The Planning Inspectorate
Yr Arolygiaeth Gynllunio

Transboundary screening undertaken by the Planning Inspectorate (the Inspectorate) on behalf of the Secretary of State (SoS) for the purposes of Regulation 32 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 2017 EIA Regulations)	
Project name:	Aldbrough Hydrogen Storage Project
Address/Location:	Approximately 2.5km southeast of the village of Aldbrough, East Riding of Yorkshire.
Planning Inspectorate Ref:	EN030003
Date(s) screening undertaken:	First screening – 19 April 2024 following the Applicant's request for a scoping opinion

FIRST TRANSBOUNDARY SCREENING	
Document(s) used for transboundary Screening:	Equinor and SSE Thermal – Environmental Impact Scoping Report – Aldbrough Hydrogen Storage Project ('the Scoping Report') 31 May 2023
Screening Criteria:	**The Inspectorate's Comments:**
Characteristics of the Development	The Scoping Report indicates that the construction of the Proposed Development comprises the formation of underground gas storage caverns by solution mining, a process which requires water to be pumped from the sea to the onshore environment, and then onwards via deep wells into geological strata formed of salt. The seawater is used to dissolve the salt, forming a cavern and is then returned to the surface via the wells as brine, to be discharged back into the marine environment. The operational phase will comprise the storage of hydrogen gas, and subsequent removal from caverns and onwards transport to end users, via a method or route yet to be decided, but which may involve an onshore transport pipeline. The hydrogen is planned to be sourced from multiple producers from the Zero Carbon Humber Initiative. **<u>Size and area</u>** The Scoping boundary is given in Figure 1.2 of the Scoping Report, however a measurement of the geographic area is not given. The Proposed Development boundary is predominately onshore, with the current Scoping Boundary extending c.1km into the nearshore environment. The marine element is entirely

	in UK territorial waters (which are up to 12 Nautical Miles (NM) from the low water mark). **Proposed Development parameters** A total of 9 caverns are currently proposed of an indicative total size of 420 million standard cubic metres, with the approximate depth of the wells used to form the caverns being 1.75km – 1.95km below ground level. Above ground infrastructure (AGI) includes compressors, dehydration units, workshops, vents, and a wellhead and leaching area connecting the caverns to the AGI. The marine infrastructure includes pipelines for the abstraction of sea water and the return of extracted brine. **Use of natural resources** The Scoping Report does not specify the anticipated volumes of natural resources to be used. Based on the Proposed Development description, the Inspectorate considers there is a need for fuel, potable water, and the use of products constructed from raw materials. The Scoping Report does however refer to the requirement to use a substantial amount of seawater and some nitrogen gas, and potential use of abstracted groundwater to decommission the caverns. **Production of waste** The Scoping Report indicates likely waste sources are site preparation and levelling, drilling works, excavations, piling, and contaminated / specialist wastes. The main source of waste material is considered to be the production of brine which is required to be disposed of via the marine environment, as the Scoping Report does not identify a reuse source for this. **Pollution and nuisances** The Scoping Report indicates that the Proposed Development may be subject to potential emissions typical of construction phases such as dust generation and air / water pollution. The operational phase, in the event of abnormal operation or technical / infrastructure failure, may be result in hydrogen gas emissions. **Risk of accidents** The Scoping Report provides an outline list of anticipated hazards associated with the natural environment and activities such as solution mining, cavern formation and gas storage. The Proposed Development will be an upper tier COMAH site and is therefore subject to additional construction and operational controls. **Project timescale, construction programme, and phasing** The timescales given within the Scoping Report are as follows: • construction: 60 days per well, and several months to remove the brine from the cavern; • operational lifespan: 30 years for the caverns and 10 years design life for the marine infrastructure; and

	• decommissioning; 6 months for rewatering of the cavities, 5 years for monitoring and 40 days for well plugging.
Location of Development (including existing use) and Geographical area	The Scoping Report indicates that the Proposed Development is located in the vicinity of the Village of Aldbrough, in the East Riding of Yorkshire Council (ERYC) Local Authority Area. The surrounding area is predominately undeveloped / agricultural land with sporadic hamlets or other small villages and built form. The main feature located nearby is the existing Aldbrough Gas Storage (AGS) Facility. The Existing AGS has the capacity to store up to 330 million standard cubic metres of natural gas, with the caverns formed using the same solution mining process as the Proposed Development. The Proposed Development will occupy an area of land which was previously subject to landscaping works associated with a new planning permission for works at the existing AGS. The Applicant has not identified the nearest EEA state to the Proposed Development.
Environmental Importance	**<u>Potential transboundary receptors from the onshore environment and project wide aspects</u>** There are no onshore receptors or project wide aspects scoped into the ES which are considered by the Inspectorate as being likely to have the potential to experience transboundary effects. The nearest EEA state(s) are a significant distance from the boundary of the Proposed Development. Therefore, the onshore environment and project wide aspects are not considered further within this screening. **Offshore environment** **<u>Physical Environment and Water Quality -</u>** The Scoping Report indicates that the offshore area is predominantly circalittoral coarse sediment. Water depths vary from 0 to 12m (mean sea level depth), and tidal patterns and high rate of coastal erosion has resulted in high volumes of longshore drift and suspended sediment. The Proposed Development boundary includes marine infrastructure for the existing AGS, which is in an unknown state of repair. **<u>Benthic and Intertidal Ecology -</u>** The Scoping Report indicates that the Scoping Boundary overlaps with the Holderness Inshore Marine Conservation Zone (MCZ), which is protected for multiple sediment and habitat types which support a range of organisms.

