCO.

3.9 Marine: Physical Environment and Water Quality

(Scoping Report Section 7.3)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.9.1	7.3.3.16	Key sensitivities	The Scoping Report gives broad descriptions of four potential receptors within the physical environment and water quality chapter, with no specific reference to effects. As such, The Inspectorate is unable to provide detailed comments on the majority of the scope of this chapter. The ES should provide a full list of potential receptors and significant effects requiring assessment, and should seek to agree the scope of the assessment with the relevant statutory consultation bodies. Example topics which have been scoped into other NSIP schemes with an offshore element for the aspects of marine coastal processes and water quality, which may be relevant to the Proposed Development, include: • Water depth; • Tides; • Waves; • Bedload sediment; • Suspended sediment concentrations; • Coastal processes; • Coastal erosion; • Sediment physical properties; • Sediment quality; • Suspended solids;

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			• Physio chemical water quality; • WFD water bodies; and • Bathing water. Where potential marine processes or water quality effects are not assessed, the ES should provide a justification for scoping these out.
3.9.2	7.3.3.16	Key Sensitivities	In relation to the third sensitivity (Coastal Change), the Scoping Report is not clear whether it will refer to specific designations such as Sites of Special Scientific Interest (SSSIs) which are designated for geological or other habitat reasons, for example the Humber Estuary SSSI and Dimlington Cliff SSSI (as referred to in Natural England's consultation response). The ES should clearly list specific receptors, and include all receptors which may be affected by changes to the marine physical environment and water quality.
3.9.3	7.3.3.16	Key sensitivities	In relation to the fourth sensitivity (factors affecting brine discharge), the Inspectorate considers that the ES should assess both the factors affecting how brine would be discharged, and the potential effects of the brine discharge on identified marine processes and water quality. The ES should specifically address (but not be limited to) the potential for changes to the water circulation or water quality as a result of the introduction or large volumes of brine (as this is likely to have different physical properties to the surrounding seawater). It is noted that the brine discharge is planned to be in close proximity to the seawater intake. The ES should describe how it can be assured (as per 2.4.3.3) that the discharged brine will not end up returning to the inlet and potentially affecting the cavern construction and resulting in potentially adverse effects eg physical inability of the

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			injected seawater to dissolve any more salt if already mixed with previously discharged brine. The ES should also describe any effects, on marine physical processes and water quality, of the intake and outlet operating at the same time (and within other relevant chapters such as shipping and navigation, for example in relation to changes to the water movement regime to smaller leisure craft). The ES should also explain why a single discharge point is proposed rather than multiple, and how this ensures suitable brine dispersion.
3.9.4	7.3.6.2 – 7.3.6.3	Aspects to scope out: • Changes to (longshore) Sediment Transport affecting Morphological Features of the MCZ • Changes to Wave Regime and Coastal Morphology	As per the above comments on the absence of specific detail, and the consultation responses from relevant bodies such as Natural England and the Environment Agency in Appendix 2 of this Opinion, the Inspectorate is not in agreement that these matters can be scoped out of the ES.
3.9.5	7.3.7.4	Decommissioning	The Scoping Report assumes that the environmental effects of decommissioning will be no worse than those that occur during construction. The Inspectorate considers that further justification is required to support this assumption, given that the removal of the marine infrastructure may lead to potentially different effects to those occurring in construction. Paragraph 7.3.7.4 notes that decommissioning will be more than 30 years in the future, however the project description (paragraph 2.8.1.1) notes that the design life of the seawater facilities is expected to be 10 years. The ES should clarify the timing of the decommissioning of the marine infrastructure (described in paragraph

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			2.8.1.2 as the removal of the marine infrastructure protruding above the seabed).

ID	Ref	Description	Inspectorate's comments
3.9.6	7.3.4.3	Construction activities	Paragraph 2.5.3.3 states that a temporary vehicle access to the beach will be constructed at the cliff and restored upon completion of the beach works. The ES should provide further detail on the works proposed and the reinstatement to be achieved, and consider the impacts on physical processes and water quality arising from these works, where significant effects are likely to occur.
3.9.7	7.3.6.2	Sediment transport modelling	The Scoping Report indicates that the ES will rely on a semi quantitative approach. The ES should detail any agreement with the relevant statutory consultees relating to this approach.
3.9.8	n/a	Coastal Change Management Area	The Environment Agency's consultation response has identified that the Proposed Development is located within a Coastal Change Management Area (CCMA). The Scoping Report does not appear to refer to this. The Inspectorate therefore considers that the ES should assess the CCMA as a potential receptor to changes in the marine physical environment and coastal processes, including an assessment of effects of any remaining infrastructure etc that is to be left in situ beyond the project lifespan.

3.10 Marine: Benthic and Intertidal Ecology

(Scoping Report Section 7.4)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.10.1	7.4.5.2	Decommissioning	The Scoping Report anticipates decommissioning effects to be no worse than construction effects. Future baseline conditions are not and cannot be known at this time. In light of this, the future decommissioning plan should ensure that in event the structures protruding from the surface of the seabed are colonised, that effects on marine biota are mitigated.
3.10.2	Table 7.3 & 7.4.6.2	Construction: direct and indirect seabed disturbances leading to the release of sediment contaminants	The Scoping Report seeks to scope this matter out on the grounds that the previous surveys undertaken for the AGS discharge consent found no evidence of sediment contamination, and there are no nearby industrial discharges located near the Proposed Development. Due to the age of the survey data presented in the Scoping Report, the Inspectorate considers that more recent data is required to evidence scoping this matter out, and therefore considers that the planned benthic surveys should also assess baseline contaminant levels.
3.10.3	7.4.6.3	Accidental release of pollutants (construction, operation and decommissioning)	The Scoping Report argues that the risk of accidental pollution events will be small and only occur in the event of a vessel grounding or vessel-to-vessel collision. Accidental release of pollutants will be managed through implementing measures contained in an Emergency Response Plan (ERP), an outline of which will be provided in the ES. The Inspectorate agrees that such effects are capable of mitigation through standard management practices and can be scoped out of the assessment. The ES should provide details of the proposed mitigation measures to be included in the Emergency Response Plan and explain how such measures will be secured.

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.10.4	Table 7.3	Habitat loss and disturbance	The Scoping Report proposes to assess temporary habitat loss and disturbance during the construction of the marine infrastructure, and long-term effects on benthic habitat are scoped in for infrastructure protruding from the seabed only. This assumes therefore that for the buried infrastructure any losses will be reinstated/ recolonised, however there is no baseline data to support this. The potential for long-term habitat loss should be addressed in the ES.

ID	Ref	Description	Inspectorate's comments
3.10.5	Table 7.2	Baseline data	The Applicant's attention is drawn to the new multi-beam echo-sounder bathymetric survey of the Holderness coastline published by the British Geological Survey: https://nora.nerc.ac.uk/id/eprint/534206/1/OR22063.pdf
3.10.6	Table 7.3	Temporary habitat loss and disturbance	The Scoping Report proposes to assess the construction effects of temporary habitat loss and disturbance. It is unclear if this includes loss/change due to saline discharge, which for the avoidance of doubt, the Inspectorate considers should be scoped in (see point above regarding project phasing).
3.10.7	7.4.4.1	Existing infrastructure	The Scoping Report states that the Proposed Development will seek to maximise the use of existing marine infrastructure. This does not align with section 4.3 which suggests that the existing infrastructure has reached the end of its life. The ES should clarify the status of the existing infrastructure and how it relates to the Proposed Development.

3.11 Marine: Fish and Shellfish Ecology

(Scoping Report Section 7.5)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.11.1	7.5.5.1	Seawater abstraction impacts	The water abstraction phase (part of the construction of the Proposed Development) could lead to the entrainment and impingement of fish at the water intake, and mortality of eggs, larvae or juvenile fish. These impacts should be scoped into the assessment where significant effects are likely to occur. The ES should also demonstrate how the abstraction infrastructure would comply with the Eels (England and Wales) Regulations 2009.
3.11.2	7.5.6.2	Decommissioning	The Scoping Report anticipates decommissioning effects to be no worse than construction effects. Future baseline conditions are not and cannot be known at this time. In light of this, the future decommissioning plan should ensure that in event the structures protruding from the surface of the seabed are colonised, that effects on marine biota are mitigated.
3.11.3	Table 7.8 & 7.5.7.2	Construction: Physical damage and disturbance to mobile demersal fish and shellfish species.	The Scoping Report seeks to scope this matter out on the basis that the construction activities will be of local extent, short term duration and reversible. The Inspectorate agrees that there is no risk of likely significant effects arising from the construction of the marine infrastructure, and this matter can be scoped out of the ES.
3.11.4	Table 7.8, 7.5.76 & 75.7.9	Accidental pollution events resulting in potential effects on fish and shellfish receptors	The Scoping Report argues that the risk of accidental pollution events will be small and only occur in the event of a vessel grounding or vessel-to-vessel collision. Accidental release of pollutants will be

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
		(construction, operation and decommissioning)	managed through implementing measures contained in an ERP, an outline of which will be provided in the ES. The Inspectorate agrees that such effects are capable of mitigation through standard management practices and can be scoped out of the assessment. The ES should provide details of the proposed mitigation measures to be included in the ERP and explain how such measures will be secured.
3.11.5	Table 7.8	Construction: Seabed disturbances leading to the release of sediment contaminants.	The Scoping Report seeks to scope this matter out on the grounds that the previous surveys undertaken for the AGS discharge consent found no evidence of sediment contamination, and there are no nearby industrial discharges located near the Proposed Development. Due to the age of the survey data presented in the Scoping Report, the Inspectorate considers that more recent data is required to evidence scoping this matter out, and therefore considers that the planned benthic surveys should also assess baseline contaminant levels.
3.11.6	Table 7.8	Operation: Increased hard substrate and structural complexity as a result of the presence of the diffuser and anti-scour provisions.	The Scoping Report states that the anticipated magnitude of this impact would be negligible. The Inspectorate agrees that the local extent of the structures mean that significant effects are not likely, and this matter can be scoped out of the ES.
3.11.7	Table 7.8	Operation: physical disturbance resulting from maintenance during operation.	The Scoping Report proposes to scope this matter out due to the local extent and short duration of maintenance activities. The Inspectorate agrees that there is no risk of likely significant effects, and this matter can be scoped out of the ES.

ID	Ref	Description	Inspectorate's comments
3.11.8	n/a	Cofferdam dewatering	The Scoping Report does not refer to the potential for resident and migratory fish species to be trapped within the cofferdam and put at

ID	Ref	Description	Inspectorate's comments
			risk during any drawdown of water levels when creating a dry working area for construction. The ES should address the potential for this impact pathway, and assess effects where they are likely to occur, detailing any good practice mitigation measures such as 'fish rescue'.

3.12 Marine: Marine Mammals

(Scoping Report Section 7.6)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.12.1	Table 7.10 and 7.6.7.2	Construction Phase: non-piling noise (pipeline installation, dredging etc.)	The Scoping Report seeks to scope out non-piling activities (pipeline installation, dredging) on the basis that they are unlikely to produce construction noise that would affect marine mammal receptors beyond the immediate proximity of the Proposed Development (which constitutes a negligible fraction of their range). The Inspectorate agrees to scope this matter out on this basis.
3.12.2	Table 7.10 and 7.6.7.4	Operation Phase: disturbance from vessels Operation Phase: vessel collision risk	The Scoping Report seeks to scope out these matters based on the implementation of a vessel management plan which would determine vessel routing to and from operational areas and ports, to avoid areas of high risk. The Scoping Report does not provide an estimate of vessel number, however, and in the absence of this information the Inspectorate is unable to scope this matter out at this time.
3.12.3	Table 7.10	Noise from pumping brine through the pipeline	The Scoping Report anticipates that the noise from pumping the brine through the pipework is expected to be low as the pump itself will be located on land. The Inspectorate agrees to scope this matter out on this basis.
3.12.4	7.6.7.5	Reduction in prey availability	It is proposed that a reduction in prey availability is scoped out of assessment of marine mammals as the Scoping Report anticipates no significant effect is expected on prey, populations or habitats. The Fish and Shellfish Ecology Chapter proposes to scope in a number of impact pathways suggesting the potential for likely significant effects (Table 7.8). In light of this, the Inspectorate is unable to scope this matter out.

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.12.5	7.6.7.6	Reduction in foraging ability due to suspended sediment	The Scoping Report proposes to scope this matter out as it does not anticipate a significant increase in suspended sediment as a result of the Proposed Development, marine mammals are known to forage in areas of poor visibility, and the area in the Scoping Boundary has regular episodes of natural high turbidity. The Inspectorate agrees with the basis for scoping this matter out.

ID	Ref	Description	Inspectorate's comments
3.12.6	7.6.3.1	Baseline data	The Scoping Report references SCANS III (Small Cetaceans in European Atlantic waters and the North Sea) survey data. SCANS IV results are expected to be published in 2023/24; the ES should use the most recent baseline data available.
3.12.7	7.6.8.1	Underwater noise modelling	The Scoping Report states that "if the MMO advises that UXO clearance marine licenses should be applied for separately to the DCO application, then underwater noise modelling will not need to be undertaken for this aspect". The Inspectorate notes that sheet piling and geotechnical surveys are also potential noise sources and considers that noise modelling should be undertaken to support the DCO application irrespective of whether an UXO clearance marine license is contained with a Deemed Marine Licence.

3.13 Marine: Marine Archaeology

(Scoping Report Section 7.7)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.13.1	n/a	n/a	No matters have been proposed to be scoped out of the assessment (refer to Table 2.2, ID 2.2.3 regarding decommissioning).

ID	Ref	Description	Inspectorate's comments
3.13.2	Table 7.1	Study area	The Scoping Report defines the study area as the order limits for non-designated sites, and a 2km buffer for designated sites, however this has not been justified with reference to any zones of influence. The ES should include a clear justification as to how the study areas were chosen. The study area and receptors should be depicted on corresponding figures to aid understanding. It should be clear how the selected study areas relate to the extent of the likely impacts, for example the anticipated extent of sediment movement and settlement.
3.13.3	7.7.3.1	Baseline data presentation	The Inspectorate considers that the ES should present a full list of baseline data obtained from the relevant statutory consultees, as for example, the marine archaeology chapter does not refer to the Historic Environment Record or the National Record for the Historic Environment.
3.13.4	7.7.3.2 and 7.3.3.3	Baseline data presentation	The Scoping Report contains a discrepancy between these paragraphs in relation to the number of mapped wrecks. The ES should be consistent in its approach to describing the baseline environment.

ID	Ref	Description	Inspectorate's comments
3.13.5	7.7.3.8	Key Sensitivities	As per Historic England's scoping consultation response in Appendix 2 of this Opinion, the Inspectorate considers that the "lost" villages on the former coastline, and the potential for archaeological assets from these to be present within the study area, should be considered as a key sensitivity.
3.13.6	7.7.8.6	Extent of geophysical surveys	Paragraph 7.7.8.6 states that is also likely that some geophysical and sedimentary survey (such as vibrocores) would be conducted for engineering purposes, which may mean that full baseline geophysical survey for cultural heritage purposes will not be required. Note also Historic England's consultation response (Appendix 2) in relation to full coverage of geophysical survey. The ES should explain how the approach to intrusive works has been designed to obtain the maximum available information (for example whether it is possible to combine geotechnical / sediment or other ground investigation works with marine archaeological works). In the case where intrusive works for other purposes are undertaken prior to detailed archaeological works, the ES should detail how any adverse effects to archaeological assets are to be prevented. Should the Applicant rely on surveys conducted for other purposes, the ES should demonstrate that these are adequate for the purpose of the EIA or ensure that any gaps in coverage are filled.

3.14 Marine: Commercial Fisheries

(Scoping Report Section 7.8)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.14.1	Table 7.17 and 7.8.7.2	Operation: physical presence of marine infrastructure leading to reduction in access to, or exclusion from established fishing grounds	The Scoping Report argues that the AGS monopile is already present and part of the existing commercial fisheries baseline, and therefore the presence of the Proposed Development would not lead to a reduction in access to, or exclusion from, established fishing grounds. The Inspectorate agrees that significant effects are not likely and is content for this matter to be scoped out of the ES. Should the future baseline be likely to involve the removal of the AGS monopile, this should be explained in the ES and impacts to fishing operations assessed.
3.14.2	Table 7.17 and 7.8.7.3	Operation and maintenance: activities leading to displacement or disruption of commercially important fish and shellfish resources	The Scoping Report proposes to scope this matter out on the basis that operation and maintenance activities will be small scale and infrequent. The Inspectorate agrees that there is no risk of likely significant effects, and this matter can be scoped out of the ES.

ID	Ref	Description	Inspectorate's comments
3.14.3	7.8.3.4	Fishing effort	The Scoping Report argues that shore-based effort concentrated within the Proposed Development boundary is negligible due to a byelaw in place restricting the fishing season to several months of the year. If the Applicant proposes to undertake construction activities during the fishing closure season in order to minimise the effect on commercial fishing operations, this should be explained in the ES and secured using an appropriate delivery mechanism.

ID	Ref	Description	Inspectorate's comments
3.14.4	7.8.8	Methodology	This section of the Scoping Report explains how the baseline will be characterised; however it does not present a methodology for assessing the significance of effects. This must be included within the ES.
3.14.5	Table 7.16 and 7.8.8.1	Baseline data	The Scoping Report proposes to use existing baseline datasets and Table 7.16 refers to Vessel Monitoring System data for the five-year period 2012 – 2016 sourced from the Marine Management Organisation (MMO). The Applicant should ensure that it obtains the most recent datasets available.
3.14.6	n/a	Impact pathways	This aspect chapter of the Scoping Report does not contain reference to a number of potential impact pathways that are discussed in the Fish and Shellfish Ecology chapter. These include direct damage; accidental pollution events; noise disturbance to fish; increases in turbidity; discharges of brine; increased hard substrate (resulting in potential effects on commercial fish and shellfish receptors). The Inspectorate does not seek a duplication of assessment, but where these impact pathways have been scoped in for assessment via Table 3.11 of this Opinion, and assessment results indicate a significant effect on commercial fish and shellfish receptors, the ES should cross reference to these and an assessment of the implications for commercial fisheries operations be undertaken.

3.15 Marine: Seascape and Visual Resources

(Scoping Report Section 7.9)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.15.1	Table 7.20 and 7.9.6.2	Decommissioning	The Scoping Report states that decommissioning activities will be assessed where necessary, however, they are omitted from the likely effects table. For the avoidance of doubt, impacts from decommissioning activities should be assessed as far as reasonably practicable within the ES.
3.15.2	Table 7.20 and 7.9.7.2	Construction Activities visible day and night from onshore	The Scoping Report proposes to scope this matter out on the basis that offshore construction activities are unlikely to be visible to onshore receptors. Given the visual screening afforded by the cliff and the temporary duration of the construction of the marine infrastructure, the Inspectorate considers significant effects are not likely and is content for this matter to be scoped out of the ES, subject to confirmation within the ES (eg evidenced through a ZTV) that there would be no pathway for intervisibility.
3.15.3	Table 7.20 and 7.9.7.3	Operational Phase: AGS offshore monopile visible by day and night from onshore and offshore visual receptors	The Scoping Report proposes to scope this matter out on the basis that the existing monopile will be the only feature above sea and beach level. On this basis, the Inspectorate agrees that this matter can be scoped out from further assessment.

ID	Ref	Description	Inspectorate's comments
3.15.4	7.9.3.1	Study Area	The Scoping Report states that the study areas applied to the assessment will be a 2.5km radius around the permanent above ground infrastructure and a 1km radius around buried infrastructure.

ID	Ref	Description	Inspectorate's comments
			The ES should provide rationale for the establishment of these study areas.
3.15.5	7.9.4.3, 7.9.8.1 and 7.9.8.2	Basis for scoping and need for separate chapter	The Scoping Report argues that the works with the potential to influence seascape and visual resources are limited to the cofferdam, offshore pipelines and sub-surface diffuser. The Inspectorate considers that the construction, operation and decommissioning of the onshore infrastructure would also have the potential to influence the offshore visual receptors identified at 7.9.3.10 and the seascape character and should therefore be included in the assessment. The Scoping Report states that consideration will be given to the need for a separate SLVIA chapter once detailed information on the location of the construction areas is available. The Inspectorate considers that irrespective of the specific locations of the marine infrastructure, the SLVIA should be assessing the impact of the Proposed Development in its entirety on seascape character and offshore visual receptors for all phases of the development. Whether this information would be better presented in one chapter or two is left to the discretion of the Applicant.
3.15.6	Table 7.20 and 7.9.7.3	Existing monopile	Table 7.20 refers to the "reuse option" and paragraph 7.9.7.3 refers to "a scenario where [the existing monopile] may have some refurbishment". This does not align with section 4.3 which suggests that the existing infrastructure has reached the end of its life. The ES should clarify the status of the existing infrastructure and how it relates to the Proposed Development, including any proposed refurbishment works.
3.15.7	7.9.8.2	Viewpoints	The Scoping Report proposes not to undertake any SLVIA specific viewpoints or photography. The ES should justify how the proposed

ID	Ref	Description	Inspectorate's comments
			viewpoints are sufficient for assessing potential significant effects to seascape, and agree the viewpoint locations with the local authority.

3.16 Marine: Infrastructure and Other Users

(Scoping Report Section 7.10)

ID	Ref	Applicant's proposed aspect to scope out	Inspectorate's comments
3.16.1	7.10.10.1	Operational effects on infrastructure and other users	Based on the likely receptors identified within this chapter and the baseline information presented, the Inspectorate is in agreement that the construction and operational phases of the scheme are unlikely to affect these receptors and therefore an assessment of effects on marine infrastructure and other users can be scoped out of the ES.

ID	Ref	Description	Inspectorate's comments
3.16.2	n/a	n/a	n/a

3.17 Marine: Shipping and Navigation

(Scoping Report Section 7.11)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.17.1	Table 7.22	The Applicant seeks to scope out the following matters: • Construction / Decommissioning phases: Impact on third party vessel (fishing, recreational and commercial) routeing • Construction / Decommissioning phases: Obstruction to emergency search and rescue (SAR) activities • Construction / Decommissioning phases: Impact on fishing activity • Construction / Decommissioning phases: Anchor snagging risk	The Inspectorate considers that there is insufficient information presented within the Scoping Report to be able to scope out the requested matters. This absence of information includes matters outlined in 7.11.5.1: • Baseline and future baseline marine user activity; • Volume, direction and type of vessel movements; • Size and location of the construction exclusion zone and vessel access corridor; • Absence of sensitivity criteria for receptors; and • Requirement for mitigation measures detailed in Table 10.1. It is unclear why the Scoping Report considers that all marine infrastructure will be buried (as stated in the 2nd bullet point of 7.11.5.1) when the indicative cross section within Figure 2.3 clearly shows the brine diffuser head would be above the seabed, with no specific reference to the location of the seawater intake. In addition, paragraph 7.3.5.1 states that there may be a requirement for a scour protection (rock) layer, and the ES also makes no specific reference to future exposure of the pipework by coastal erosion, as has been encountered with the existing infrastructure. The Inspectorate therefore considers that these matters are required to be scoped into the ES. The ES should also consider where these potential effects are relevant to the operational phase, and confirm

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			any mitigation measures required e.g. permanent mapping of the marine assets.
3.17.2	Table 7.22 / 7.11.7.2	Vessel to vessel collision risk – Construction and decommissioning	Table 7.22 indicates that vessel to vessel collision risk is required to be scoped in, however, this matter is included in section 7.11.7 (effects scoped out of the EIA). For clarity, the Inspectorate considers that this matter should be scoped in, as there is insufficient information on vessel movements provided within the Scoping Report to be able to agree to scope this out.

ID	Ref	Description	Inspectorate's comments
3.17.3	Table 7.1	Study area	The Scoping Report defines the study area as "the Proposed Development area up to mean high water" yet it is unclear whether this refers to the order limits, construction exclusion zone, etc. The ES should include a clear definition of and justification for how the study areas were chosen. It should be clear how the selected study areas relate to the extent of the likely impacts.
3.17.4	7.11.8.2	Quantified Navigational Risk Assessment (NRA)	The Applicant should seek to agree the proposal to not undertake a full NRA with the relevant statutory consultees.

3.18 All project elements: Socio-economic Aspects

(Scoping Report Section 8.2)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.18.1	8.2.2.7	Potential effects on commercial fisheries	The Scoping Report states that potential effects on groups engaged in commercial fisheries will be addressed in the Commercial Fisheries chapter. The Inspectorate is content with this approach.
3.18.2	8.2.5.3	Impacts from flaring of hydrogen	The Inspectorate agrees that the impacts from intermittent use of flaring of hydrogen during operation of the Proposed Development are likely to be minimal. Therefore, the Inspectorate is content to scope this matter out of the assessment.

ID	Ref	Description	Inspectorate's comments
3.18.3	8.2.3.4 and 8.2.3.5	Census data - baseline	The Inspectorate notes the use of the 2011 Census data in the Scoping Report. The first phase of data from Census 2021 was published in June 2022. This, and any subsequent census data published during the production of the ES, should be used to inform baseline data and the ES assessment.
3.18.4	8.2.7	Mitigation	The Scoping Report states that relevant mitigation will be identified from other environmental aspects of the ES, including landscape and visual, air quality, and noise and vibration. Where such measures avoid what would otherwise be significant socio-economic effects, these measures, as well as the mechanism by which they are secured by the DCO, should be adequately described within the socio-economics chapter and cross-referencing provided to enable intra-project effects to be understood.

ID	Ref	Description	Inspectorate's comments
3.18.5	n/a	Effects on agricultural land	The Scoping Report does not refer to the effects on agricultural land within the socio-economic aspect. The Scoping Report 6.3.3.4 states that the Proposed Development is located within a predominantly undeveloped rural area dominated by agricultural farmland and 8.2.3.6 states that agriculture is one of the dominant forms of employment within Aldbrough. The Scoping Report 6.3.8.4 proposes an Agricultural Land Classification (ALC) Survey to classify the quality of land for agricultural use within the Proposed Development. The ES should cross reference with the finding of the ALC Survey to inform the baseline assessment of best and most versatile (BMV) agricultural land. The ES should have regard to the quantity and quality of land that will be permanently and temporarily lost to the Proposed Development, any potentially significant socio-economic effects in relation to the loss of agricultural land such as any associated loss of businesses or impacts on food security, and the potential for cumulative impacts at a regional scale with other plans and projects that result in a reduction of available BMV agricultural land. In addition, the ES should include details of the decommissioning phase including the after use of the Proposed Development, if the land can be returned to agricultural use a comparison to the baseline ALC survey should be provided.

3.19 All project elements: Waste Management

(Scoping Report Section 8.3)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.19.1	8.3.3.8	Effects of traffic increase due to waste disposal	The Scoping Report states that impacts from off-site transport will be assessed as part of Traffic and Transport. The Inspectorate is content with this approach. The ES should include an estimation of trip generation, traffic routes and cross reference where impacts are assessed within the ES eg air quality, noise and vibration, traffic and transport and visual amenity.
3.19.2	Table 8.7 and 8.3.7.2	Effects on landfill capacity for the decommissioning phase	The Scoping Report proposes to scope out this matter on the basis that large volumes of inert material are unlikely to be generated during the decommissioning phase and the majority of surface equipment will be amenable to recycling. The Scoping Report states that a Decommissioning Plan will be agreed with the Local Authority. The Inspectorate would expect to see this secured through the inclusion of an Outline Decommissioning Plan, or similar, submitted with the Application. The ES should clearly set out how decommissioning is to be assessed and any components which may remain following decommissioning.
3.19.3	8.3.7.3	Effects of solid wastes handling and storage on site	The Scoping Report proposes that effects of solid wastes handling and storage in working areas and on the operational Proposed Development site will be considered in other relevant Chapters including Geology and Ground Conditions and Water Resources and Flood Risk. The Inspectorate is content with this approach, however the ES should clearly set out potential impacts from the solid wastes handling and storage during construction, operation and decommissioning and cross reference where impacts are assessed within the ES.

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.19.4	8.3.7.4	Effects associated with discharge of wastewater (brine)	The Scoping Report proposes that effects associated with discharge of brine generated by solution mining of the caverns to the North Sea will be considered in Physical Environmental and Water Quality chapter. The Inspectorate is content with this approach, however the ES should estimate the duration, quantity and composition of brine discharge, potential impacts from the brine discharge and cross reference where impacts are assessed within the ES.

ID	Ref	Description	Inspectorate's comments
3.19.5	8.3.8.3	Worst case scenario	The Scoping Report states that the assessment will consider a worst case, assuming it is not possible to retain or reuse any excavated material on site and therefore requires offsite disposal. Where assumptions have been made, the ES should explain why these are realistic based on the principles of implementing the Waste Hierarchy.
3.19.6	8.3.8.6 and Table 8.8	Significance criteria	The Scoping Report proposes to apply the significance criteria used in a previous ES; the Applicant should make efforts to agree the use of these criteria with the local authority.

3.20 All project elements: Major Accidents and Hazards

(Scoping Report Section 8.4)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.20.1	8.4.6.3	Hazard categories	The Inspectorate notes the proposed list of hazard categories to be considered in the Major accidents and Disasters assessment, which includes 'extreme weather'. The ES should clarify what specifically is proposed to be considered in this context (eg strong winds, high precipitation etc).
3.20.2	8.4.7.1	Construction related health and safety hazards	Whilst a specific list is not provided, the Inspectorate are in agreement that it is typical for construction related health and safety requirements to be considered within the relevant construction risk assessments and by existing legislation, and therefore these can be scoped out of the ES.
3.20.3	8.4.7.1	Decommissioning	The Scoping Report proposes to limit the scope of the assessment to the construction and operational phases, however no justification is provided to scope out the decommissioning phase and therefore the Inspectorate is unable to agree to scope it out.

ID	Ref	Description	Inspectorate's comments
3.20.4	8.4.8.2	Hazard Identification (HAZID) method for assessment	The Scoping Report outlines the stages of the HAZID assessment undertaken for Proposed Developments such as this (as an anticipated upper tier Control of Major Accident Hazard (COMAH) site).

ID	Ref	Description	Inspectorate's comments
			The ES should explain how this process is to be applied to the required assessment (within the 2017 EIA regulations) of the likelihood of the Proposed Development causing, or vulnerability of the Proposed Development to major accidents and hazards, and the subsequent assessment of the significance of these effects in line with the guidance provided in 8.4.2.15. Where the risk categorisation within Table 8.9 is to be used, the ES should present a justification of why medium and high risks that cannot be reduced are considered acceptable and not significant, as whilst a risk may be as low as reasonably possible (ALARP), a medium or high risk still remains. The approach to extreme risks detailed within 8.4.8.7 states that where an intolerable risk is found after mitigation, this required more mitigation. The ES should explain why the additional mitigation has not been considered from the outset.

3.21 All project elements: Human Health

(Scoping Report Section 8.5)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.21.1	8.5.5.1	Impacts from flaring of hydrogen	The Inspectorate agrees that the impacts from intermittent use of flaring of hydrogen during operation of the Proposed Development are likely to be minimal. Therefore, the Inspectorate is content to scope this matter out of the assessment.

ID	Ref	Description	Inspectorate's comments
3.21.2	8.5.3.10 and 8.5.3.11	Census data - baseline	The Inspectorate notes the use of the 2011 Census data in the Scoping Report. The Applicant is referred to the Inspectorate's comments in ID 3.18.3 of this Opinion.
3.21.3	8.5.3.26	Assessment criteria	The Scoping Report states that the majority of the assessment will rely on professional experience and judgement due to no published assessment guidance or technical significance criteria to determine impacts on population and human health. Human health impacts resulting from the Proposed Development should be quantified where possible. Where professional judgement has been applied this should be clearly stated and suitably justified in the ES with reference to supporting evidence. The Applicant's attention is drawn to the consultation responses received from UK Health Security Agency in Appendix 2 of this Opinion regarding the assessment of significance.
3.21.4	8.5.6	Mitigation	The Scoping Report states that relevant mitigation will be identified from other environmental aspects of the ES, including landscape and

ID	Ref	Description	Inspectorate's comments
			visual, air quality, and noise and vibration. Where such measures avoid what would otherwise be significant human health effects, these measures, as well as the mechanism by which they are secured by the DCO, should be adequately described within the human health chapter and cross-referencing provided to enable intra-project effects to be understood.

3.22 All project elements: Cumulative Effects

(Scoping Report Section 9)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.22.1	Table 9.2	Ground conditions, contamination and hydrogeology	The Scoping Report proposes to scope this matter out of the Cumulative Effects Assessment (CEA) on the basis that potential hydrogeology and ground contamination related impacts will be mitigated and limited to within the application site boundary. The Inspectorate notes that the RLB currently overlaps with the Proposed Dogger Bank D Offshore Wind Farm boundary, and understands that the two schemes may be operationally related. Additionally, the Scoping Report notes that a hydrogen pipeline to connect the Proposed Development to the future hydrogen network would be the subject to a separate consent application. Given these interactions the Inspectorate considers the potential remains for likely significant effects within the boundary and therefore does not agree to scope this matter out.
3.22.2	Table 9.2	Water resources: terrestrial construction	The Scoping Report proposes to scope this matter out of the CEA on the grounds that construction aqueous wastes will be managed within the site and potential cumulative effects with other discharges will be considered under the permitting process. The Inspectorate recognises the role of the permitting regime, however an assessment of effects should be undertaken to inform the planning consent and therefore the Inspectorate is unable to scope this matter out of the ES.
3.22.3	Table 9.2	Socio-economic benefits	The Scoping Report does not consider it necessary for the purposes of the EIA to assess the small economic and employment benefits likely to arise from the Proposed Development cumulatively with other economic development activity in a regional context. The Inspectorate agrees that this can be scoped out of the CEA.

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.22.4	Table 9.2	Historic environment: construction	The Scoping Report argues that construction effects on buried archaeology, should any occur, would be limited to within the Proposed Development site boundary therefore there is no scope for cumulative effects with other developments. For the reasons given above (ID 3.22.1) the Inspectorate considers the potential remains for likely significant effects within the boundary and therefore does not agree to scope this matter out.
3.22.5	Table 9.2	Public health	The Scoping Report states that potential cumulative effects on public health will be considered under relevant topics and the Health Impact Assessment would consider the combined effects of various factors that together could affect health, therefore no further assessment would be required in the CEA. The Inspectorate agrees that on this basis this aspect does not need to be considered in the CEA chapter.
3.22.6	9.5.2.4	Major accidents and disasters	The Scoping Report explains that possible cumulative effects of major accidents and disasters will be integrally considered under that aspect, in addressing the possible consequences of (and the necessary controls for) a so-called 'domino effect' (ie a major incident at the Proposed Development having knock-on effects at a neighbouring COMAH facility or vice versa). The Inspectorate agrees that on this basis this aspect does not need to be considered in the CEA chapter.
3.22.7	n/a	Intra-project effects	Chapter 9 of the Scoping Report describes cumulative effects in regard to inter-project effects, but does not explicitly address the potential for intra-project effects, ie effects that arise as a result of the combination of topic specific effects. The Inspectorate considers that the ES should include a methodology for identifying intra-project effects and where effects combine to impact a common receptor these should be identified in the ES.

ID	Ref	Description	Inspectorate's comments
3.22.8	1.2.11	AGS Extension Planning Permission	The Scoping Report does not confirm the Applicant's intention in relation to the implementation or potential revocation of the existing TCPA permission for an extension of the existing AGS. Whilst it is presumed by the Inspectorate that this permission will not be implemented as it will be superceded by the Proposed Development if granted development consent, if this is not the case, then the ES should include the AGS extension within the cumulative effects assessment(s).
3.22.9	n/a	Other plans and projects	The Scoping Report does not list any specific plans or projects for inclusion in the assessment. The Applicant's attention is drawn to the (non-comprehensive) list provided by Natural England (Table 1 of their consultation response, provided in Appendix 2 of this Opinion). The Proposed Development may directly interact with other schemes such as the hydrogen pipeline connecting to the future hydrogen network and Humber low carbon cluster, the Dogger Bank D Offshore Wind Farm, and the Aldbrough Hydrogen Pathfinder project. The ES should clearly describe the interactions between the Proposed Development and other related developments, and assess the cumulative effects where relevant.

APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED

TABLE A1: PRESCRIBED CONSULTATION BODIES[1]

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive
The National Health Service Commissioning Board	NHS England
The relevant Integrated Care Board	NHS Humber and North Yorkshire Integrated Care Board
Natural England	Natural England
The Historic Buildings and Monuments Commission for England	Historic England
The Historic Buildings and Monuments Commission for England (OFFSHORE ONLY)	Historic England
The relevant fire and rescue authority	Humberside fire and rescue
The relevant police and crime commissioner	Humberside Police and Crime Commissioner
The relevant parish council(s) or, where the application relates to land [in] Wales or Scotland, the relevant community council	Aldbrough Parish Council
	East Garton Parish Council
The Environment Agency	Environment Agency
The Joint Nature Conservation Committee	Joint Nature Conservation Committee
The Maritime and Coastguard Agency	Maritime & Coastguard Agency
The Maritime and Coastguard Agency - Regional Office	Maritime and Coastguard Agency - Hull Beverley Marine Office
The Marine Management Organisation	Marine Management Organisation (MMO)

[1] Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the 'APFP Regulations')

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	East Riding of Yorkshire Council Highways
The relevant strategic highways company	National Highways
The Coal Authority	The Coal Authority
The relevant internal drainage board	Beverley and North Holderness Internal Drainage Board
	South Holderness Internal Drainage Board
Trinity House	Trinity House
United Kingdom Health Security Agency, an executive agency of the Department of Health and Social Care	United Kingdom Health Security Agency
The Crown Estate Commissioners	The Crown Estate
The Forestry Commission	Forestry Commission - Yorkshire and North East
The Secretary of State for Defence	Ministry of Defence

TABLE A2: RELEVANT STATUTORY UNDERTAKERS[2]

STATUTORY UNDERTAKER	ORGANISATION
The relevant Integrated Care Board	NHS Humber and North Yorkshire Integrated Care Board
The relevant NHS Trust	Yorkshire and the Humber Ambulance Service NHS Trust
Civil Aviation Authority	Civil Aviation Authority
Licence Holder (Chapter 1 Of Part 1 Of Transport Act 2000)	NATS En-Route Safeguarding

[2] 'Statutory Undertaker' is defined in the APFP Regulations as having the same meaning as in Section 127 of the Planning Act 2008 (PA2008)

STATUTORY UNDERTAKER	ORGANISATION
Universal Service Provider	Royal Mail Group
Homes and Communities Agency	Homes England
The relevant Environment Agency	Environment Agency
The relevant water and sewage undertaker	Yorkshire Water
The relevant public gas transporter	Cadent Gas Limited
	Northern Gas Networks Limited
	Scotland Gas Networks Plc
	Southern Gas Networks Plc
	Wales and West Utilities Ltd
	Energy Assets Pipelines Limited
	ES Pipelines Ltd
	ESP Connections Ltd
	ESP Networks Ltd
	ESP Pipelines Ltd
	Fulcrum Pipelines Limited
	GTC Pipelines Limited
	Harlaxton Gas Networks Limited
	Independent Pipelines Limited
	Indigo Pipelines Limited
	Last Mile Gas Ltd
	Leep Gas Networks Limited
	Quadrant Pipelines Limited
	Squire Energy Limited
	National Gas Transmission plc
	Eclipse Power Network Limited

STATUTORY UNDERTAKER	ORGANISATION
The relevant electricity distributor with CPO Powers	Energy Assets Networks Limited
	ESP Electricity Limited
	Fulcrum Electricity Assets Limited
	Harlaxton Energy Networks Limited
	Independent Power Networks Limited
	Indigo Power Limited
	Last Mile Electricity Ltd
	Leep Electricity Networks Limited
	Mua Electricity Limited
	Optimal Power Networks Limited
	The Electricity Network Company Limited
	UK Power Distribution Limited
	Utility Assets Limited
	Vattenfall Networks Limited
	Northern Powergrid (Yorkshire) plc
The relevant electricity transmitter with CPO Powers	National Grid Electricity Transmission Plc
	National Grid Electricity System Operation Limited

TABLE A3: SECTION 43 LOCAL AUTHORITIES (FOR THE PURPOSES OF SECTION 42(1)(B))[3]

LOCAL AUTHORITY[4]
East Riding of Yorkshire Council
City of Doncaster Council

[3] Sections 43 and 42(B) of the PA2008

[4] As defined in Section 43(3) of the PA2008

LOCAL AUTHORITY[4]
City of York Council
Hull City Council
North Lincolnshire Council
North Yorkshire Council

TABLE A3: NON-PRESCRIBED CONSULTATION BODIES

ORGANISATION
Royal National Lifeboat Institution

APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

CONSULTATION BODIES WHO REPLIED BY THE STATUTORY DEADLINE:
Beverley and North Holderness Internal Drainage Board
Cadent Gas Limited
East Garton Parish Council
Environment Agency
Historic England
Hull City Council
Joint Nature Conservation Committee
Maritime & Coastguard Agency
National Gas Transmission plc – two responses received (02 June and 07 June)
National Grid Electricity Transmission Plc
NATS En-Route Safeguarding
Natural England
Northern Gas Networks Limited
The Coal Authority
Trinity House
United Kingdom Health Security

From: Jon Church <[redacted]>
Sent: 08 June 2023 16:41
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>; Admin Support <adminsupport@yorkconsort.gov.uk>
Subject: RE: Planning Inspectorate - EN030003 – Aldbrough Hydrogen Storage Project – Reg 10 Consultation and Reg 11 Notification

Dear Sir

Thank you for e-mail informing the Board of the proposed consultation process for the above project.