	The Scoping Report also considers the Humber Estuary Special Area of Conservation (SAC) and SSSI located c. 12.4km southwest. The Humber Estuary SAC is designated for Annex I habitat – Estuaries; and Annex I habitat – Mudflats and sandflats not covered by seawater at low tide. The Humber Estuary SSSI is designated for the estuary itself and the associated saline lagoons, sand dunes, standing waters, geological interest, and coastal geomorphology. The estuary supports nationally important numbers of wintering waterfowl and passage waders, a nationally important assemblage of breeding birds, a breeding colony of grey seals, river lamprey and sea lamprey, a vascular plant assemblage and an invertebrate assemblage. **Fish and shellfish ecology -** The Scoping Report identifies at least 27 demersal species, 4 pelagic species and 10 species of shellfish which have been recorded within the Scoping Boundary. Atlantic Salmon and Sea Trout are known to use the Holderness coastline as a migratory route to other estuaries and spawning grounds. The Scoping Report also refers to sandeels and elasmobranch species. **Marine Mammals -** The Scoping Report indicates that the Proposed Development study area may have the presence of grey and harbour seals, and potentially minke whales, harbour porpoise and beak nosed dolphin. There is also a limited potential for further species (due to their known presence in the North Sea) such as bottlenose dolphin, common dolphin, Atlantic white sided dolphin, long-finned pilot whale, and orca. **Ornithology -** Whilst it is noted that the Scoping Report does not refer to a specific chapter on offshore ornithology, the Inspectorate notes that the Scoping Report states that the Proposed Development overlaps with the Greater Wash Special protection Area (SPA). The Scoping Report also considers the Humber Estuary SPA and RAMSAR site, located c. 12.4km southwest. The Greater Wash SPA is designated for red throated diver, little gull, common scoter, sandwich tern, little tern and common tern. The Humber Estuary SPA is designated for hen harrier, golden plover, bar tailed godwit, knot, avocet, bittern, shelduck, dunlin, black tailed godwit, redshank, marsh harrier, little tern and ruff. The Humber Estuary RAMSAR is designated for: • criteria 1 - The site is a representative example of a near-natural estuary; • criteria 3 - Breeding colony of grey seals and natterjack toad;

	• criteria 5 - Assemblages of waterfowl of international importance; • criteria 6 - species/populations occurring at levels of international importance: Eurasian golden plover, red knot, dunlin, black-tailed godwit, common redshank, common shelduck, bar-tailed godwit; and • criteria 8 - Migration route for river lamprey and sea lamprey. **Marine Archaeology -** The Scoping Report indicates that the marine area of the Proposed Development contains no designated archaeological assets, shipwrecks or world heritage sites. However, a number of non-designated shipwrecks or other features of heritage / archaeological interest are present, predominately associated with military defences from World War I and II and the presence of former land uses prior to coastal erosion. **Commercial Fisheries -** The Scoping Report indicates that the coastal region is of local commercial importance being largely fished by small boats from local ports and shore-based recreational angling. This is predominantly restricted to fishing vessels targeting crustacean, with some limited intertidal netting for sea bass and static nets inshore at certain times of the year to coincide with migratory movements. The area is subject to a number of byelaws which restrict fishing types and methods. **Infrastructure and Other Users -** The Scoping Report indicates that the Proposed Development is unlikely to interact with other users due to the geographic distance, including offshore windfarms, cables, pipelines, carbon capture and natural gas, disposal sites, Ministry of Defence sites, aggregate extraction and oil and gas operations. The nearest asset listed is the Westermost Rough Offshore Windfarm and cabling c. 23km east. **Shipping and Navigation -** The Scoping Report indicates that the main vessel traffic in the Scoping Boundary and study area is related to fishing vessels in winter (see commercial fisheries above), and recreational craft including leisure and tourism.
Potential impacts and Carrier	The Scoping Report does not make a specific reference to transboundary effects, and as such all comments below this point in the transboundary screening are from the Inspectorate. **Offshore** For the reasons given below, the Inspectorate considers that the following offshore aspects are unlikely to be subject to