The Board confirms that the proposed scoping area of the Aldbrough Hydrogen Storage Project lies outside of the Board's drainage district.

There are no Board maintained watercourses in the vicinity and as such it is considered that this proposal will have no material effect on the Board's operations.

Therefore, the Beverley & North Holderness Internal Drainage Board would have no comment to make on this consultation.

Thank you

Jon Church ¦ Engineer to Beverley & North Holderness IDB

✉ [redacted]

[redacted]

York Consortium Drainage Boards

Airedale Drainage Commissioners
Ainsty (2008) Internal Drainage Board
Beverley & North Holderness Internal Drainage Board
Foss (2008) Internal Drainage Board
Ouse & Derwent Internal Drainage Board

Derwent House | Crockey Hill | York | YO19 4SR ☎ Tel 01904 720785

For more information see *http://www.yorkconsort.gov.uk*

please don't print this e-mail unless you really need to

From: Feirn, Toby <[redacted]
Sent: 01 June 2023 16:12
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>
Cc: .box.Landservicesworkrequest.GD16 <LandServices@cadentgas.com>
Subject: RE: [EXT] Planning Inspectorate - EN030003 – Aldbrough Hydrogen Storage Project – Reg 10 Consultation and Reg 11 Notification

Hello Gary,

Thank you for sending the below.

Following a review of the scheme, I can confirm it falls outside of Cadent Gas's operational area and therefore have no interest in the scheme.

Kind regards

Toby

Regards

Toby Feirn

Planning and Consents Manager

COO - Operational Perfomance

Cadent

[redacted]

From: barry lee <[redacted]
Sent: 21 June 2023 10:45
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>
Subject: Scoping opinion

Dear Stephanie Newman

Thank you for your letter of 1st June reference EN030003-000007 and the Council consider that the following information should be provided in the Environmental Statement relating to the proposed development.

Full mitigation measures for preserving the quality of life of the local population throughout the construction period as there will be numerous issues including noise from drilling operations and inspection of properties prior to drilling operations commencing should be undertaken to monitor for any structural damage caused to properties during the entire drilling works.

A thorough and effective process of mitigation to protect all wildlife habitats in the area of operation especially great crested newts, water voles and bats.

Information on further detailed tree planting should be provided so as to act as a shelter belt for nearby residential properties.

Measures to protect the coastline in the area of operations from further coastal erosion should be included along with those necessary to protect the coastal path and the bridleway.

Information should be provided on how the setting of Grade 1 listed building St Michael's Church will be preserved and not be harmed by the proposed development.

Detailed measures on all aspects of site security should be provided as there is presently a lack of security on the other side of the drain.

Please acknowledge receipt of this message and thanks in advance.

Kind regards

Barry Lee
Clerk to East Garton Parish Council

The Planning Inspectorate	**Our ref:**	XA/2023/100004/01-L01
	Your ref:	EN030003-000007
[via email aldbroughhydrogenstorage@planninginspectorate.gov.uk]	**Date:**	28 June 2023

To whom it may concern,

EIA SCOPING OPINION CONSULTATION - ALDBROUGH HYDROGEN STORAGE PROJECT. ALDBROUGH HYDROGEN STORAGE PROJECT, EAST RIDING OF YORKSHIRE.

Thank you for your consultation on the EIA Scoping Opinion for the above project. We have reviewed the Scoping Report by ERM, referenced 0630444 Version 04 and dated 31 May 2023, and have the following advice:

We broadly agree with the topics to be scoped in and out of further assessment within the Environmental Statement (ES). We have provided our advice on the topics within our remit below. These are in the order prescribed by the Scoping Report for ease of reference.

CHAPTER 2: PROPOSED DEVELOPMENT

2.8 Decommissioning

This section is vague in some areas, in particular regarding the decommissioning process for subsurface infrastructure. We are supportive of the proposals to remove the marine infrastructure above the seabed, but further clarity on plans for the subsurface elements will also be important to help with identification of any residual risks beyond the operational stage (e.g. resulting from coastal recession beyond the project lifespan). This is particularly important given that part of the development falls within a Coastal Change Management Area (CCMA; see comments on Section 7.3 for more detail) and so should demonstrate capacity of adaptation to the impacts of climate change including coastal change.

PLANNING & POLICY CONTEXT

3.3 Planning and Consenting Context

As highlighted in section 3.3.2 of the Scoping Report, the construction and operation of the proposed development may require a number of environmental permits and early discussions with the Environment Agency about this will be important.

Cont/d..

Installations

The Scoping Report discusses the potential need to manage releases of hydrogen to the atmosphere (due to maintenance, emergency operation etc.) through either venting or flaring (section 2.7). We would like to see further exploration of the environmental costs/benefits of flaring versus venting. It is difficult to comment further at this point due to uncertainties around the scale and frequency.

Section 6.5.7.2 states "*the only relevant emissions to the atmosphere associated with the operation of the Hydrogen Storage Facility will be from emergency flaring and flaring during maintenance, and this is only if the flaring option is preferred over venting. Therefore, operation of the Hydrogen Storage Facility is scoped out of further assessment except for emergency flaring and flaring during maintenance."*

An issue that needs addressing further is developing a rationale for whether venting or flaring is preferable, this would necessarily include quantifying the impact of the Greenhouse Gas (GHG) potential of vented hydrogen. The 'UK Low Carbon Hydrogen Standard (Guidance on the greenhouse gas emissions and sustainability criteria' states that *"Incomplete combustion in any flares may result in some residual hydrogen being released to the atmosphere. This is expected to be negligible provided flares are well designed and maintained. It is especially important that "routine" vents are minimised. Occasional vents may be permissible, for example if they are deemed to be necessary for safety. As a priority, plants should minimise all cold venting of hydrogen."*

This standard points towards flaring as being a preferred option to venting. An evaluation by the applicant of the impact of venting should consider whether potential local impacts from NOx due to flaring is a better overall solution compared to the GHG implications of venting hydrogen.

The role of salt caverns as an emission source for hydrogen is considered as part of 'Fugitive Hydrogen Emissions in a Future Hydrogen Economy (DESNZ publication).' This suggests *that "Hydrogen emissions from underground storage of hydrogen in salt caverns are predicted to be very low. The main mechanism for leakage will be from the surface plant during maintenance or emergency venting and technologies could in principle be developed to reduce, or even eliminate these"*

As the Aldbrough project is at an early development stage it would seem appropriate from the outset to consider whether releases of hydrogen could be managed via flaring (as a minimum) rather than vented, to ensure that emissions from the storage sector are minimised in line with modelling done so far to support Department for Energy Security and Net Zero (DESNZ) ambitions and future expectations.

Failure to minimise fugitive hydrogen emissions will offset GHG emission savings that can be made by using hydrogen. Minimising hydrogen emissions through flaring may be a better option than venting as hydrogen recombining technology develops, particularly for potential hydrogen releases during planned maintenance. During consideration of flaring versus venting, opportunities for low NOx flare design can be explored to minimise potential local impacts.

Dewatering / Abstraction

If dewatering is required, it may require an environmental permit if it doesn't meet the exemption in The Water Abstraction and Impounding (Exemptions) Regulations 2017 Section 5: Small scale dewatering in the course of building or engineering works.

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Temporary dewatering from excavations to surface water: RPS 261 - GOV.UK (www.gov.uk)

If the applicant does not meet the exemption and require a full abstraction licence, they should be aware that some aquifer units may be closed for new consumptive abstractions in this area. More information can be found here: Abstraction licensing strategies (CAMS process) - GOV.UK (www.gov.uk)

Please note that the typical timescale to process a licence application is 9-12 months. The applicant may also need to consider discharge of groundwater, especially if it is contaminated. More information can be found here: Discharges to surface water and groundwater: environmental permits - GOV.UK (www.gov.uk)

Groundwater Activities

The use of drilling muds for the directional drilling may require a groundwater activity permit unless the 'de minimis' exemption applies. Early discussion about this is also recommended.

A notice of the intention to construct or extend a boring for the purpose of searching for or extracting minerals (Form WR11) under section 199 of the Water Resources Act 1991 is required. As assessment of the proposed drilling fluids that will be used may be required as part of this WR11 application if they are not covered by a groundwater discharge permit or exemption. This should be submitted along with a method statement detailing how the work will be undertaken in a way that protects water.

CHAPTER 6: TERRESTRIAL TOPICS

6.3 Geology & Ground Conditions

The site is underlain by superficial deposits comprising Glacial Till above Alluvium, which are classified as Secondary undifferentiated and Secondary A aquifers, respectively. The Rowe Chalk Principal aquifer lies beneath the superficial deposits and extends to around 600m below ground level. As the proposed development involves the drilling of 9 boreholes to create voids at a depth of around 1700 to 1900m bgl, the full geological sequence is included in the report; beneath the Rowe Chalk lies the Lower Lias Formation, Penarth Beds, Mercia Mudstone, Sherwood Sandstone, the salt-bearing Permian Zechstein Formation and the Coal Measures.

The chalk aquifer is known to be brackish and saline in this area, but should be protected, along with the secondary aquifers, from additional contamination or saline intrusion.

Section 6.3 of the Scoping Report identifies the onshore geology and ground conditions of relevance to the Hydrogen Storage Facility and considers the potential effects from construction, operation, maintenance and decommissioning activities. Geology and ground conditions have been scoped into the ES.

The report has identified the controlled water receptors that will be included in the Phase 1 Desk Study that has been proposed to support the ES. The Scoping Report goes on to state that the desk study, *"will then be followed up with further site-specific ground investigation surveys (including a groundwater monitoring regime) …. Any pertinent geological, hydrogeological and ground contamination information collected*

during further ground investigation can be used to inform the baseline." It may be that this baseline data will be useful baseline data for any permits that may be required at the site.

The physical intrusion of unsuspected contamination into groundwater will be included as part of the ES and will include risks from drilling fluids. An assessment of the risks to controlled waters from drilling muds, which can include numerous chemicals, is likely to be required. It is possible that a permit for their use may be required, unless an exemption applies. Early discussion with the Environment Agency about the permitting requirements is therefore important.

Paragraph 6.3.3.19 states that *"no potable groundwater abstractions are recorded within 500 m of the Hydrogen Storage Facility."* We are aware of a deregulated groundwater abstraction licence at TA 272 372 that falls inside the development area. The use is 'General Farming and Domestic' and, given the poor quality of the groundwater in this area, it is unlikely that it will be used for drinking water. However, the applicant should ensure that all private water supplies are considered in their assessment.

6.4 Water Resources and Flood Risk

Section 6.4 of the Scoping Report identifies the Water Resources and Flood Risk interests of relevance to the proposed development upon the hydrological environment. It considers the potential effects from construction, operation and maintenance and decommissioning activities of the proposed development.

<u>Groundwater</u>

In terms of assessing risks to controlled waters, there is some overlap with the previous chapter, 6.3 Geology and Ground Conditions.

Impacts on public and private water supplies (including licensed abstractions and discharges) during construction and operation have been scoped into the ES. Impacts on groundwater from wellhead drilling have also been scoped into the assessment. We welcome this, and as mentioned earlier, it is possible that an assessment of drilling fluids will be required.

Dewatering of groundwater is mentioned in Table 6.2, but it is not clear whether this will be from the chalk or just the superficial deposits. This information is important to foresee whether any activity could induce a large component of highly saline water into the chalk here.

It is not clear from the information presented how surface water will be managed at the site during construction and operation. For instance, the leaching area may have the potential to cause contamination of the underlying aquifer, so drainage must be carefully managed. This information should be included in the ES.

Plugging of wells at decommissioning will also need to be considered. Section 2.10.4 of the Scoping Report states that the assessment should include an appraisal of potential risks to groundwater and that an abstraction licence may be required for the removal of brine from the cavities. Early consultation regarding the need for environmental permits will be crucial and this should include discussion around the proposed disposal route for the brine, as a discharge consent may be required. The report mentions that an existing

abstraction will be used for the rewatering of the voids. The applicant must that this licence has sufficient capacity to support the rewatering.

Pollution Prevention

Having the appropriate pollution prevention measures in place to protect the water environment during the construction and operational phases is also an important factor that must be considered.

Pollution prevention has been scoped out of further assessment and will instead be incorporated into the Construction Environment Management Plan. We are satisfied with this approach, but the applicant should provide the following information:

The report states that soils and geology will only be exposed to impacts within the temporary construction and permanent surface infrastructure footprints (central processing area, well head platforms and onshore cofferdam) noting that the locations and extents of activities will be refined as the design progress. Having the appropriate pollution prevention measures in place to protect the water environment during the construction and operational phases is crucial. Foundations for the proposed buildings and infrastructure have not been mentioned in the Scoping Report. Pollution prevention from any foundation works, if they are required, should be incorporated into the ES.

Flood Risk

We are pleased to note that flood risk will be considered further within the ES.

The following policy and strategy documents are also relevant data sources that should be included in paragraph 6.4.3.1:

- The Flamborough Head to Gibraltar Point Shoreline Management Plan (SMP; 2010)
- National Flood and Coastal Erosion Risk Management Strategy
- The East Riding of Yorkshire (ERYC) Level 1 Strategic Flood Risk Assessment (SFRA)

The main site is predominantly in Flood Zone 1, with a low probability of flooding from rivers and/or the sea. The exception is the beach area, which is within Flood Zone 3, with a high probability of flooding from rivers and/or the sea. The Sequential Test will therefore be required to be passed, as outlined in National Policy Statement (NPS) EN-1 and National Planning Policy Framework (NPPF).

The vulnerability classification of this development has not been confirmed, but we have assumed it will be ‘essential infrastructure’, as defined in Annex 3 of the NPPF. If the site needs to be located in areas at risk of flooding, then the Exception Test must also be applied and a site-specific flood risk assessment (FRA) submitted. In line with the footnotes to Table 2 of the Planning Practice Guidance (PPG), ‘essential infrastructure’ located within Flood Zone 3a should be designed and constructed to remain operational and safe in times of flood.

The FRA should consider flood risk from various sources. The Level 1 ERYC SFRA provides a useful starting point for this assessment. Specifically, issues relating to surface water and groundwater will need to be considered alongside tidal and fluvial flood risk and, where present, artificial sources of risk from sewers or reservoirs.

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The applicant's infrastructure within the open sea must consider the influence of tides, storm surge and waves, ensuring it is resilient to flood and coastal risk, including (where relevant) accounting for the impacts of climate change.

The applicant should identify if additional modelling will be required. It may also be required to ensure the full range of climate change scenarios are incorporated, as per the current guidance, available at https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances, and accounting for residual sources of flood risk (e.g. breach, pump failure, etc…).

It is stated, in section 2.8 of the report, that the project has an operational lifetime of 30 years. Please note that the PPG (Paragraph: 006 Reference ID: 7-006-20220825) states that non-residential development should include an assessment of flood risk over at least 75 years. We highlight the need for full justification for assessing less than that, and that this may have a bearing on the evidence required and/or need for further modelling. We recommend that a longer period is assessed, to ensure that the development will remain safe form the effects of climate change. The assessment of future flood risk should incorporate a credible maximum scenario and should also be able to demonstrate how proposals can be adapted over their predicted lifetimes to remain resilient to the credible maximum climate change scenario, as required by NPS EN-1.

The applicant should contact the Environment Agency, at neyorkshire@environment-agency.gov.uk, to obtain any relevant flood risk modelling evidence that we hold. Please note that depending on their chosen location(s), there are likely to be gaps relating to the type and content of detailed modelling that may be available. The applicant may need to commission additional modelling where relevant to the development, for example where they require a credible maximum climate change scenario.

The open sea location (Figure 1.2) whilst relatively close to shore, is unlikely to have any impact on terrestrial flood risk. A consideration for any assessment is whether there is any in-combination or cumulative effects of these similar developments on flood risk or coastal processes, so we are pleased to note that the FRA will consider the cumulative impacts of flood risk (as stated in Table 9.2).

The applicant's infrastructure within the open sea must consider the influence of tides, storm surge and waves, ensuring it is resilient to flood and coastal risk, including (where relevant) accounting for the impacts of climate change.

There are no main rivers situated within the red line boundary, but there are ordinary watercourses that exist in close proximity to the current shoreline position. ERYC, as the lead local flood authority, should therefore be consulted. Part of the site is covered by the South Holderness Internal Drainage Board, who must also be notified of the proposals.

Water Resources

The proposal is to abstract 1,000m3/hour (or 0.28m^3/s or 24Ml/d) of sea water, from over 700m off the coast (Figure 2.3), for solution mining, with all of it being returned/pumped back at virtually the same location. In terms of water availability for abstraction, the volume is available. Unlike water quality discharge permits that do cover coastal water, the abstraction of sea water is exempt from licencing. All the water abstracted can then be used as seen fit by the applicant, but the applicant must be aware of the possible need for other consents / permits from the Environment Agency and other bodies, in relation to the use and discharge of waste from processes using sea water.

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Following The Water Abstraction (Transitional Provisions) Regulations 2017, dewatering for construction or quarrying purposes is now regulated by the Environment Agency, under the Water Resources Act 1991. This means that all processes involved with the construction and the subsequent operation of the site will require an abstraction licence to dewater more than $20m^3$/day. It is likely from the plans that large amounts of underground construction are going to take place and, once the solution mining begins, in all areas where more than $20m^3$/day is be removed, a licence is needed.

Currently, Abstraction and Impoundment is not part of the Environmental Permitting Regulations (EPR) and therefore a Water Quality discharge permit is needed, separate to any abstraction licence if, for example, water is abstracted through de-watering but then treated as part of a discharge permit.

There is an existing groundwater abstraction just out of the scoping area boundary, (licence NE/026/0033/011) with an annual limit of $500,000m^3$/year, which is held by SSE Hornsea Limited and referenced in the Scoping Report.

There is no indication of water usage by the workforce during construction of the wells and caverns and where this water is going to come from. Abstraction of fresh water not used for dewatering (consumptive usage) is subject to licencing under the Water Resources Act 1991. The site location means that it sits on the chalk aquifer and in the Humbleton Beck Catchment (water body ID GB104026066610), with part of the scoping area also falling into the Burton Pidsea Drain Lower Catchment (water body ID GB104026066590). Should the operator wish to use water for consumptive usage, any abstraction licencing here for fresh water will be assessed accordingly on a case-by-case basis. Both water bodies have limited water availability. It is also advisable for a location of this size to have water efficiency and storage capability; examples being rainwater harvesting or an abstraction into storage reservoirs only used in winter or during high flow conditions. In addition to this, any de-watered water may be stored for other usage, but this would mean secondary metering for the water that is consumed and water that is returned, as they are charged differently depending on water loss.

Although the existing abstraction licence held by SSE Hornsea is to be used for re-watering the existing caverns, in addition to new licences the applicant may wish to look at the possibility of utilising water from this licence for other purposes, should this be appropriate, or make variations to the current licence to fit any new usage or purpose. Should it be used for the new development, or to make a new application for a licence for any of the purposes listed above, the operator must contact psc-waterresources@environment-agency.gov.uk to ensure they have the correct forms and guidance to fill them in. As stated previously, consumptive and non-consumptive water use is charged differently, so additional metering may be required if there are separate processes on site that have 100% return to the environment and less than 100%, for example.

6.5 Air Quality

Where development involves the use of any non-road going mobile machinery with a net rated power of 37kW and up to 560kW, that is used during site preparation, construction, demolition, and/ or operation, at that site, we strongly recommend that the machinery used shall meet or exceed the latest emissions standards set out in Regulation (EU) 2016/1628 (as amended).

Use of low emission technology will improve or maintain air quality and support LPAs

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and developers in improving and maintaining local air quality standards and support their net zero objectives.

We also advise, the item(s) of machinery must also be registered (where a register is available) for inspection by the appropriate Competent Authority, which is usually the local authority.

The requirement to include this may already be required by a policy in the local plan or strategic spatial strategy document. The Environment Agency can also require this same standard to be applied to sites which it regulates. To avoid dual regulation, this advice should only be applied to the site preparation, construction, and demolition phases at sites that may require an environmental permit.

Non-Road Mobile Machinery includes items of plant such as bucket loaders, forklift trucks, excavators, 360 grab, mobile cranes, machine lifts, generators, static pumps, piling rigs etc. The Applicant should be able to state or confirm the use of such machinery in their application.

6.7 Ecology & Nature Conservation

All potential construction and post construction impacts have been identified and adequate mitigation put forward.

Section 6.8.5 ‘Mitigation’ is very thorough and suggests adequate mitigation for any loss of habitat. This will form be the basis for the Biodiversity Net Gain (BNG), which will soon be a legal requirement for Nationally Significant Infrastructure Projects. We therefore support the applicant’s intention to provide at least 10% BNG, as part of the proposals.

New developments should not only protect watercourses and their riparian corridors, but also provide overall net gain for biodiversity. Net gain for biodiversity is defined as delivering more or better habitats for biodiversity and demonstrating this through use of the Defra Biodiversity Metric. It encourages development that delivers biodiversity improvements through habitat creation or enhancement after avoiding or mitigating harm.

This approach is supported by section 4.5 of NPS EN-1, and paragraphs 174 and 179 of the NPPF.

The enhancement of biodiversity in and around development should be led by a local understanding of ecological networks, and should seek to include:

- habitat restoration, re-creation and expansion;
- improved links between existing sites;
- buffering of existing important sites;
- new biodiversity features within development; and
- securing management for long term enhancement

The Environment Act 2021 looks to ensure that the overall impact from development on the environment is positive. The Act includes measures to strengthen local government powers in relation to net gain and a minimum requirement of 10% biodiversity net gain.

The PPG provides guidance on the application of net gain and the Chartered Institute of Ecology and Environmental Management (CIEEM), together with CIRIA and the

Institute of Environmental Management and Assessment have published guidance on how to deliver net gain in practice. These can be downloaded here.

CHAPTER 7: MARINE TOPICS

7.3 Physical Environment & Water Quality

Coastal Change

The applicant refers to the relevant SMP, which is the Flamborough Head to Gibraltar Point Shoreline Management Plan. This contains the current information on the shoreline policy units. Paragraph 7.3.3.10 of the Scoping Report states that the SMP policy along this part of the coastline is to allow natural processes to continue along the frontage and that there will be no management intervention or defences constructed on the currently undefended frontages from now until 2055. However, this should read no management intervention or defences constructed until at least 2105, because the SMP policy is no active intervention for all 3 epochs.

The applicant will need to consider the implications of coastal change on the chosen landfall siting and construction methodology. This will also need to consider the impact on coastal processes both within the development site, and the consequences elsewhere. The Lead Coastal Risk Management Authority (CRMA) is ERYC. Consents may be required from them for new infrastructure on the coast, or activities affecting existing coastal infrastructure. Consents would be issued under the 1949 Coastal Protection Act.

We recommend the applicant speaks to ERYC, as the CRMA, to obtain latest data and projections on coastal erosion and change. They should also consider precautionary estimates for coastal change, ensuring a setback any infrastructure where coastal erosion is expected to occur. It is worth noting that the scale of change along this coast has resulted in a CCMA being designated by ERYC within their Local Plan. This can be seen on their Policies Map and is discussed within Policy ENV6 of their adopted Local Plan.

The National Coastal Erosion Risk Mapping may be of relevance to the assessment.

The applicant should identify a construction methodology for the landfall works that minimises the impact of their development on the environment. The east coast landfall section includes beaches and cliffs, and also some hard engineered structures. When considering suitable method of works, the applicant should consider the impact on:

- Nearshore coastal processes (including any trenching or temporary activities that could disrupt sediment transport)
- Natural features that influence wave action and local flood risk – for example cliffs and beaches
- Any temporary access requirements (e.g., ramps) to the coast, and whether this could introduce a mechanism for increased wave impacts (e.g., ramping or spray).
- Other existing development, ensuring no increase in flood risk.

Paragraph 2.4.3.3 of the Scoping Report states that a deep ‘wet well’ will be located approximately 450m to the west of the coastal cliffs. We are keen to understand why this distance was chosen. Does it take account of the possible erosion of the cliffs with potential for acceleration over the lifetime of the scheme and decommissioning? The negative impacts around the infrastructure becoming exposed on the beach, due to

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either cliff recession or beach drawdown, should be avoided, as should the need for heavy engineering to be placed on the shore. It would be best if there was no exposure of the infrastructure because of any erosion, accelerated or not. Some indicative future cliff line positions are provided in Figure 2.3. It will be important to provide clarity on how such projections are derived and account for the impacts of climate change.

Paragraph 2.4.3.4 states that the 'wet well' will likely be lined with pre-cast concrete sections. What consideration has been made for these becoming exposed, will they be designed to withstand wave loading and what consideration has been made for sea level rise.

With regard to the temporary cofferdam described in paragraph 2.4.3.5, what consideration has been given to scour around this? How long will it be in place? If the cofferdam area is filled post construction, how will the preferential weathering of the disturbed material be prevented?

Paragraph 7.3.6.3 of the Scoping Report states that "the scale of the Proposed Development is too small to have an impact on coastal morphology through changes to waves regimes." What about the possibility of the infrastructure being exposed to wave action at a later date? Will the parts of the structure that could become exposed to wave attack in the future be decommissioned before that happens?

Water Quality

Paragraph 6.4.8.7 indicates that a Water Framework Directive (WFD) Compliance Assessment may be required for the discharge to estuarine and coastal waters. However, the assessment may need to be broader than that. There is a requirement under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 to carry out a WFD Assessment, which should consider impacts to fish, including entrainment (for example, fish drawn into mechanical plant like cooling systems or tidal turbines) and impingement (for example fish trapped against debris screens). This relates to the abstraction of seawater.

The applicant is reminded that any oil, fuel or chemical spill within the marine/ intertidal environment must be reported to the Marine Management Organisation, Marine Pollution Response Team, at the details below:

Within office hours: 0300 200 2024
Outside office hours: 07770 977 825
Defra duty room (if no response at previous numbers): 0345 0818486
MMO emergency fax number (not manned 24 hours): 0191 3762682
Email: dispersants@marinemanagement.org.uk

7.4 – 7.5 Marine Ecology

Where potential impacts to aquatic habitats and water quality in the Yorkshire South Waterbody are identified, baseline ecological surveys should be completed (can include surveys for benthic species, marine mammals, shellfish, fish or eels).

The ES should explain the baseline conditions in respect to marine ecology and effort should be made to agree the sufficiency and location of any baseline surveys with relevant consultation bodies.

The ES should also identify potential impacts to marine ecology and assess any likely significant effects, as well as describe any measures proposed to mitigate such impacts.

Finally, the ES should include confirmation of how any such measures are secured. The ecology assessments within the ES should be undertaken with the most up-to-date version of the CIEEM guidelines.

The ES should identify and quantify all temporary and permanent habitat gains and losses by type (including any functionally linked land).

Abstraction

Abstraction (above 20 cubic meters per day) should only take place if the applicant has installed a screen of appropriate specifications (including type of screen, mesh size, screen angle and approach velocity) to prevent the entrapment, entrainment or impingement of fish (including the critically endangered European eel), at the point of abstraction. The applicant should maintain, repair or replace the screen in accordance with the manufacturer's specifications to ensure that it remains effective at all times and shall keep records of such maintenance. As discussed above, this should also be considered within a WFD compliance assessment.

Screening is a requirement of both the Salmon and Freshwater Fisheries Act 1975 (SAFFA) and Eels (England and Wales) Regulations 2009.

Shellfish

With regard to potential impacts to shellfish, paragraph 7.5.3.15 states "*as part of the mitigation and monitoring for the Proposed Development, a survey and assessment of the scale of effects on shellfish will be undertaken."* This information is important to foresee whether any activity could impact on shellfish in the local area. The Environment Agency would like to see more details of this, including the survey design and any proposed mitigation through the next stages of planning.

CHAPTER 8: PROJECT WIDE EFFECTS

8.3 Waste Management

Waste Moving Off Site

The Environmental Protection (Duty of Care) Regulations 1991 for dealing with waste materials are applicable to any off-site movements of wastes. The code of practice applies to the applicant if they produce, carry, keep, dispose of, treat, import, or have control of waste in England or Wales.

The law requires anyone dealing with waste to keep it safe and make sure it's dealt with responsibly and only given to businesses authorised to take it. The code of practice can be found here:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/506917/waste-duty-care-code-practice-2016.pdf

The applicant may need to register as a carrier of waste, information can be found here:
https://www.gov.uk/register-as-a-waste-carrier-broker-or-dealer-wales

Where a development involves any significant construction or related activities, we would recommend using a management and reporting system to minimise and track the fate of construction wastes, such as that set out in PAS402: 2013, or an appropriate equivalent assurance methodology. This should ensure that any waste contractors employed are suitably responsible in ensuring waste only goes to legitimate destinations.

The developer must apply the waste hierarchy as a priority order of prevention, re-use, recycling before considering other recovery or disposal options. Government guidance on the waste hierarchy in England can be found here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf

Site Waste Management Plans are no longer a legal requirement, however, in terms of meeting the objectives of the waste hierarchy and your duty of care, they are a useful tool and considered to be best practice.

Landfill Capacity

The applicant will need to review which landfill sites in East Yorkshire are open and accepting waste. Of the list provided in Table 8.5 of the Scoping Report, the only landfills currently accepting waste for deposit are Wilberfoss Quarry, Milegate Extension and Ripplingham Cutting. This will drastically reduce the volume of waste that can go to landfills in East Yorkshire and could in turn, put pressure on the remaining active landfills across Yorkshire. The landfills that are currently not accepting waste may start accepting waste in the future, but this is not certain. The transport of waste to landfills outside of East Yorkshire will also impact the carbon emissions of the project, as well as possible amenity issues associated with the increased number of vehicles coming onto and off site.

Use of Waste On-Site

If materials that are potentially waste are to be used on-site, the applicant will need to ensure they can comply with the exclusion from the Waste Framework Directive (article 2(1) (c)) for the use of, 'uncontaminated soil and other naturally occurring material excavated in the course of construction activities, etc…' in order for the material not to be considered as waste. Meeting these criteria will mean waste permitting requirements do not apply.

Where the applicant cannot meet the criteria, they will be required to obtain the appropriate waste permit or exemption from us.

A deposit of waste to land will either be a disposal or a recovery activity. The legal test for recovery is set out in Article 3(15) of the Waste Framework Directive as:

- Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
- We have produced guidance on the recovery test which can be viewed at: https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-recovery-plans-and-deposit-for-recovery-permits#how-to-apply-for-an-environmental-permit-to-permanently-deposit-waste-on-land-as-a-recovery-activity.

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The applicant can find more information on the Waste Framework Directive here: https://www.gov.uk/government/publications/environmental-permitting-guidance-the-waste-framework-directive

More information on the definition of waste can be found here: https://www.gov.uk/government/publications/legal-definition-of-waste-guidance

More information on the use of waste in exempt activities can be found here: https://www.gov.uk/government/collections/waste-exemptions-using-waste

Non-waste activities are not regulated by us (i.e., activities carried out under the CL:ARE Code of Practice), however the applicant will need to decide if materials meet End of Waste or By-products criteria (as defined by the Waste Framework Directive). The 'Is it waste' tool, allows the applicant to make an assessment and can be found here: https://www.gov.uk/government/publications/isitwaste-tool-for-advice-on-the-by-products-and-end-of-waste-tests

8.4 Major Accidents and Hazards

We recommend that the possibility of subsea land instability affecting the marine infrastructure or the effect of very large waves on the onshore facilities are considered as part of the major hazards assessment.

If you require anything further, please do not hesitate to contact me on the details below.

We trust this advice is useful.

Yours faithfully

Miss Lizzie Griffiths
Planning Specialist – National Infrastructure Team

Direct dial [redacted]
Direct e-mail [redacted]

End

Historic England

Ms Stephanie Newman
The Planning Inspectorate
Environmental Services, Operations Group 3
Temple Quay House, 2 The Square
Bristol
BS1 6PN

Direct Dial: [redacted]

Our ref: PL00793187

23 June 2023

Dear Ms Newman

EN030003 Aldbrough Hydrogen Storage Project
Reg 10 Consultation and Reg 11 Notification.

Project No. 0630444

EIA Scoping Report.

Thank you for your email of 1st June 2023 consulting Historic England about the above EIA Scoping Report.

While Historic England broadly welcomes measures to mitigate and adapt to the effects of climate change, we are aware that such developments have the potential to harm the significance of heritage assets and their settings.

To assist in the implementation of national planning policy Historic England has produced guidance on managing change within the settings of heritage assets. The guidance offers a framework for the consideration of setting, applicable to designated and non-designated heritage assets, and for assessing the implications of development affecting the setting of a heritage asset. It provides the principal Historic England advice on the issue of setting and should be used in conjunction with other relevant guidance. The *Setting of Heritage Assets* is available at: https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/

Our initial review indicates that the proposed development could, potentially, have an impact upon a number designated heritage assets and their settings in the area. In line with the National Planning Policy Framework (NPPF, paragraph 194), we would expect the Environmental Statement to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and sufficient to understand the potential impact of the proposal on their significance.

Scheduled Monuments: 'Two moated sites and associated features 520m north of

Historic England

Grimston Farm',. NHLE 1021241

Listed Buildings: All the listed builldings contained within the Burton Constable Registerd Park and Gaden; Blue Hall, grade II*, NHLE 1346612; Church of st Michael, East Garton, grade I, NHLE 1215863.

Registered Parks and Gardens: Burton Constable Registered Park and Garden, NHLE 1000921

We recommend the applicant contact the local authority Historic Environment Record for further information on designated heritage assets, and including the relevant local authority(s) for the location of conservation areas.

We reiterate that this is **not** an exhaustive list and other Heritage assets may also be identified as part of the assessment process which would require appropriate consideration. In particular, we would expect the assessment to clearly demonstrate that the extent of the proposed study area is of the appropriate size to ensure that all heritage assets likely to be affected by this development have been included and can be properly assessed. Methodologies that can help to inform the extent of the study area include a Visual Impact Assessment and the production of a Zone of Theoretical Visibility (ZTV) in line with current guidance. The ZTV of the proposed development should initially be based on topographical data before the impact of existing trees and buildings etc. on lines of sight is assessed.

Given the heights of the structures associated with the proposed development and the surrounding landscape character, this development is likely to be visible across a large area and could, as a result, affect the significance of heritage assets at some distance from this site itself.

We would also expect the Environmental Statement to consider the potential impacts which the proposals might have upon those heritage assets which are not designated. The NPPF defines a heritage asset as “a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest”. This includes designated heritage assets and assets identified by the local planning authority (including local listing). This information is available via the local authority Historic Environment Record (www.heritagegateway.org.uk <http://www.heritagegateway.org.uk>) and relevant local authority staff. Of particular concern within the proposed development limits would be archaeological remains of World War One and World War Two date.

We recommend that the applicant involve the Conservation Officer of East Riding of Yorkshire and the archaeological staff at Humber Archaeology Partnership, Hull,in the development of this assessment. They are best placed to advise on: local historic environment issues and priorities; how the proposal can be tailored to avoid and

minimise potential adverse impacts on the historic environment; the nature and design of any required mitigation measures; and opportunities for securing wider benefits for the future conservation and management of heritage assets.

In general terms, Historic England advises that a number of considerations will need to be taken into account when proposals for such storage structures are assessed. This includes consideration of the impact of ancillary infrastructure, such as tracks and grid connections, as well as the structures themselves

- The potential impact upon the historic character of the landscape, including landscape features which positively contribute to character.
- Direct impacts on heritage assets (buildings, monuments, sites, places, areas, landscapes), whether designated or not.
- Impacts on the settings of heritage assets since elements of setting can contribute to the significance of a heritage asset. An assessment of the impact on setting will be proportionate to the significance of the asset and the degree to which the proposed changes enhance or detract from its significance and the ability to appreciate the asset. In the consideration of setting a variety of views may make a contribution to significance to varying degrees. These can include long-distance views as well as the inter-visibility between heritage assets or between heritage assets and natural features. For further advice see *The Setting of Heritage Assets* (2nd ed)
- The potential for archaeological remains.
- Effects on landscape amenity from public and private land.
- The cumulative impacts of the proposal.

It is important that the assessment is designed to ensure that all impacts are fully understood. Section drawings and techniques such as photomontages are a useful part of this. We would encourage the applicant to develop a comprehensive landscaping scheme, and not rely merely on bunding or screening belts to reduce the visual impact of the storage facility.

Consideration should also be given to undertaking a practical exercise with either a crane or balloons erected at the height of the proposed structures so that all parties are to better able to understand the landscape impact of the proposals.

We have been engaged in other major developments where this technique has been used and it greatly assisted the identification of the key issues and impacts from which the resulting EIA was able to focus its assessment.

The assessment should also take account of the potential impact which associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of

alterations to drainage patterns that might lead to in situ decomposition or destruction of below ground archaeological remains and deposits, and can also lead to subsidence of buildings and monuments.

The development proposal has both terrestrial and marine archaeological impacts. Our specific comments on these aspects of the proposal are as follow:

Terrestrial archaeology:

The DBA for both the terrestrial and marine elements will require a comprehensive summary of the geomorphological history and chronostratigraphy of the proposed development area. This is required due to the dynamic nature of the area during the Holocene and beyond (Doggerland, coastal erosion, alluvial episodes, etc.). The summary (in effect a rudimentary / indicative deposit model) can then be used as a predictive tool, to a certain degree, and to inform the archaeological approach (further evaluation stages and mitigation). This element of work should draw upon the following Historic England best practice guidance (in addition to the guidance referenced in the document):

- *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record* (2015) <https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/>
- *Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits* (2020) <https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/>
- *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition)* (2011) <https://historicengland.org.uk/images-books/publications/environmental-archaeology-2nd/>

Geoarchaeology, palaeoenvironmental assessment, etc., is mentioned for the later stages of work, but not explicitly in relation to the DBA, which is an oversight and has implications for the effectiveness of later stages of work (choice of geophysical survey techniques, need for geoarchaeological borehole survey and detailed deposit modelling, long linear trial trenches versus stepped box trenches, etc.).

Specific comments:
6.9.3.3 (p.121) states, '*Understanding the depth and nature of alluvial deposits such as those associated next to the Newton Farm Drain, in addition to undertaking more extensive fieldwalking will be crucial to assessing the potential for buried Mesolithic archaeology within the Scoping Boundary*.' However, understanding the depth and nature of alluvial deposits also applies to other epochs, not just the Mesolithic.

Table 6.21 (p.130) [first row] infers that 'geoarchaeological assessment' will be a later

consideration after the production of the DBA but, as stated above, should actually form a fundamental component of the DBA in the form of a comprehensive summary of the geomorphological history and chronostratigraphy of the area.

6.9.8.5 (p.131) states, '*Geoarchaeological investigations and assessments may follow the DBA if deemed appropriate, to allow for a more rigorous understanding of the sub-surface conditions and*
the potential for buried archaeology to be encountered within the site.' However, without the geomorphological history and chronostratigraphic summary outlined above, it would be difficult to plan geoarchaeological fieldwork and to properly integrate geoarchaeology with geotechnical / GI surveys.

7.7.8.3 (p.189) outlines the key aims of the DBA to which 'a comprehensive summary of the geomorphological history and chronostratigraphy of the area' should be added.

Marine archaeology:

We consider that the marine heritage section is going in the right direction, but there are some matters they need to ensure they address within the PEIR and ES. Key points are as follows:

- Within Section 3 (Policy and Legislation) and Section 7.7. (Marine Archaeology) only the Marine and Coastal Access Act 2009 and Marine Policy Statement 2011 are considered. Given that all marine plans are now published, the relevant marine plan (East Inshore) should be referenced and included within the policy considerations.

- Section 7.7 does not provide more than a basic summary of the relevant guidance and best practice documents available. Many key documents are not explicitly referenced - particularly those in relation to surveys and WSIs. This section should be expanded within the Preliminary Environmental Information Report (PEIR) and Environmental Statement (ES).

- The detail provided in paragraphs 7.7.3.2 and 7.7.3.3 is contradictory in terms of how many UKHO recorded wrecks there are. Such errors should be avoided within the PEIR and ES.

- Within the brief summary of the marine archaeology baseline environment, there is no reference to the use of relevant HER data or the NRHE. This should be included within any desk based assessment included within the PEIR and ES.

- The baseline environment should also consider the relevance of the 'lost' villages that are close to the study area (Section 7.3 names these as Old

Aldbrough, Ringborough and Monkwell) in conjunction with sediment mobility in the area to identify the potential for material from these sites to reside within the study area.

- The description of non-designated heritage assets within Section 7.7 is very brief. The prehistoric elements focus far more on the very offshore material (from Doggerland) and makes no reference to the intertidal/nearshore sites show in Figure 7.6 that demonstrate Iron Age/Roman activity. Further detail, research and investigation would be required for the PEIR and ES.

- We note the scoping exercise has been based on four activities given, in short, as seabed disturbance, sediment kick-up, intertidal ground disturbance and setting impacts. Whilst we are pleased to see these activities are all scoped into the Environmental Impact Assessment (EIA) they only offer a general view of activities rather than consider specific impacts to archaeology and heritage sites - both known and unknown. Further detail should therefore be provided within the EIA.

- We note that DBAs, surveys and a setting assessment are all recommended to inform the baseline. These should be produced by an appropriate and experienced archaeological contractor following current relevant best practice and guidance documents.

- The premise of the mitigation measures set out in Section 7.7.5 is good but further detail on specific mitigation will be required in the PEIR and ES. In particular, the embedded mitigation measures are considered appropriate based on the level of inform provided at this time. However, for them to be effective we recommend early and ongoing engagement with an appropriate archaeological contractor.