	transboundary impacts and are therefore not considered further: • offshore physical environment and water quality; • marine archaeology; • seascape and visual resources; • infrastructure and other users; and • shipping and navigation. The Proposed Development boundary is located entirely within UK territorial waters, and there is a noted separation between the c.1km offshore Scoping Boundary and 12nm territorial water boundary. In relation to marine archaeology, no known wrecks of marine or aviation transport which may have been registered with an EEA state have been identified. In relation to shipping and navigation, it is also considered that the users of the Scoping Boundary of the Proposed Development are predominately UK based vessels (as detailed within the Scoping Report). In relation to seascape and visual resources and infrastructure and other users, it is also considered that where a larger study area is provided within the Scoping Report, there are no specific receptors identified that are considered likely to be subject to potential transboundary effects for the following aspects. **Offshore Benthic and Intertidal Ecology** Holderness Inshore MCZ: The MCZ is a national designation and is mapped as being geographically separate from the Holderness Offshore MCZ. Humber Estuary SAC (Marine): The SAC is designated for estuaries and mudflats / sandflat habitats and does not list any specific protected species. The general benthic / intertidal ecology setting of the Scoping Boundary, including the SAC and MCZ, is located entirely within UK territorial waters and there is a noted separation between the c.1km offshore Scoping Boundary and 12nm territorial water boundary, and no known interconnectivity between habitats and species populations. The Inspectorate therefore considers that transboundary effects are unlikely and does not consider benthic and intertidal ecology further in this screening. **Offshore fish and shellfish ecology, commercial fisheries and marine mammals** The offshore construction works are limited in duration and geographic scale. Operational infrastructure on the seabed and within the marine environment is also limited in scale as it is within c. 1km of the coastline.

	Activities which may cause adverse effects such as brine diffusion have a noted separation between the c.1km offshore Scoping Boundary and 12nm territorial water boundary, and as above, users of the Scoping Boundary of the Proposed Development are predominately UK based vessels. No significant populations of fish or shellfish stocks which may be permitted to be caught by EEA states have been identified as having the potential to be impacted at this stage. There is also no information to suggest that the operational activities such as the release of brine would result in a transboundary effect. Therefore, whilst fish and marine mammals are noted to be highly mobile species transboundary effects on a specific EEA state are unlikely, and fish and shellfish ecology, commercial fisheries and marine mammals are not considered further in this screening. **<u>Ornithology</u>** In relation to European Designated sites, the Scoping Report identifies (in Paragraph 6.7.4.1 in relation to onshore works), that the construction of the Proposed Development will result in the loss of terrestrial habitats, some of which are possibly functionally linked to the Greater Wash SPA and/or Humber Estuary SPA. The Inspectorate notes that the citation for the Humber Estuary SPA indicates that that the population of red knot represents 6.3% of the North-eastern Canada / Greenland / Iceland / North-western Europe populations, and the population of black-tailed godwit represents 2.6 – 3.2% of the Icelandic breeding population. The citation for the Humber Estuary RAMSAR indicates that the population of golden plover represents 2.2% of the Iceland and Faroes / East Atlantic population, and the Black-tailed godwit represents 3.2% of the Iceland / West Europe populations. However, the Proposed Development is not located within or near to the boundary of the SPA or RAMSAR site, and so direct impacts are unlikely. It is considered that the onshore works of the Proposed Development may impact functionally linked land only. The Inspectorate therefore considers that transboundary impacts from loss of functionally linked land to the populations of the Humber Estuary SPA and RAMSAR associated with Iceland and Greenland are unlikely. The Scoping Report also identifies (Paragraph 6.7.4.2 in relation to Offshore works) that construction without mitigation could also result in the direct disturbance of, and harm to animals including the displacement of species from the proximity of the Proposed Development and within the boundary of the Greater Wash SPA. The assessment will determine the significance of these effects. The Inspectorate consider that the citation for the Greater Wash SPA indicates that the species listed are either UK populations

	only, or where listed as migratory, do not have a specific population of an EEA state mentioned. The Inspectorate therefore considers that transboundary impacts to a specific EEA state are unlikely as a result of impacts to the Greater Wash SPA. **The Inspectorate therefore consider that there is no potential for significant transboundary effects on an EEA state.**
Extent	The Inspectorate has not identified any likely significant effects on an EEA State, and as such the extent of effects is not required to be considered.
Magnitude	The Inspectorate has not identified any likely significant effects on an EEA State.
Probability	The Inspectorate has not identified any likely significant effects on an EEA State.
Duration	The Inspectorate has not identified any likely significant effects on an EEA State.
Frequency	The Inspectorate has not identified any likely significant effects on an EEA State.
Reversibility	The Inspectorate has not identified any likely significant effects on an EEA State.
Cumulative impacts	The Applicant's cumulative impact assessment (CIA) has not yet been undertaken and the Applicant has not identified any likely significant cumulative effects at this stage which may result in transboundary effects. This information will be considered when available within (a) further transboundary screening(s).

Transboundary screening undertaken by the Inspectorate on behalf of the SoS.

Under Regulation 32 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 2017 EIA Regulations) and on the basis of the current information available from the Applicant, the Inspectorate is of the view that the Proposed Development **is not likely** to have a significant effect on the environment in an EEA State.

In reaching this view the Inspectorate has applied the precautionary approach (as explained in its Advice Note Twelve: Transboundary Impacts) and taken into account the information currently supplied by the Applicant.

Action:

No further action required at this stage.

Date: 19 April 2024

Note: The SoS' duty under Regulation 32 of the 2017 EIA Regulations continues throughout the application process.

Note:

The Inspectorate's screening of transboundary issues is based on the relevant considerations specified in the Annex to its Advice Note Twelve, available on our website at http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/