- Mitigation should also include the consideration of the production of a WSI to inform the survey requirements to allow for adequate consideration of archaeology into survey design. As such, we recommend early engagement with an appropriate and experienced archaeological contractor, their input into the survey planning, and the production of a WSI and associated method statements to inform survey operations to ensure the best possible data is collected for archaeological purposes.

- We note from paragraph 7.7.8.6 a full baseline geophysical survey for cultural heritage purposes may not be required. We wish to highlight that areas to be directly impacts by construction activities, inclusive of an appropriate buffer area, should be covered by 100% coverage, high fidelity geophysical data to an appropriate resolution to resolve archaeological features present on the seabed. This should be assessed by an appropriate

and experienced archaeological contractor to inform the baseline environment and help determine mitigation required.

We note that 'operations' and 'maintenance', and 'decommissioning' is not considered within the Scoping Report. This will either need to be better considered within the application documents or separately consented.

If you have any queries about any of the above, or would like to discuss anything further, please contact me.

Yours sincerely,

Keith Emerick

Keith Emerick
Inspector of Ancient Monuments
[redacted]

cc:

Your Ref: EN030003-000007
Our Ref: JC/SM

The Planning Inspectorate
Operations Group 3
Temple Quay House
2 The Square
Bristol, BS1 6PN

Contact Officer: Simon Mounce
Telephone: [redacted]
Email: [redacted]
Textphone: [redacted]
Date: 29 June 2023

FAO: Stephanie Newman

Dear Sir/Madam,

Planning Act 2008 Section (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11

Application by Equinor New Energy Limited (the Applicant) for an Order granting Development Consent for the Aldbrough Hydrogen Storage Project (the Proposed Development)

Scoping consultation and notification of the Applicant's contact details and duty to make available information to the Applicant if requested

Thank you for consulting Hull City Council and inviting comments on the request for a Scoping Opinion in connection with the above project.

The Council wishes to reiterate its support for the development of renewable and low-carbon hydrogen technologies in general terms, particularly in light of the City and HEYLEP's net zero, clean growth economy, and renewables sector priorities.

6.5 Air Quality

There is potential for atmospheric emissions from construction traffic routed through the Hull City Council area to require Air Quality Assessment, to ascertain potential impacts upon sensitive receptors within the City. It is advised that such assessment be carried out in accordance with the appropriate British Standards, but also in accordance with local requirements set out within Appendix E* to Supplementary Planning Document 3 – Environmental Quality, to the Local Plan, especially when assessing significance. It should be noted that the requirement for Hull City Council is that significance is assessed against the current levels, and not simply achieving air quality objectives.

Hull City Council would welcome and encourage early discussion with the developer to clarify the proposed routes through the City, and identify any key junctions that may require particular attention in this regard.

6.10 Traffic and Transport

The scoping document does not identify, at this stage, the port through which materials required for the construction of the development will be imported, but assumes that traffic will be travelling from Hull (6.10.3.3, & 8.2.3.12, & 8.5.4.8), and does identify that cumulative traffic effects will be assessed as a matter of course in the Traffic and Transport Assessment by including cumulative schemes and considering future growth of traffic (page 167). The report identifies a traffic route on the A165 commencing at what appears to be the boundary with the city of Hull. Hull City Council would wish to understand the routing, number, timing and type of vehicle movements that are predicted to be using the City's highway network (both local and strategic).
Information highlighting the construction programme duration, detailing the construction peaks (i.e., heaviest periods of construction traffic) would be informative.

Page 137 para 6.10.5 (Mitigation) highlights that 'The Traffic and Transport ES Chapter will provide details of proposed mitigation, where appropriate. This is likely to be set out in specific plans including the following:

- A construction Worker Travel Plan
- A construction Traffic Management Plan (CTMP)
- An Operational Traffic Management Plan (OTMP)'

To support Hull City Council's understanding of the likely impact of the development on the City's highway network, the Council would request consultation on the scope and methodology of traffic assessment, including any detailed junction assessments, and consultation on the content of the above three plans.

Yours sincerely

John Craig MRTPI
Head of Planning
Hull City Council
2nd Floor, Guildhall
Alfred Gelder Street
Hull
HU1 2AA

*https://www.hull.gov.uk/sites/hull/files/media/Appendix%20E%20-%20SPD3%20Guidance%20for%20planners%20and%20developers.pdf

From: JNCC Offshore Industries Advice <OIA@jncc.gov.uk>
Sent: 02 June 2023 12:25
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>
Cc: JNCC Offshore Industries Advice <OIA@jncc.gov.uk>
Subject: JNCC response Planning Inspectorate - EN030003 – Aldbrough Hydrogen Storage Project – Reg 10 Consultation and Reg 11 Notification

Good Afternoon,

Thank you for consulting JNCC on EN030003 – Aldbrough Hydrogen Storage Project

Natural England is now authorised to exercise the JNCC's functions as a statutory consultee in respect of certain applications for offshore and offshore waters (0-200nm) adjacent to England.

We have checked and operations will be carried out in inshore waters or onshore, therefore the operation will be out of scope for JNCC and Natural England/ should provide a full response in this instance.

As such JNCC have not reviewed this application and will not be providing further comment.

Please contact me with any questions regarding the above comments.

Kind regards,

Jon Connon

Offshore Industries Advice Officer

Marine Management Team

JNCC, Inverdee House, Baxter Street, Aberdeen, AB11 9QA

Tel: [redacted]

Working pattern: Monday to Friday

Website **Twitter** **Facebook** **LinkedIn**

Helen Croxson
Maritime and Coastguard Agency
Bay 2/24
Spring Place
105 Commercial Road
Southampton
SO15 1EG

www.gov.uk/mca

Your Ref: EN030003-000007

23 June 2023

Via email: aldbroughhydrogenstorage@planninginspectorate.gov.uk

Dear Stephanie,

Application by Equinor New Energy Limited for an Order granting Development Consent for the Aldbrough Hydrogen Storage Development

Thank you for your email dated 1st June 2023 inviting comments on the scoping report for the proposed Aldbrough Hydrogen Storage Project. The scoping report has been considered by representatives of UK Technical Services Navigation, and the MCA would like to respond as follows:

The MCA has an interest in the works associated with the marine environment, and the potential impact on the safety of navigation, access to ports, harbours and marinas and any impact on our search and rescue obligations. The MCA would expect any works in the marine environment to be subject to the appropriate consents before carrying out any marine licensable works.

We note that the key components of the proposed development are:

- the storage facility;
- the marine infrastructure required to facilitate the solution mining of the caverns. This will include new below ground pipelines, seawater and brine storage facilities, pumping facilities, seawater intake and a diffuser. A temporary cofferdam will also be constructed on the beach at the base of the cliff to connect the pipework from offshore to onshore. The cofferdam will likely comprise steel sheet piles on all four sides and will be removed following construction.

It is our understanding that the offshore pipeline which connects the Hydrogen Storage Facility to the future hydrogen pipeline network will be the subject of a separate consent application. It is our understanding that the only infrastructure placed below the Mean High Water Level under this scoping report (apart from the cofferdam) which could be considered a danger or obstruction to vessels will be the two pipelines, the intake head and the brine diffuser as per Figure 2.1 Indicative layout of the proposed development.

On this occasion we note that the proposed works are relatively close inshore where the impact on shipping and navigation is likely to be low. However, there may be leisure, recreational and fishing activities taking place and vessels may need to deviate around the site during construction. During the operational phase, the intake head and the brine diffuser may have the potential to reduce the navigable water depth referenced to chart datum by more than 5%.

We note in the report that all aspects relating to shipping and navigation will be scoped out. However, we would expect the impact on vessel activity to be considered as part of the application, and any risks to be suitably mitigated. We also welcome the desk study to be conducted, supported by consultation with relevant stakeholders and operators, to establish the relevant status of the known and foreseeable offshore infrastructure and other marine user activity present or that may occur within the vicinity of the proposed development. Further baseline data will be acquired to confirm the low level of usage of the proposed development area.

We note that the seawater intake pipeline will be buried and no obstructions to navigation are expected at this time or any snagging risk to anchors or fishing gear. The report states the diffuser will be marked by a navigation buoy, and we would expect any marking arrangements to be discussed and agreed with Trinity House.

Therefore, on this occasion, I can confirm that the MCA is content that any risks to shipping and navigation could be mitigated through suitably worded conditions of consent and advisories at formal consent application stage. We would expect the application to include consideration of impact on vessel activity through the desk top study and any risks to be suitably mitigated.

In addition, we would like to make an observation on Table 10.1 Topics scoped out of further assessment. Under Shipping and Navigation and increased collision risk it states that "*anchor snagging as mitigation would reduce the likelihood of snagging during operation*". The mitigation to reduce the potential for the hazard (anchor snagging) caused by the obstruction should be included here.

I hope you find this information useful at Scoping Stage.

Yours sincerely,

[redacted]

Helen Croxson
Marine Licensing and Space Launch lead
UK Technical Services Navigation

From: .Box.Assetprotection (National Gas) <box.assetprotection@nationalgas.com>
Sent: 02 June 2023 12:38
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>
Cc: vickycashman@stirling-land.co.uk
Subject: RE: [EXTERNAL] Planning Inspectorate - EN030003 – Aldbrough Hydrogen Storage Project – Reg 10 Consultation and Reg 11 Notification 29694028

Good afternoon,

Thank you for your email.

Regarding planning application EN030003, there are National Gas Transmission assets affected in this area. I have raised this as an enquiry and hve passed the information to an engineer to review.

I have attached the enquiry for reference.

If you would like to view if there are any other affected assets in this area, please raise an enquiry with www.lsbud.co.uk. Additionally, if the location or works type changes, please raise an enquiry.

Kind regards

Asset Protection Team

National Gas Emergency Number: 0800 111 999*

*Available 24 hours, 7 days/week.
Calls may be recorded and monitored.
www.nationalgas.com

Asset Protection
National Gas Transmission
National Grid House
Warwick
CV34 6DA
Email: box.assetprotection@nationalgas.com
Tel: 0800 970 7000

Our Ref: 29694028 EN030003

Friday, 02 June 2023

Jackie Webb
National Grid House Gallows Hill, Warwick Technology Park, Warwick
Warwick
Warwickshire
cv246da

National Gas Transmission – High Risk Response Letter

Dear Sir/ Madam,

An assessment has been carried out with respect to National Gas Transmission plc's apparatus and the proposed work location. Based on the location entered into the system for assessment the area has been found to be within the High Risk zone from National Gas Transmission plc's apparatus and you **MUST NOT PROCEED** without further assessment from Asset Protection.

Before you go ahead with these works, you are required to send your plans and a description for to us to review them at box.assetprotection@nationalgas.com. We will contact you within 28 days of receipt.

It is **YOUR** responsibility to take into account whether you are required to or would benefit from referring to the HSE Land Use Planning App (LUP), available from HSE's website. (Please note for some works this is a requirement for them to take place) More information on the LUP is available at https://www.hse.gov.uk/landuseplanning/

Please note this response and any attached map(s) are valid for 28 days.

Yours sincerely

Asset Protection Team

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near National Gas Transmission plc's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to National Gas Transmission plc (NGT)

This assessment does **NOT** include:

- National Gas Transmission's legal interest (easements or wayleaves) in the land which restricts activity in proximity to National Gas Transmission's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact Asset Protection.
- Recently installed apparatus.
- Apparatus owned by other organisations, e.g. Cadent, National Grid Electricity Transmission plc, other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities.

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to National Gas Transmission plc easements or wayleaves nor any planning or building regulations applications.

National Gas Transmission plc or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the Asset Protection team via e-mail (box.assetprotection@nationalgas.com) or via the contact details at the top of this response.

Are My Works Affected?

Is your proposal an Initial Enquiry or Planned Works Application?

Initial Enquiry

As your works are at an "initial" stage, any maps and guidance provided are for information purposes only. This is not approval to commence work. You must submit a "Planned Works" enquiry at the earliest opportunity and failure to do this may lead to disruption to your plans and works. Asset Protection will endeavour to provide an initial assessment within 28 days of receipt of a Planned Works enquiry and, dependent on the outcome of this, further consultation may be required. In any event, for safety and legal reasons, works must not be carried out until a Planned Works enquiry has been completed and final response received.

Planned Works

Your proposal is in proximity of National Gas Transmission plc's apparatus, as shown on the attached map, which may impact, and possibly prevent, your proposed activities for safety and/or legal reasons.

You must not commence any work until you have sent details to us at box.assetprotection@nationalgas.com and have received a response back confirming that we have no objections to the work taking place. You must read and follow all the guidance provided when planning or undertaking any activities at this location.

We will contact you within 28 working days of you providing us with the details of your work at the email address above. Please email, or call us at 0800 970 7000, if you have not had a response within this time frame.

Assessment

Affected Apparatus
The apparatus that has been identified as being in the vicinity of your proposed works is:

- National Gas Transmission Pipelines and associated equipment

Requirements

National High Pressure Gas Pipelines

BEFORE carrying out any work you must:

- Ensure that no works are undertaken in the vicinity of our gas pipelines and that no heavy plant, machinery or vehicles cross the route of the pipeline until detailed consultation has taken place.
- Carefully read these requirements including the attached guidance documents and maps showing the location of apparatus.
- Contact the landowner and ensure any proposed works in private land do not infringe National Gas Transmission's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.
- Ensure that all persons, including direct labour and contractors, working for you on or near National Gas Transmission's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from Underground Services' This guidance can be downloaded free of charge at http://www.hse.gov.uk
- In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.

DURING any work you must:

- Ensure that the National Gas Transmission requirements are followed for work in the vicinity of High pressure pipelines including the supervision of the digging of trial holes.
- Comply with all guidance relating to general activities and any specific guidance for each asset type as specified in the Guidance Section below.
- Ensure that access to National Gas Transmission apparatus is maintained at all times.
- Prevent the placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over National Gas Transmission apparatus unless specifically agreed with National Gas Transmission in advance.
- Exercise extreme caution if slab (mass) concrete is encountered during excavation works as this may be protecting or supporting National Gas Transmission apparatus.
- Maintain appropriate clearances between gas apparatus and the position of other buried plant.

GUIDANCE

National Gas Transmission Network data

The Network map for National Gas Transmission assets can be downloaded at the following link in GIS format.
www.nationalgas.com/land-and-assets/network-route-maps

High Pressure Gas Pipelines Guidance:
If working in the vicinity of a high pressure gas pipeline the following document must be followed: 'Specification for Safe Working in the Vicinity of National Gas Transmission High Pressure Gas Pipelines and Associated Installation – Requirements for Third Parties' (SSW22). This can be obtained from:
<Link to SSW22 once it has been updated and signed off>

Essential Guidance document:
https://www.nationalgas.com/sites/gas/files/documents/8589934982-Essential%20Guidance.pdf

You should be aware of the following information regarding National Gas Transmission's high pressure underground pipelines and associated apparatus:

- Our underground pipelines are protected by permanent agreements with landowners or have been laid in the public highway under our licence. These grant us legal rights that enable us to achieve efficient and reliable operation, maintenance, repair and refurbishment of our gas transmission network. Hence we require that no permanent structures are built over or under pipelines or within the zone specified in the agreement, materials or soil are not stacked or stored on top of the pipeline route and that unrestricted and safe access to any of our pipeline(s) must be maintained at all times.

- The information supplied is given in good faith and only as a guide to the location of our underground pipelines. The accuracy of this information cannot be guaranteed. The physical presence of such pipelines may also be evident from pipeline marker posts. The person(s) responsible for planning, supervising and carrying out work in proximity to our pipeline(s) shall be liable to us, as pipeline(s) owner, as well as to any third party who may be affected in any way by any loss or damage resulting from their failure to locate and avoid any damage to such a pipeline(s).

- The relevant guidance in relation to working safely near to existing underground pipelines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance HS(G)47 "Avoiding Danger From Underground Services" and all relevant site staff should make sure that they are both aware of and understand this guidance.

- Our pipelines are normally buried to a depth of 1.2 metres or more below ground and further information may be found on the plans provided. Ground cover above our pipelines should not be reduced or increased.

- Any proposed cable crossings are subject to approval from National Gas Transmission, completion of a Deed of Consent and must remain a minimum of 600mm above or below the pipeline. All works associated with cable installation must be supervised by National Gas Transmission. Cables cannot be pulled through until a Deed of Consent is in place.

- If it is planned to use mechanical excavators and any other powered mechanical plant, it shall not be sited or moved above the pipeline.

- If it is planned to carry out excavation to a depth greater than 0.3 metres, embankment or dredging works, the actual position and depth of the pipeline must be established on site with our representative

and a safe working method agreed prior to any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.

- The digging of trial holes to locate the pipeline must be carried out under the supervision of our on-site representative following approval of RAMS. Excavation works may take place unsupervised no closer than 3 metres from the pipeline once its actual location has been confirmed. Similarly, excavation with handheld power tools may take place no closer than 1.5 metres away.

- For operational and safety reasons National Gas Transmission requires unrestricted access to our Above Ground Installations and Compressor Stations. We would request that any proposed changes to roads/layouts in the vicinity of our site have regard to the need to maintain access.

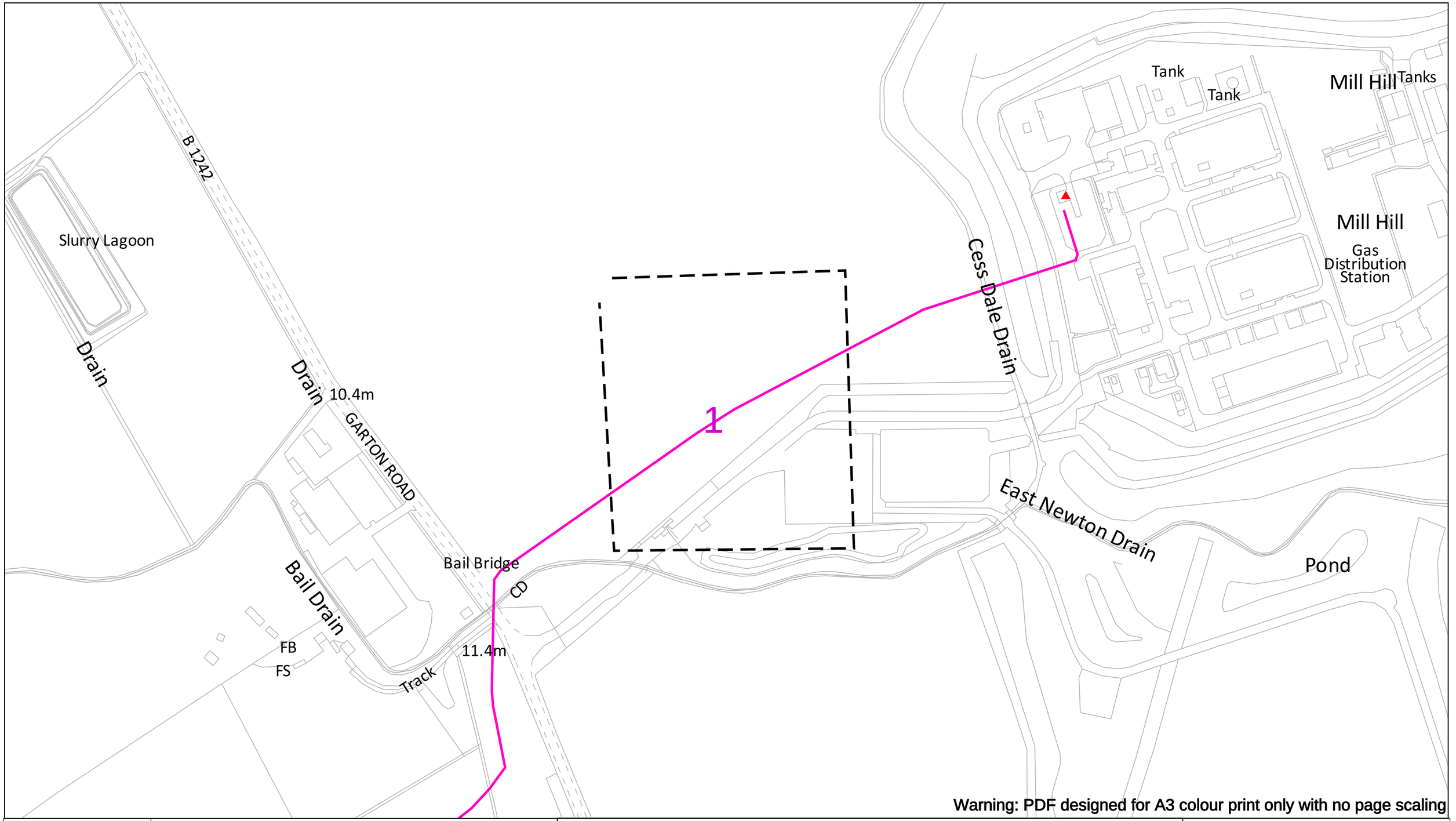
- Any construction traffic should either cross the pipeline using existing roads or at agreed crossing locations using agreed protective measures.

- Ground anchors for scaffolding stay wires should only be sited in the vicinity of the pipeline after the pipeline position has been confirmed on site with our representative and the ground anchor position agreed.

- If your proposals include the installation of wind turbines then the minimum separation between the pipeline and the nearest turbine should be 1.5 times the mast height.

- If your proposals include the installation of a Solar Farm, all assets must remain outside of the National Gas Transmission easement, all cable crossings must be agreed during the design stage, a Deed of Consent undertaken and an Earthing report must be provided for review. National Gas Transmission must retain access to its assets at all times once works have been completed.

The relocation of existing underground pipelines is not normally feasible on grounds of cost, operation and maintenance and environmental impact. Further details can be found in our specification for: safe working in the vicinity of National Gas Transmission high pressure gas pipelines and associated installations – requirements for third parties: T/SP/SSW/22 (see link above or copy enclosed)



Warning: PDF designed for A3 colour print only with no page scaling

Date Requested: 02/06/2023
Job Reference: 29694028
Site Location: 525755 436757
Requested by:
Miss Jackie Webb
Your Scheme/Reference: EN030003

Scale: 1:2500 (When plotted at A3)

IMPORTANT NOTICES

This plan shows those pipes owned by National Gas Transmission PLC in its role as a licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regards to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Gas Transmission PLC or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

National Gas Transmission Emergency Number: 0800 111 999
Available 24 hours, 7 days/week. Calls may be recorded and monitored

Warning: PDF designed for colour print only with no page scaling

100m

Dig Sites Area: Line:

NHP Mains

national gas transmission

National Gas Transmission
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

box.assetprotection@nationalgas.com

ENQUIRY SUMMARY

Received Date
02/06/2023 11:30

Work Start Date
23/06/2023

Your Reference
EN030003

Location
Centre Point: 525755 436757
X Extent:
Y Extent:
Postcode: HU114QJ

Map Options
Paper Size: A3
Orientation: LANDSCAPE
Scale: 1:2500
Real World Extents: 179m x 197m

Enquirer Details
Organisation Name: National Grid
Contact Name: Jackie Webb
Email Address: [redacted]
Telephone: [redacted]
Address: National Grid House Gallows Hill, Warwick Technology Park, Warwick, Warwick, Warwickshire, cv246da

Enquiry Type
Planned Works

Activity Type
Planning Applications

Work Types
Solar Farm

Notes/Works Description (if supplied)
Aldbrough Hydrogen Storage Project

Site Contact Name (if supplied)
Jackie Webb

Site Contact Number (if supplied)
07811021561

National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

Planning Inspectorate

Asset Protection
National Gas Transmission
National Grid House
Warwick
Direct Tel: [redacted]
Email - [redacted]

Planning Work?
Please enquire with us at
www.lsbud.co.uk

National Gas Emergency Number:
0800 111 999*

*Available 24 hours, 7 days/week.
Calls may be recorded and monitored.
www.nationalgas.com

Date: 07-06-2023

Our Reference: GE1_29694028
Your Reference: EN030003

Dear Jackie Webb / National Gas Transmission

Ref: Site Address Not Provided

National Gas Transmission has No Objection to the above proposal which is in close proximity to a High-Pressure Gas Pipeline – Feeder.

I have enclosed a location map to show the location of National Gas Transmission high-pressure gas pipeline(s) within the vicinity of your proposal and associated information below.

No Objection under condition:

National Gas Transmission will not object to the project provided that we are provided with the COMAH risk assessment and HSE response regarding Land Use Planning for review.

A QRA may be required to assess the possible increased working population within the building proximity distances as per IGEM/TD/1, and if additional protective measures are required on NGT's assets, as a result of the project, the costs are to be accepted by the developer.

Yours sincerely
Jackie Webb
Asset Protection Assistant

PLEASE READ CAREFULLY

- No buildings should *encroach within the Easement strip of the pipeline indicated above*
- No demolition shall be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline. Expert advice may need to be sought which can be arranged through National Gas Transmission.
- National Gas Transmission has a Deed of Easement for each pipeline which prevents change to existing ground levels, storage of materials. It also prevents the erection of permanent / temporary buildings, or structures. If necessary National Gas Transmission will take action to legally enforce the terms of the easement.
- We would draw your attention to the Planning (Hazardous Substances) Regulations 1992, the Land Use Planning rules and PADHI (Planning Advise for Developments near Hazardous Installations) guidance published by the HSE, which may affect this development.

- To visit the Land Use Planning site, please use the link below: https://www.hse.gov.uk/landuseplanning/methodology.htm

- You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and National Grid's specification for Safe Working in the Vicinity of National Gas Transmission High Pressure gas pipelines and associated installations - requirements for third parties T/SP/SSW22. You should already have received a link to download a copy of T/SP/SSW/22, from our Plant protection Team, which is also available to download from our website.

- To view the SSW22 Document, please use the link below: https://www.nationalgrid.com/uk/gas-transmission/document/113921/download

- A National Gas Transmission representative will be monitoring the works to comply with SSW22.

- To download a copy of the HSE Guidance HS(G)47, please use the following link: http://www.hse.gov.uk/pubns/books/hsg47.htm

- National Gas Transmission will also need to ensure that our pipelines access is maintained during and after construction.

- Our pipelines are normally buried to a depth cover of 1.1 metres however; actual depth and position must be confirmed on site by trial hole investigation under the supervision of a National Gas Transmission representative. Ground cover above our pipelines should not be reduced or increased.

- If any excavations are planned within 3 metres of National Gas Transmission High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a National Gas Transmission representative. A safe working method must be agreed prior to any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.

- Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been has been confirmed on site under the supervision of a National Gas Transmission representative. Similarly, excavation with hand held power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with NG supervision and guidance.

Pipeline Crossings

- Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at locations agreed with a National Gas Transmission engineer.

- All crossing points will be fenced on both sides with a post and wire fence and with the fence returned along the easement for a distance of 6 metres.

- The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. No protective measures including the installation of concrete slab protection shall be installed over or near to the National Gas Transmission pipeline without the prior permission of National Gas Transmission. National Gas Transmission will need to agree the material, the dimensions and method of installation of the proposed protective measure. The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to National Gas Transmission.

- Please be aware that written permission from National Gas Transmission is required before any works commence within the National Gas Transmission easement strip.

- A National Gas Transmission representative shall monitor any works within close proximity to the pipeline to comply with National Gas Transmission specification T/SP/SSW22.
- A Deed of Indemnity is required for any crossing of the easement including cables

Cables Crossing

- Cables may cross the pipeline at perpendicular angle to the pipeline i.e. 90 degrees.

- A National Gas Transmission representative shall supervise any cable crossing of a pipeline.

- An impact protection slab should be laid between the cable and pipeline if the cable crossing is above the pipeline.

- Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service must cross below the pipeline with a clearance distance of 0.6 metres.

All work should be carried out in accordance with British Standards policy

- BS EN 13509:2003 - Cathodic protection measurement techniques
- BS EN 12954:2001 - Cathodic protection of buried or immersed metallic structures – General principles and application for pipelines
- BS 7361 Part 1 - Cathodic Protection Code of Practice for land and marine applications
- National Gas Transmission Management Procedures

National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

Complex Land Rights
Ellie Laycock
Development Liaison Officer
UK Land and Property
[redacted]
Tel: +44 [redacted]

www.nationalgrid.com

SUBMITTED ELECTRONICALLY:
aldbroughhydrogenstorage@planninginspectorate.gov.uk

08 June 2023

Dear Sir / Madam

RE: Aldbrough Hydrogen Storage Project (the Proposed Development) Scoping Consultation

I refer to your letter dated 1st June 2023 regarding the above Proposed Development.

This is a response on behalf of National Grid Electricity Transmission PLC (NGET).

NGET has no existing apparatus within or in close proximity to the proposed site boundary but would like to be kept informed as the proposal progresses.

If you require any further information, please do not hesitate to contact me.

Yours faithfully

[redacted]

Ellie Laycock
Development Liaison Officer, Complex Land Rights

From: NATS Safeguarding <NATSSafeguarding@nats.co.uk>
Sent: 02 June 2023 15:04
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>
Subject: RE: Planning Inspectorate - EN030003 – Aldbrough Hydrogen Storage Project – Reg 10 Consultation and Reg 11 Notification[SG35475]

Our Ref: SG35475

Dear Sir/Madam

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully

NATS Safeguarding

E: natssafeguarding@nats.co.uk

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk

Date: 29 June 2023
Our ref: 436283
Your ref: EN030003

Consultations
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 900

The Planning Inspectorate
Environmental Services
Operations Group 3
Temple Quay House
2 The Square
Bristol
BS1 6PN
aldbroughhydrogenstorage@planninginspectorate.gov.uk

BY EMAIL ONLY

Dear Sir/Madam,

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11.

Application by Equinor New Energy Limited (the Applicant) for an Order granting Development Consent for the Aldbrough Hydrogen Storage Project (the Proposed Development).

Thank you for your letter dated 01 June 2023 consulting Natural England on the Aldbrough Hydrogen Storage Project Environmental Impact Assessment (EIA) Scoping Report. The following constitutes Natural England's formal statutory response; however, this is without prejudice to any comments we may wish to make in light of further submissions or on the presentation of additional information.

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.

Natural England notes that it has some previous engagement with the applicant on the project via Natural England's Discretionary Advice Service, providing advice on an offshore geophysical and environmental survey strategy.

Natural England notes that construction of the Project is not planned until 2026 and therefore advises the Applicant to set out how they are going to ensure that the conclusions of the ecological assessments remain valid prior to the commencement of construction activities.

It is proposed in the EIA Scoping Report that hydrogen will be transported into the project via a proposed hydrogen pipeline, which will be subject to consent via a separate application. Natural England considers that this presents a risk to the effective consenting of the project as a whole and it is unclear how the overall environmental impacts will and can be considered holistically to avoid the risk of 'salami slicing' or indeed stranded assets. Furthermore, there is no mention of the Aldbrough Hydrogen Pathfinder project, which has overlapping project boundaries and is proposed to be submitted as a planning application later this year. It is unclear how inter-reliant these projects are. It would be helpful for the Applicant to outline how their project aligns and interconnects with other hydrogen/low

carbon applications in the Yorkshire/Humber region and how in-combination impacts will be undertaken with consents for this project and others.

We highlight the necessity for EIA/HRA conclusions to be drawn based on the predicted impacts of a project in its entirety, including any ancillary infrastructure, rather than just elements of it. Therefore, a staggered approach has the potential to cause determination issues, as the project cannot be considered as a whole.

Natural England has encountered such issues previously during the separate examinations of the Triton Knoll generation and transmission assets and offers some initial advice on the matter based on these experiences. Please see the attached paper (please note that whilst the paper is advising on NSIPs associated with offshore wind development, we consider that there are parallels to the hydrogen production, storage and transport industry).

A robust assessment of environmental impacts and opportunities, based on relevant and up to date environmental information, should be undertaken prior to an application for a Development Consent Order. Annex A to this letter provides Natural England's advice on the scope of the Environmental Impact Assessment (EIA) and Environmental Statement (ES) for the proposed development.

Please send any new consultations or further information on this consultation to consultations@naturalengland.org.uk.

Yours sincerely

Emma Brading

Lead Adviser
Sustainable Development
Yorkshire and Northern Lincolnshire Area Team

Annex A – Natural England Advice on EIA Scoping

1. General Principles

Regulation 11 of the Infrastructure Planning Regulations 2017 - (The EIA Regulations) sets out the information that should be included in an Environmental Statement (ES) to assess impacts on the natural environment. This includes:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases
- Appropriately scaled and referenced plans which clearly show the information and features associated with the development
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen
- A description of the aspects and matters requested to be scoped out of further assessment with adequate justification provided1.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation etc.) resulting from the operation of the proposed development
- A description of the aspects of the environment likely to be significantly affected by the development including biodiversity (for example fauna and flora), land, including land take, soil, water, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation, cultural heritage and landscape and the interrelationship between the above factors
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, positive, and negative effects. Effects should relate to the existence of the development, the use of natural resources (in particular land, soil, water and biodiversity) and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment
- An outline of the structure of the proposed ES

1.1 Cumulative and in-combination effects

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in-combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure and activities should be included within the assessment.

An impact assessment should identify, describe, and evaluate the effects that are likely to result from the project in-combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information):

- existing completed projects;
- approved but uncompleted projects;

[1] National Infrastructure Planning (planninginsepctorate.gov.uk) Insert 2 – information to be provided with a scoping request, Advice Note Seven, Environmental Impact Assessment, Process, Preliminary Environmental Information and Environmental Statements

- ongoing activities;
- plans or projects for which an application has been made and which are under consideration by the consenting authorities;
- plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Natural England's advice on the scope and content of the ES is given in accordance with the National Infrastructure Planning Advice Notes:
https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

Table 1 includes a non-comprehensive list of other projects that are proposed along the Holderness Coast. The ES should consider potential impacts from the Project both alone and in-combination with all other relevant plans or projects.

Table 1: Non-comprehensive list of plans or projects that Natural England are aware of that should be considered in the ES

Project /Plan	**Status**
Hornsea Project Four Offshore Wind Farm (Ref: EN010098)	Predetermination. The Examining Authority issued a Recommendation Report to the Secretary of State on 22 November 2022. The Secretary of State has set a new deadline to make a decision on this application which is 12 July 2023.
Dogger Bank South Offshore Wind Farms (Ref: EN010125)	Section 42 consultation on the Preliminary Environmental Information Report is currently live. Scoping report submitted to the Secretary of State on 26 July 2022. The application is expected to be submitted to the Planning Inspectorate Q1 2024.
Dogger Bank D Offshore Wind Farm (Ref: EN010144)	Scoping Opinion adopted by the Planning Inspectorate on 01 June 2023. The application is expected to be submitted to the Planning Inspectorate Q4 2024.
Northern Endurance Partnership	Pre-submission. Scoping opinion provided 22nd October 2021.
Aldbrough Hydrogen Pathfinder	Pre-application.
Associated hydrogen pipeline	Pre-application.

1.2 Environmental data

Natural England is required to make available information it holds where requested to do so. National datasets held by Natural England are available at http://www.naturalengland.org.uk/publications/data/default.aspx.

Detailed information on the natural environment is available at www.magic.gov.uk.

Natural England's SSSI Impact Risk Zones are a GIS dataset which can be used to help identify the potential for the development to impact on a SSSI. The dataset and user guidance can be accessed from the Natural England Open Data Geoportal.

Natural England does not hold local information on local sites, local landscape character,

priority habitats and species or protected species. Local environmental data should be obtained from the appropriate local bodies. This may include the local environmental records centre, the local wildlife trust, local geo-conservation group or other recording society.

2. Biodiversity and Geodiversity

2.1 Ecological Aspects of an Environmental Statement

Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EcIA) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM) and are available on their website.

EcIA is the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.

The National Planning Policy Framework (NPPF) sets out guidance in paragraphs 174-175 and 179-182 on how to take account of biodiversity interests in planning decisions and the framework that the responsible authority should provide to assist developers. Further guidance is set out in Planning Practice Guidance on the natural environment.

2.2 International and European sites

The ES should thoroughly assess the potential for the proposal to affect designated sites. Internationally designated sites (e.g. designated Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, paragraph 181 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. (NB. sites falling within the scope of regulation 8 of the Conservation of Habitats and Species Regulations 2017 are defined as 'habitats sites' in the NPPF).

Article 6 (3) of the Habitats Directive requires an appropriate assessment where a plan or project is likely to have a significant effect upon a European Site, either individually or in combination with other plans or projects.

The proposed development site is within or may impact on the following European/internationally designated nature conservation site(s):

- Greater Wash Special Protection Area (SPA)
    - European Site Conservation Objectives for Greater Wash SPA - UK9020329 (naturalengland.org.uk)

- Humber Estuary Special Area of Conservation (SAC)
    - European Site Conservation Objectives for Humber Estuary SAC - UK00300170 (naturalengland.org.uk)

2.3 Nationally designated sites

Sites of Special Scientific Interest (SSSI) are protected under the Wildlife and Countryside Act 1981 (as amended). Further information on the SSSI and its special interest features can be found at www.magic.gov .

Natural England's SSSI Impact Risk Zones can be used to help identify the potential for the development to impact on a SSSI. The dataset and user guidance can be accessed from the Natural England Open Data Geoportal.

The development site is within or may impact on the following Site of Special Scientific Interest:

- Lambwath Meadows SSSI
  - Lambwath Meadows SSSI detail (naturalengland.org.uk)
- Humber Estuary SSSI
  - Humber Estuary SSSI detail (naturalengland.org.uk)
- Dimlington Cliff SSSI
  - Dimlington Cliff SSSI detail (naturalengland.org.uk)

The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.

Table 2: Potential impact pathways to SSSIs that Natural England advise to be considered in the ES	
Site name	**Potential impact pathways where further information /assessment is required**
Lambwath Meadows SSSI	• **Air quality** The ES should assess potential air quality impacts resulting from increases of road traffic emissions. Please see section 4 for further advice.
Humber Estuary SSSI	• **Coastal physical processes** The ES should assess potential impacts to coastal physical processes. Please see section 2.5 for further advice. • **Air quality** The ES should assess potential air quality impacts resulting from increases of road traffic emissions. Please see section 4 for further advice.
Dimlington Cliff SSSI	• **Changes to coastal morphology**

	The ES should assess potential impacts to coastal physical processes. Please see section 2.5 for further advice.

2.4 Marine Conservation Zones

Marine Conservation Zones (MCZs) are areas that protect a range of nationally important, rare or threatened habitats and species. The ES should include a full assessment of the direct and indirect effects of the development on the site and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.

The development site is within or may impact on the following Marine Conservation Zones:

- Holderness Inshore MCZ
    - Marine Conservation Zones: Holderness Inshore - GOV.UK (www.gov.uk)

The ES should consider the impacts of this development on MCZ interest features, to inform the assessment of impacts on habitats and species of principle importance for this location.

2.5 Coastal physical processes

The EIA Scoping report proposes that effects of construction activities on longshore sediment transport, coastal morphology, and changes to wave regimes be scoped out of the assessment.

Longshore sediment transport

Construction activities on the cliffs and intertidal zone of the Holderness Coast have the potential to impact longshore sediment transport. Such changes in longshore sediment transport should be assessed against the qualifying features/habitats of designated sites which are maintained by an uninterrupted supply of sediment.

Natural England requests that longshore sediment transport impact pathways are not scoped out at this stage for construction or operation, because the effects of works cannot yet be demonstrated to be negligible, due to:

- Uncertainty in the size and duration of use of the temporary cofferdam, possible scour protection and trenching activities.

Particular consideration will need to be given to the potential for cumulative and in-combination effects.

Changes to coastal morphology

The longshore sediment transport along the Holderness Coast is partly the result of the erosion of the soft till cliffs. The erosion rate and therefore the coastal morphology is vulnerable to solid protruding features (temporary or permanent) such as built-up access ramps, and to incised features such as bulldozed access ramps. Natural England therefore requests that the impacts of the development on coastal morphology cannot be demonstrated to be negligible at this stage due to:

- Uncertainty in the size, duration of use, and construction and restoration methods of the proposed vehicle access.

Changes to coastal morphology through changes to wave regimes have been scoped out. We consider that these should be scoped in for the cumulative and in-combination assessment.

Cumulative and in-combination effects

Natural England also notes that should the alone effects of the proposal on coastal physical processes be assessed to be negligible, there would still be potential for effects on physical processes from this development in-combination with other proposed coastal developments in the area, such as Dogger Bank D and Dogger Bank South offshore wind farms (see table 1).

2.6 Benthic and Intertidal ecology

Table 7.3 of the EIA Scoping Report '*Operational, changes to seabed habitats arising from effects on physical processes, including scour effects and changes in the sediment transport and wave regimes resulting in potential effects on benthic communities'* has been assessed as 'minor' for likely significant of effect. Whilst the predicted magnitude is small, the receptor has high sensitivity and we consider this should result in a 'moderate' assessment.

It is stated that the pipeline trenches will backfill naturally. Further information will need to be provided on the methods associated with this in the final application. We highlight that sidecasting sediment is often ineffective along this coastline due to longshore sediment transport.

Baseline data

We note that several of the baseline datasets for baseline characterisation are more than 10 years old. We welcome that the Project intends to conduct their own benthic surveys, and note that a new MBES survey of the Holderness coastline out to 10 km was recently published by the British Geological Survey (https://nora.nerc.ac.uk/id/eprint/534206/1/OR22063.pdf) which may be of use.

Contaminants

Impacts related to contaminants have currently been scoped out from further assessment. This is based on survey data from 2004, which we consider too old to be considered reliable. We advise that more recent data is provided to evidence scoping out, or that the planned benthic surveys for this project also assess baseline contaminant levels.

2.7 Fish and shellfish ecology

Operational impacts to fish from entrainment during water abstraction do not appear to have been considered. We advise that this is scoped in for further assessment.

2.8 Marine mammals

Operational disturbance and collision risk from vessels has been scoped out due to future provision of a Vessel Management Plans. Natural England advises the provision of a plan is not embedded mitigation and the commitments within the plans will be key. Until plans have been provided, we are unable to advise if impacts have been adequately addressed and

therefore the impacts cannot be scoped out. Natural England advises that outline plans including any mitigation measures should be provided at the time of Application.

2.9 Regionally and Locally Important Sites

The EIA will need to consider any impacts upon local wildlife and geological sites. Local Sites are identified by the local wildlife trust, geoconservation group or a local forum established for the purposes of identifying and selecting local sites. They are of county importance for wildlife or geodiversity. The ES should therefore include an assessment of the likely impacts on the wildlife and geodiversity interests of such sites. The assessment should include proposals for mitigation of any impacts and if appropriate, compensation measures. Contact the local wildlife trust(s), geoconservation group(s) or local sites body in onshore areas of search for further information.

2.10 Protected Species

The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats, pinnipeds (seals), cetaceans (including dolphins, porpoises whales), fish (including seahorses, sharks and skates), marine turtles, marine invertebrates etc.). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.

The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.

Natural England has adopted standing advice for protected species, which includes guidance on survey and mitigation measures. A separate protected species licence from Natural England or Defra may also be required. Information on the relevant legislation protecting marine species can be reviewed on the following link https://www.gov.uk/government/publications/protected-marine-species.

2.11 Priority Habitats and Species

Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. Lists of priority habitats and species can be found here. Natural England does not routinely hold species data. Such data should be collected when impacts on priority habitats or species are considered likely.

Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England and freely available to download. Further information is also available here.

An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys

should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.

The Environmental Statement should include details of:

- Any historical data for the site affected by the proposal (e.g. from previous surveys)
- Additional surveys carried out as part of this proposal
- The habitats and species present
- The status of these habitats and species (e.g. whether priority species or habitat)
- The direct and indirect effects of the development upon those habitats and species
- Full details of any mitigation or compensation measures
- Opportunities for biodiversity net gain or other environmental enhancement

2.12 Ancient Woodland, ancient and veteran trees

Ancient woodland is an irreplaceable habitat of great importance for its wildlife, its history, and the contribution it makes to our diverse landscapes. Paragraph 180 of the NPPF sets out the highest level of protection for irreplaceable habitats and development should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists.

The ES should assess the impacts of the Project on the ancient woodland and any ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.

The development site is adjacent to an area of ancient woodland:

- Bail Wood Ancient Woodland

Natural England and the Forestry Commission have prepared standing advice on ancient woodland, ancient and veteran trees. In particular, Natural England recommends that the assessment guide is used to focus the assessment of potential impacts within the ES.

2.13 Biodiversity Net Gain

The ES should use the most up to date version of the Defra Biodiversity Metric (currently 4.0) together with ecological advice, to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain.

The metric should be used to:

- assess or audit the biodiversity unit value of land within the development consent order
- calculate the losses and gains in biodiversity unit value resulting from proposed development
- demonstrate that 10% biodiversity net gain will be achieved

The proposed development should seek to achieve a measurable Biodiversity Net Gain (BNG) in accordance with the Environment Act 2021 and should follow the mitigation to deliver BNG on-site in the first instance, through habitat retention, enhancement and creation – preferably with consideration to local priority habitats and nature-based solutions. Where it is clearly demonstrated that this is not possible, off-site locations may be sought with a preference for those in the immediate vicinity. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies (LNRS). Work is currently underway to

develop LNRS, which will identify strategic priorities for nature protection, recovery, and enhancement.

Developers are encouraged find out which local sites are designated for nature conservation/ habitat restoration by contacting your Local Nature Partnership Local Nature Partnerships: map and key contacts - GOV.UK (www.gov.uk) to help identify opportunities.

It is recommended that application of the following guidance is demonstrated to order achieve BNG:

- Biodiversity Metric – Technical Supplement and User Guide
- Biodiversity Net Gain: Good Practice Principals for Development
- BS 8683: 2021 Process for designing and implementing Biodiversity Net Gain. Specification.

3. Landscape

3.1 Nationally Designated Landscapes

Whilst the Project is located outside of the Spurn Heritage Coast, there are potential for effects on landscape character and visual amenity as a result of changes in longshore sediment transport and coastal morphology which may affect the distinctive characteristics of the Heritage Coast. Paragraph 178 of the NPPF states that '*planning policies and decisions should be consistent with the special character of the area and the importance of its conservation'.* The ES should therefore assess potential effects at construction, operational and decommissioning phases.

Consideration should be given to the direct and indirect effects on the Spurn Heritage Coast and in particular the effect upon its statutory purpose. The management plan for the designated landscape may also have relevant information that should be considered in the EIA. Consideration should be given to relevant policies within East Riding of Yorkshire Council Local Plan (particularly Policy ENV 2) and the East Riding Landscape Character Assessment. Visibility studies should also be undertaken to ensure that the development does not have significant adverse effects on the setting of the Heritage Coast and that appropriate mitigation is in place.

3.2 Landscape and visual impacts

The environmental assessment should refer to the relevant National Character Areas. Character area profiles set out descriptions of each landscape area and statements of environmental opportunity.

The ES should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character.

A landscape and visual impact assessment should also be carried out for the proposed development and surrounding area. Natural England recommends use of the methodology set out in *Guidelines for Landscape and Visual Impact Assessment 2013 (*(3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and

Management. For National Parks and AONBs, we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.

To ensure high quality development that responds to and enhances local landscape character and distinctiveness, the siting and design of the proposed development should reflect local characteristics and, wherever possible, use local materials. Account should be taken of local design policies, design codes and guides as well as guidance in the National Design Guide and National Model Design Code. The ES should set out the measures to be taken to ensure the development will deliver high standards of design and green infrastructure. It should also set out detail of layout alternatives, where appropriate, with a justification of the selected option in terms of landscape impact and benefit.

The National Infrastructure Commission has also produced Design Principles Design Principles for National Infrastructure - NIC endorsed by Government in the National Infrastructure Strategy.

4. Rights of Way, Access land, Coastal access and National Trails

The ES should consider potential impacts on access land, public open land, rights of way and coastal access routes in the vicinity of the development. The National Trails website www.nationaltrail.co.uk provides information including contact details for the National Trail Officer. Appropriate mitigation measures should be incorporated for any adverse impacts. We also recommend reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green/blue infrastructure. Relevant aspects of local authority green/blue infrastructure strategies should be incorporated where appropriate.

The England Coast Path (ECP) is a new National Trail that will extend around all of England's coast with an associated margin of land predominantly seawards of this, for the public to access and enjoy. Natural England takes great care in considering the interests of both land owners/occupiers and users of the England Coast Path, aiming to strike a fair balance when working to open a new stretch. We follow an approach set out in the approved Coastal Access Scheme and all proposals have to be approved by the Secretary of State. We would encourage any proposed development to include appropriate provision for the England Coast Path to maximise the benefits this can bring to the area. We suggest that the development includes provision for a walking or multi-user route, where practicable and safe. This should not be to the detriment of nature conservation, historic environment, landscape character or affect natural coastal change. Consideration for how best this could be achieved should be made within the Environmental Statement.

As part of the development of the ECP a 'coastal margin' is being identified. The margin includes all land between the trail and the sea. It may also extend inland from the trail if:

- it's a type of coastal land identified in the Countryside and Rights of Way Act 2000 (CROW Act), such as beach, dune or cliff
- there are existing access rights under section 15 of the CROW Act
- Natural England and the landowner agree to follow a clear physical feature landward of the trail

Maps for sections of the ECP and further proposals for adoption are available here: https://www.gov.uk/government/collections/england-coast-path-improving-public-access-to-the-coast

3 Soils and Agricultural Land Quality

Soils are a valuable, finite natural resource and should also be considered for the ecosystem services they provide, including for food production, water storage and flood mitigation, as a carbon store, reservoir of biodiversity and buffer against pollution. It is therefore important that the soil resources are protected and sustainably managed. Impacts from the development on soils and best and most versatile (BMV) agricultural land should be considered in line paragraphs 5.168, 5.167 and 5.179 of the NPS for National Networks. Further guidance is set out in the Natural England Guide to assessing development proposals on agricultural land.

The following issues should be considered and, where appropriate, included as part of the ES:

- The degree to which soils would be disturbed or damaged as part of the development;
- The extent to which agricultural land would be disturbed or lost as part of this development, including whether any best and most versatile (BMV) agricultural land would be impacted.

Table 6.2 of the EIA Scoping Report scopes out *'Soil compaction and changes to current drainage and water infiltration to ground: Construction phase'.* However, we advise that the due to uncertainty around soil types present within the proposed development site, that this impact pathway should be scoped into the ES.

Natural England welcomes that the scoping report sets out that an Agricultural Land Classification (ALC) survey will be undertaken. It is not clear from the information provided the extent of the ALC survey, therefore we advise that the surveys cover the full extent of land within the red line boundary. For information on the availability of existing ALC information see www.magic.gov.uk.

- Where an ALC and soil survey of the land is required, this should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. The survey data can inform suitable soil handling methods and appropriate reuse of the soil resource where required (e.g. agricultural reinstatement, habitat creation, landscaping, allotments and public open space).
- The ES should set out details of how any adverse impacts on BMV agricultural land can be minimised through site design/masterplan.
- The ES should set out details of how any adverse impacts on soils can be avoided or minimised and demonstrate how soils will be sustainably used and managed, including consideration in site design and master planning, and areas for green

infrastructure or biodiversity net gain. The aim will be to minimise soil handling and maximise the sustainable use and management of the available soil to achieve successful after-uses and minimise off-site impacts.

Further information is available in the Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites and
The British Society of Soil Science Guidance Note Benefitting from Soil Management in Development and Construction.

4 Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue. For example, approximately 85% of protected nature conservation sites are currently in exceedance of nitrogen levels where harm is expected (critical load) and approximately 87% of sites exceed the level of ammonia where harm is expected for lower plants (critical level of 1µg) [1]. A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The Government's Clean Air Strategy also has a number of targets to reduce emissions including to reduce damaging deposition of reactive forms of nitrogen by 17% over England's protected priority sensitive habitats by 2030, to reduce emissions of ammonia against the 2005 baseline by 16% by 2030 and to reduce emissions of NOx and SO_2 against a 2005 baseline of 73% and 88% respectively by 2030. Shared Nitrogen Action Plans (SNAPs) have also been identified as a tool to reduce environmental damage from air pollution.

The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly, or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The ES should take account of the risks of air pollution and how these can be managed or reduced. This should include taking account of any strategic solutions or SNAPs, which may be being developed or implemented to mitigate the impacts of air quality. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk).

Table 6.11 of the EIA Scoping Report scopes out *'Operation of the Hydrogen Storage Facility'* based on the current power supply strategy for the proposed development. We advise that the ES should set out the mechanism of assessment should the power supply strategy be subject to change. The ES should consider the power supply alternatives and the likelihood of changes.

Natural England welcomes that with emissions of dust and exhaust gases associated with road traffic has been scoped into the ES. Natural England has produced guidance for public bodies to help assess the impacts of road traffic emissions to air quality capable of affecting European Sites. Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations - NEA001

Information on air pollution modelling, screening and assessment can be found on the following websites:

- Environment Agency Screening Tool for industrial emissions https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit
- Defra Local Air Quality Management Area Tool (Industrial Emission Screening Tool) –

[1] Report: Trends Report 2020: Trends in critical load and critical level exceedances in the UK - Defra, UK

England http://www.airqualityengland.co.uk/laqm

5 Water Quality

The planning system plays a key role in determining the location of developments which may give rise to water pollution, and hence planning decisions can have a significant impact on water quality, and land. The ES should take account of the risks of water pollution and how these can be managed or reduced.

Table 6.7 of the EIA Scoping report scopes out *'impacts from Chemical Pollution and Erosion/ Sedimentation: Construction'* by providing justification that consultation carried out with Natural England through Discretionary Advice Service (DAS) confirmed no anticipated significant impacts in relation to water quality. The scope of the DAS contract was to provide advice on an offshore geophysical and environmental survey strategy only. Natural England emphasises that this advice did not agree that there were no anticipated significant impacts in relation to water quality through HRA screening. We advise that potential impacts to water quality should be scoped in for further assessment in the ES.

Accidental pollution events during construction and operation have been scoped out as they will be managed through implementing measures contained in an Emergency Response Plan (ERP). Natural England advises the provision of a plan is not embedded mitigation and the commitments within the plans will be key. Until plans have been provided, we are unable to advise if impacts have been adequately addressed and therefore the impacts cannot be scoped out. Natural England advises that outline plans including any mitigation measures should be provided at the time of Application. We also advise that accidental spillages and leakages of oils, fuel and other polluting substances which could potentially enter the water environment be scoped in for further assessment with regards to designated sites and potential impacts to their interest features.

6 Climate Change

The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment 'by establishing coherent ecological networks that are more resilient to current and future pressures' (NPPF Para 174), which should be demonstrated through the ES.

Further information is available from the Committee on Climate Change's (CCC) Independent Assessment of UK Climate Risk, the National Adaptation Programme (NAP), the Climate Change Impacts Report Cards (biodiversity, infrastructure, water etc.) and the UKCP18 climate projections.

Natural England initial draft advice in relation to taking into account all aspects of offshore windfarm projects which may be subject to determination across multiple separate NSIPs with different owners for the array ('generation assets'), cable ('transmission assets') or other offshore windfarm NSIP where there are joint/shared infrastructure which may have cumulative impacts to nature conservation features.

Natural England welcomes the potential progression of an 'coordinated' approach to grid connection. In reducing the number of cables required for energy transmission, we recognise the potential for significantly reducing the area of impact created from multiple projects, thereby increasing options available to the projects to avoid, reduce and mitigate impacts to designated site features and the wider marine environment.

However, Natural England notes the potential consenting challenges this new approach is likely to have for offshore windfarms where there is likely to be separate NSIP applicants for the generation assets (offshore windfarm arrays), but also for the transmission asset. Should there be a requirement to sell the cable linking the array to the transmission asset to an Offshore Transmission Owner (OFTO) post-construction, this could present additional complexities. We observe such a scenario could potentially result in up to three Development Consent Orders (DCOs) and five deemed Marine licences being intrinsically linked.

Therefore, we advise that prompt consideration is required by the relevant parties to consider how the National Grid 'Coordinated Approach' can be implemented and robustly consented to ensure that OWF projects impacts can be considered and consented holistically (rather than 'salami sliced'), the risk of stranded assets can be avoided, and that offshore windfarm energy can be delivered in a timely manner.

Drawing from our experiences of the consenting process for both the Triton Knoll offshore windfarm 'array' NSIP and the Triton Knoll Electrical System NSIP, we provide the following advice on a without prejudice basis. This is with a view to identifying and helping to address the challenges that may be faced by offshore windfarm projects where i) multiple NSIPs are required but timeframes are unlikely to align, ii) the merits of the applications are unlikely to be considered by the same examining authority and iii) there are subsequent implications for DCO requirement and marine licence discharge.

Consideration of indirect, secondary and cumulative impacts

Natural England advises that in order for any one of the examining authorities to assess the direct, indirect, secondary and cumulative impacts from multiple NSIPs there will need to be sufficient information submitted on the indirect, secondary and cumulative impacts of the grid connection works. We draw your attention to paragraph 4.9.3 of the overarching National Policy Statement for Energy EN-1 ("EN-1") which provides that Applicants:

> *"must ensure they provide sufficient information to comply with the EIA Directive including the indirect, secondary and cumulative effects, which will encompass information on grid connections. The IPC must be satisfied that there are no obvious reasons why the necessary approvals for the other element are likely to be refused."*

Natural England accepts that EN-1 provides for a scenario where the grid connection and offshore array consents do not come forward in the same consenting process – that is clear from para. 4.9.1. However, it is Natural England's case that EN-1 envisages a situation where the Applicant has a detailed grid connection scheme worked up, but for administrative or other reasons does not join the two consents and progress them through the same process, but instead brings them forward via separate consenting processes.

However, unless the transmission assets consent is progressed in advance of the generation assets, it is anticipated in such cases that the Applicant will have a fully worked up scheme for the grid connection works, with complete assessments of its individual impacts and those cumulative impacts with the offshore array/s. Natural England draws support for this reading of EN-1 from the fact that para. 4.9.1 states that:

> *"it may be the case that the applicant has not received or accepted a formal offer of a grid connection from the relevant network operator at the time of the application, although it is likely to have applied for one and discussed it with them."* (emphasis added).

Nevertheless it remains unclear to Natural England how this would work in practice when the generation asset applicant is not the same as the transmission asset applicant. There is a risk that due to timeframes the coordinated approach may well result in a detailed offshore array scheme, but may not have detailed proposals relating to the transmission assets. This would not comply with EN-1.

Natural England advises that it cannot be reasonably contended that a cumulative assessment does not need to be carried out of a project that is not only intrinsically linked to the proposed development but is necessarily required to come forward for the proposed development to have any meaningful existence, resulting in a stranded asset - be that the generation asset or the transmission asset. This aligns with para. 4.9.3. of EN-1.

Consenting of associated NSIPs

In relation to the second requirement in para. 4.9.3 of EN-1 (where it must be satisfied that there are no obvious reasons why the necessary approvals for the other elements are likely to be refused), we highlight is that it is difficult for stakeholders such as Natural England to advise the ExA whether there were, or were not, any obvious reasons why the necessary approvals would be likely to be refused. This was certainly our experience at Triton Knoll OWF.

For Triton Knoll OWF, Natural England also advised that a condition was required that prevented the offshore works associated with the generation asset commencing until the necessary grid connection consents had been obtained. Such an approach could ensure that any significant indirect, secondary, and cumulative impacts that were identified during the consideration of the grid connections works effectively prevent the authorised development coming forward, as they would result in the necessary grid connection consents being refused.

Natural England considers that without such a condition being included in the relevant DCOs, it is very difficult to see how decision-makers could robustly consent the generation asset applications. This is because the ExA/decision-maker wouldn't have before it sufficient information on the indirect, secondary and cumulative effects of the proposed development with the grid connection works which the ExA is required to have under the EIA Regulations and EN-1. In addition, without the suggested condition, we are concerned it would theoretically allow the offshore works to be built without any means of connecting them to the grid.

Natural England highlights the risk that such a situation may pose to the ExA/decision-maker, as the rationality of the decision could be questioned were it to allow the Applicant to construct an offshore array that had no meaningful existence

because it could not be connected to the national grid. The proposed condition for Triton Knoll therefore ensured that such a perverse situation could not result.

Northern Gas Networks

Who are Northern Gas Networks?

We look after the 37,000km of gas mains in your area. We don't own the gas but it's our job to transport it safely to you.

The Planning Inspectorate
2 Temple Quay
BRISTOL
BS1 6PN

08 June 2023

Want to talk?

If you have any questions our Customer Care Team will be able to help:

0800 040 7766

customercare@northerngas.co.uk
northerngasnetworks.co.uk

Your Reference -
1400018516

Building in the area: finding gas mains

.....

Dear Sir/Madam,

Thank you for telling us you plan to carry out work at Aldbrough Hydrogen Storage Project, Aldbrough, N/A.

We don't have any mains pipes in this area, but there may be pipes that are owned by **other gas transporters** or **private companies** where you're planning to work. You should **contact them separately** to find out if they have pipes on your property.

If you'd like this information in Braille, large print or another language, please call us.

@NGNgas facebook.com/northerngasnetworks

we are the network

Staying safe near our pipes

You must make sure that everyone working on the site follows the safe digging practices outlined in HSE publication **HSG47 Avoiding Danger from Underground Services** before using mechanical plant. You can download these for free from: hse.gov.uk.

Kind regards

NGN Before You Dig Team

If you'd like this information in Braille, large print or another language, please call us.

Aldbrough Hydrogen Storage Project

Legend

Pipe with Terminators
- Main/Service Pipe (IP)
- Main/Service Pipe (MP)
- Main/Service Pipe (LP)
- Transmission Pipe (LTS)
- Decommissioned Main/Service Pipe
- Decommissioned Transmission Pipe (LTS)

Pipe without Terminators
- Main/Service Pipe (IP)
- Main/Service Pipe (MP)
- Main/Service Pipe (LP)
- Transmission Pipe (LTS)
- Decommissioned Main/Service Pipe
- Decommissioned Transmission Pipe (LTS)

Gas Network Assembly
- District Governor (RH)
- District Governor (IP)
- District Governor (MP)
- District Governor (LP)
- District Governor
- Decommissioned District Governor

Gas Network Junction
- Main/Service Pipe Junction
- Decommissioned Main/Service Pipe Junction
- End Closure (IP)
- End Closure (MP)
- End Closure (LP)
- Decommissioned End Closure
- Riser Pipe Junction
- IGT Offtake

Gas Network Device
- Flow Stop (MP)
- MEG Point (LP)
- Pressure Measurement (IP)
- Pressure Measurement (MP)
- Pressure Measurement (LP)
- Purge Point (IP)
- Purge Point (MP)
- Purge Point (LP)
- Site Inlet-Outlet (IP)
- Site Inlet-Outlet (MP)
- Site Inlet-Outlet (LP)
- Site Inlet-Outlet (LTS)
- Stand Pipe (IP)
- Stand Pipe (MP)
- Stand Pipe (LP)
- Syphon (IP)
- Syphon (MP)
- Syphon (LP)
- Test Point (MP)
- Test Point (LP)
- Valve (IP)
- Valve (MP)
- Valve (LP)
- Decommissioned Flow Stop
- Decommissioned MEG Point
- Decommissioned Pressure Measurement
- Decommissioned Purge Point
- Decommissioned Site Inlet-Outlet
- Decommissioned Stand Pipe
- Decommissioned Syphon
- Decommissioned Test Point
- Decommissioned Valve

Non-Network Asset
- Change in Diameter
- Change in Material
- Crossover Connection
- Depth of Cover

Asset Protection Layers
- Slabbing
- Sleeving
- Protection Boundary

Legacy Dimension Line
- Abandoned
- As-Built

- Scheduled Monument
- SSSI
- Network Analysis
- IGT Area
- NTS
- Contact Zone Area

Wayleaves
- Easements
- Properties

Electric
- Cross-Section - Calc Marker Locations
- Cross-Section - Confirmed Locations
- Underground Cables (132kV)
- Underground Cables (66kV)
- Underground Cables (33kV)
- Underground Cables (25kV)
- Underground Cables (20kV)
- Underground Cables (11kV)
- Underground Cables (6kV)
- Underground Cables (3kV)
- Underground LV Mains Cables
- Underground LV Service Cables
- Underground LV Service - Assumed Route Cables
- Underground LV Service - Logical Connection Cables
- Underground Auxiliary Cables
- Underground Left In Situ Cables (132kV)
- Underground Left In Situ Cables (66kV)
- Underground Left In Situ Cables (33kV)
- Underground Left in Situ HV Cables
- Overhead Left In Situ Cables (132kV)
- Overhead Left In Situ Cables (66kV)
- Overhead Left In Situ Cables (33kV)
- Overhead Left in Situ HV Cables
- Overhead Conductors (132kV)
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- Overhead LV Mains
- Overhead LV Service
- Overhead Auxiliary

1: 10,000

0 — 600

Meters

Disclaimer Information

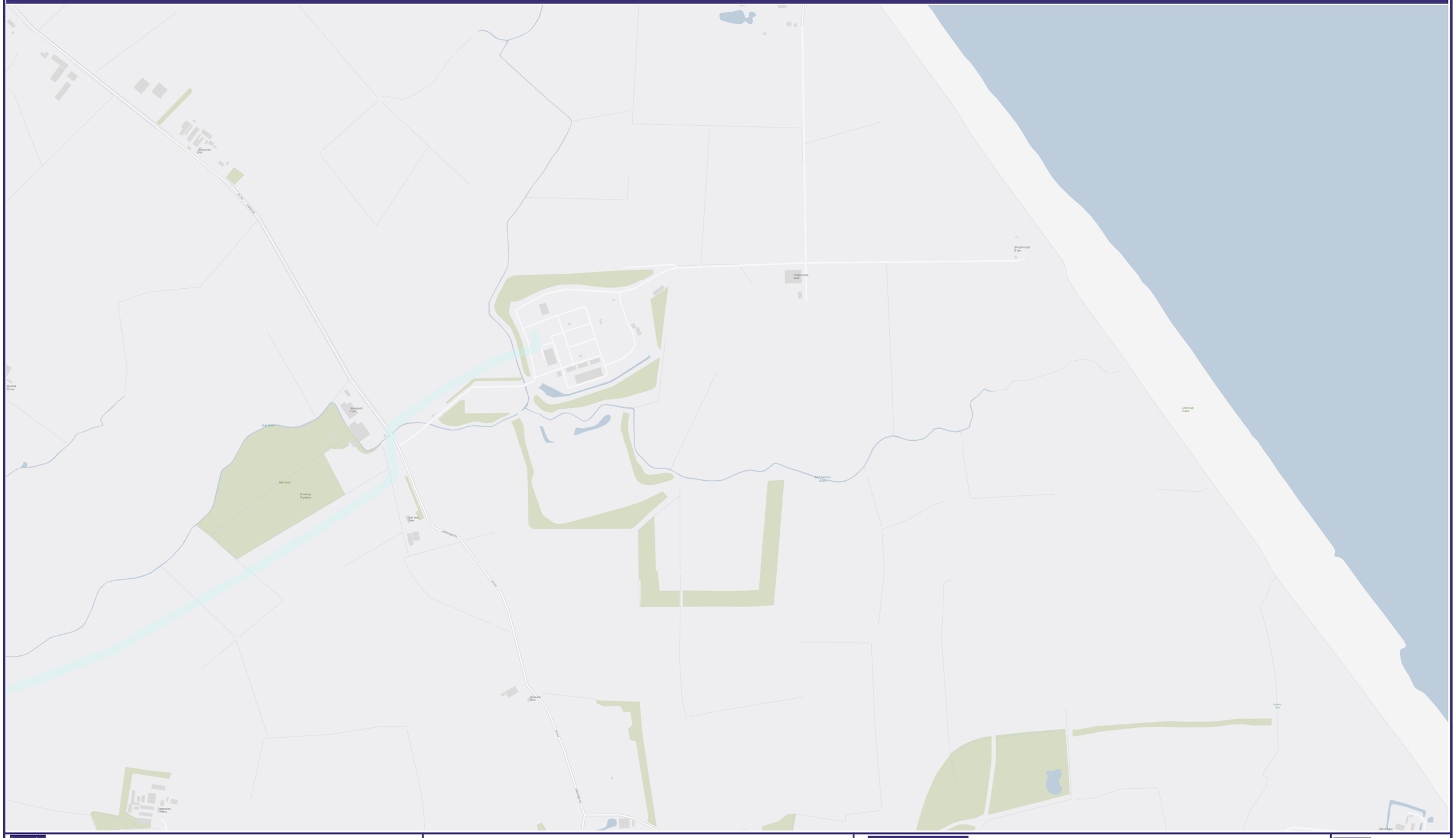
This plan shows those pipes owned by Northern Gas Networks or the relevant Gas Distribution Network in their roles as Licensed Gas Transporters (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Northern Gas Networks, the relevant Gas Distribution Network, or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

User ID	Jennie Adams
Date	08/06/2023
Grid Ref	526862 / 436597

Northern Gas Networks

Advanced Plot

Aldbrough Hydrogen Storage Project - Map 2



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- Syphon (MP)
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- Overhead Auxiliary

1: 10,000

0 200

Meters

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User ID	Jennie Adams
Date	08/06/2023
Grid Ref	526444 / 436761

Northern Gas Networks

Internal Use Only

Northern Gas Networks

Stay safe near our pipes

A guide to working near infrastructure

Who are Northern Gas Networks?

We look after the 37,000km of gas mains in the North of England. We don't own the gas but it's our job to transport it safely to you. We're responsible for most of Yorkshire, the North East and Northern Cumbria with our pipes running the equivalent distance of Leeds to Sydney, Australia and back.

Before you start work

1

Identify the **exact location** of our gas infrastructure (pipes etc) by **hand digging** trial holes or using **electronic tracers**.

2

Use a **marker** to indicate the position of our pipes on site.

3

Make sure everyone involved has a copy of our **site plan** and everyone's read the **HSG47 Avoiding Danger from Underground Services** and **Utilities Guidelines on Positioning and Colour Coding of Apparatus.** You can download these for free from nug.org.uk

Surface boxes and manholes

Never cover surface boxes or build manhole covers or other structures over, around or under a gas pipe.

Always ask our permission before doing work that may affect a cover or protection.

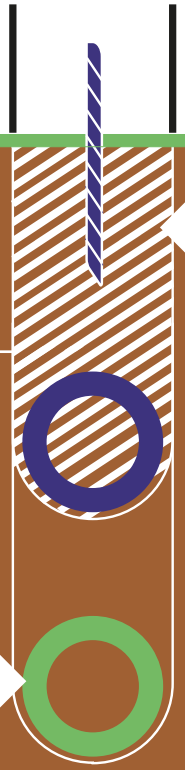
Tree planting

- Make sure you carefully consider the impact of planting trees and shrubs as roots can cause damage to gas pipes and make future maintenance work difficult.
- You will need to get approval from the Before You Dig Team before you can start planting.

Clearances

Never lay equipment along or above a gas pipe.

Keep a minimum clearance of 250mm or 1.5 x the external diameter of the gas pipe (whichever is the greater) between the existing gas infrastructure and any new plant. If this isn't possible, please contact the Before You Dig Team.



Backfilling

- Make sure concrete backfill and hard material is at least 300mm away from apparatus.
- Your backfill material must meet the following requirements:
  - sand must be well-graded in accordance with BS EN 1260:2002
  - it must not contain any sharp particles
  - it must not be foamed concrete
  - it must be laid at least 150mm above the crown of the apparatus, and a 250mm hand rammed layer must be added before power ramming can take place.

Deep excavations

If you're building a sewer trench or something else for the water authority deeper than 1.5 metres near a buried cast iron main, you must contact the Before You Dig Team with detailed drawings showing the line and width of the proposed works along with the soil group classifications.

Mechanical excavations

Never use mechanical excavators within 0.5 metres of a low or medium pressure pipe and 3.0 metres of an intermediate pressure pipe.

Carrying out explosions, pilings, boring or deep excavations?

You need to call us for minimum safe working distances before you get started.

Financial penalties

- You will need to cover the costs of any damage to our infrastructure.
- We will charge you for any alterations needed to surface boxes or manholes caused by your work.
- If we have to move our infrastructure as a result of your work, you will need to cover the cost.

Exposed plant

- You must support our infrastructure at all times, and protect any exposed elements from impact.
- Never weld or use hot substances if there is a risk of damaging plastics or protective pipe coatings.

Make sure that you build shuttering to stop fresh concrete from encasing our infrastructure.

Access

We need access to our infrastructure at all times so make sure that access isn't blocked by temporary structures and piles of spoil.

Crossing our plant with heavy equipment

Always ask our permission before you place heavy goods, equipment and vehicles on our infrastructure.

Smell gas or suspect a gas leak?

1. Call **0800 111 999** immediately.
2. Move away from the gas pipe.
3. Don't attempt to block the leak.
4. Evacuate people from surrounding buildings.
5. Put out naked flames.

Questions? Call: 0800 040 7766 Email: beforeyoudig@northerngas.co.uk

Important Safety Guidance

Northern Gas Networks is the gas distribution company for the North East of England, Yorkshire and Northern Cumbria. We own about 37,000km of gas mains, and other vital equipment, which supply gas to some 2.7 million homes and businesses.

If you or one of your contractors plan to work near gas pipes or other Northern Gas Networks's equipment, you must let us know.

Damaging gas pipes is danagerous and potentially expensive. Not only could it lead to a fire or explosion, it could result in the loss of the gas supply to local communities.

Safety is therefore Northern Gas Networks's top priority. We need to ensure no-one damges our equpment and puts either themselves or membes of the public at risk. Our work in this area is encapsulated in the Pipeline Safety Regulations, and by the Northern Gas Networks's safety case, which is approved by the Health and Safety Executive (HSE).

Our website, www.northerngasnetworks.co.uk has safety guidance booklets that can be downloaded to assist you when carrying out any works. Please use these as reference gides prior to commencing works. Should you have any difficulty in downloading these documents, please either call 0800 040 7766, option 5, or via email: beforeyoudig@northerngas.co.uk

The guidance documents include this one and the following:

1. Safe working in the vicinity of high pressure gas pipelines and associated installations
2. Avoiding injury when working near gas pipes up to 7 bar
3. Avoiding injury when working near gas pipes

If at any point during your works, you smell gas, call the National Gas Emergency Service immediately on the Freephone 0800 111 999.

Examples of higher risk works are, but not limited to, the following:

- Any excavation works within 0.5m of low/medium pressure mains and 3m of intermediate and high pressure mains (the distance is measured from the proven position of the gas main).
- Demolition works within 15m of low/medium pressure mains and 150m of intermediate and high pressure mains.
- The use of explosives within 30m of low/medium pressure mains and 250m of intermediate and high pressure mains.
- Excavations within 10m of a pressure reduction unit.
- Excavations deeper than 1.5m.
- Heavy loading eg cranes, spoil deposits and heavy construction traffic.

INFORMATION REGARDING NATIONAL TRANSMISSION SYSTEM

If the area of your enquiry contains a national transmission pipeline (shown on the plan as a blue corridor), please contact Cadent via the following email address plantprotection@cadentgas.com, by telephone: 0800 688588. Postal address below:

Plant protection team

Cadent

Brick Kiln Street

Hinckley

Leicester

LS10 0NA

The Coal Authority
Resolving the impacts of mining

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG
T: 01623 637 119
E: planningconsultation@coal.gov.uk
www.gov.uk/coalauthority

For the attention of The Planning Inspectorate

[By email: aldbroughhydrogenstorage@planninginspectorate.gov.uk]

20 June 2023

Dear Sir/Madam

Schedule 1C Article 2D - Consultation before applying for planning permission

Town and Country Planning (Development Management Procedure) (Wales) Order 2012

Application by Equinor New Energy Limited (the Applicant) for an Order granting Development Consent for the Aldbrough Hydrogen Storage Project (the Proposed Development)
Scoping consultation and notification of the Applicant's contact details and duty to make available information to the Applicant if requested

Thank you for your notification of 01 June 2023 seeking the views of the Coal Authority on the above.

I have checked the site location plan against the information held by the Coal Authority and can confirm that the proposed development site is located outside of the defined coalfield.

On this basis, the Planning team at the Coal Authority have no comments to make.

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely

The Coal Authority Planning Team

Disclaimer

The above consultation response is provided by The Coal Authority as a Statutory Consultee and is based upon the latest available data on the date of the response, and electronic consultation records held by The Coal Authority since 1 April 2013. The comments made are also based upon only the information provided to The Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by The Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the Applicant for consultation purposes.

From: Stephen Vanstone [redacted]
Sent: 29 June 2023 14:19
To: Aldbrough Hydrogen Storage <AldbroughHydrogenStorage@planninginspectorate.gov.uk>
Cc: Trevor Harris <[redacted]; Russell Dunham
[redacted]
Subject: RE: Planning Inspectorate - EN030003 – Aldbrough Hydrogen Storage Project – Reg 10 Consultation and Reg 11 Notification

Good afternoon Stephanie,

I am content that marine navigation will be considered in the ES and when considering appropriate risk mitigation measures in this regard, the applicant should consult Trinity House, with particular reference to any necessary marking of the pipeline diffuser.

Kind regards,

Stephen Vanstone

Navigation Services Manager | Navigation Directorate | Trinity House

[redacted] | [redacted]

www.trinityhouse.co.uk

TRINITY HOUSE

UK Health Security Agency

Environmental Hazards and Emergencies Department
Seaton House, City Link
London Road
Nottingham, NG2 4LA

nsipconsultations@ukhsa.gov.uk
www.gov.uk/ukhsa

Your Ref: EN030003-000007
Our Ref: 63630

Ms Stephanie Newman
Senior Environmental Impact Assessment Advisor
The Planning Inspectorate
Temple Quay House
2 The Square
Bristol BS1 6PN

29th June 2023

Dear Ms Newman

Nationally Significant Infrastructure Project
Aldbrough Hydrogen Storage Project
Scoping Consultation Stage

Thank you for including the UK Health Security Agency (UKHSA) in the scoping consultation phase of the above application. ***Please note that we request views from the Office for Health Improvement and Disparities (OHID) and the response provided below is sent on behalf of both UKHSA and OHID.*** The response is impartial and independent.

The health of an individual or a population is the result of a complex interaction of a wide range of different determinants of health, from an individual's genetic make-up to lifestyles and behaviours, and the communities, local economy, built and natural environments to global ecosystem trends. All developments will have some effect on the determinants of health, which in turn will influence the health and wellbeing of the general population, vulnerable groups and individual people. Although assessing impacts on health beyond direct effects from for example emissions to air or road traffic incidents is complex, there is a need to ensure a proportionate assessment focused on an application's significant effects.

Having considered the submitted scoping report we wish to make the following specific comments and recommendations:

Environmental Public Health
We understand that the promoter will wish to avoid unnecessary duplication and that many issues including air quality, emissions to water, waste, contaminated land etc. will be

covered elsewhere in the Environmental Statement (ES). We believe the summation of relevant issues into a specific section of the report provides a focus which ensures that public health is given adequate consideration. The section should summarise key information, risk assessments, proposed mitigation measures, conclusions and residual impacts, relating to human health. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.

In terms of the level of detail to be included in an ES, we recognise that the differing nature of projects is such that their impacts will vary. UKHSA and OHID's predecessor organisation Public Health England produced an advice document *Advice on the content of Environmental Statements accompanying an application under the NSIP Regime*', setting out aspects to be addressed within the Environmental Statement[1]. This advice document and its recommendations are still valid and should be considered when preparing an ES. Please note that where impacts relating to health and/or further assessments are scoped out, promoters should fully explain and justify this within the submitted documentation.

Recommendation

We request that concentrations of $PM_{2.5}$ are also to be incorporated in the air quality assessment described in the Scoping Report, which includes dust and PM_{10}.

Our position is that pollutants associated with road traffic or combustion, particularly particulate matter and oxides of nitrogen are non-threshold, i.e. an exposed population is likely to be subject to potential harm at any level and that reducing public exposure to non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits. We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure) and maximise co-benefits (such as physical exercise). We encourage their consideration during development design, environmental and health impact assessment, and development consent.

Furthermore, it is noted that the baseline air quality environment reported in the Scoping Report (para 6.5.3.2) refers to UK DEFRA 2020 background maps. When referring to baseline air quality concentrations, it is recommended to report air quality concentrations measured in years pre-COVID-19 or post-COVID-19, to ensure a more representative baseline.

Finally, the Scoping Report identifies only partly the sensitive human receptors in proximity to the site boundaries. We request a thorough assessment of the sensitive human receptors

[1] https://khub.net/documents/135939561/390856715/Advice+on+the+content+of+environmental+statements+accompanying+an+application+under+the+Nationally+Significant+Infrastructure+Planning+Regime.pdf/a86b5521-46cc-98e4-4cad-f81a6c58f2e2?t=1615998516658

in the vicinity of the Proposed Development for both the air quality assessment and the risk to private drinking water supplies.

It is noted that the current proposals do not appear to consider possible health impacts of Electric and Magnetic Fields (EMF)

Recommendation

UKHSA requests that the proposer confirms either that the project does not contain any EMF sources that may have a potential public health impact; or ensure that an appropriate assessment of the possible impact is included in the ES. For information on carrying out an assessment, see the advice that accompanies this reply - *Advice on the Content of Environmental Statements accompanying an application under the NSIP Regime[1].*

Human Health and Wellbeing - OHID

This section of OHIDs scoping response, identifies the wider determinants of health and wellbeing we expect the ES to address, to demonstrate whether they are likely to give rise to significant effects. OHID has focused its approach on scoping determinants of health and wellbeing under four themes, which have been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements. The four themes are:

- Access
- Traffic and Transport
- Socioeconomic
- Land Use

Having considered the Scoping Report, we wish to make the following specific comments and recommendations:

Population and Human Health – Assessment of Significance

The Scoping Report (para 8.5.3.26) comments that there is no published assessment guidance or technical significance criteria to determine impacts on population and human health it is anticipated that the majority of the assessment will rely on professional experience and judgement. The report also notes the guidance in relation to population and human health, but does not reference Pyper, R et al., 2022[2], published by the Institute of Environmental Management and Assessment (IEMA). Subsequently the Scoping Report does not specify the methodological approach to the assessment of significance for population and human health.

The IEMA guidance has been developed to be the national guidance for assessing significance in population and human health and so should be adopted and utilised for the purposes of the ES.

[2] Pyper, R., Waples, H., Beard, C., Barratt, T., Hardy, K., Turton, P., Netherton, A., McDonald, J., Buroni, A., Bhatt, A., Phelan, E., Scott, I., Fisher, T., Christian, G., Ekermawi, R., Devine, K., McClenaghan, R., Fenech, B., Dunne, A., Hodgson, G., Purdy, J., Cave, B. (2022) IEMA Guide: Determining Significance for Human
Health in Environmental Impact Assessment.

Recommendation

Determining significance for population and human health should follow guidance within Pyper, R et al., 2022, published by the Institute of Environmental Management and Assessment (IEMA).

The final ES should provide suitable justification for any assessment of significance.

Yours sincerely

On behalf of UK Health Security Agency
nsipconsultations@ukhsa.gov.uk

Please mark any correspondence for the attention of National Infrastructure Planning Administration.