

SSE THERMAL ALDBROUGH COMMUNITY Q&A'S

August 2023 V1



BACKGROUND

The following questions have all been submitted by the Aldbrough CLG & 'VOICE' group to SSE Thermal and relate to the existing Aldbrough Gas Storage Site & the proposed Pathfinder and Aldbrough Hydrogen Storage Projects.

We have endeavoured to respond to all questions and give as much details as possible, but there are some questions that we do not have the information at present, or we simply are not able to answer. We always intend to share information as soon as we have it and are able to via the CLG. We propose to integrate these responses into a wider Frequently Asked Questions (FAQ) document in due course.

CLG meetings are currently held monthly:

- The Community Liaison Group will include representatives from SSE, Equinor, ERY Council, Aldbrough and Garton Parish councils and other relevant local interest groups.
- The Community Liaison Group shall provide a forum in which consultation can take place to consider the effects and issues which may arise from the development during its implementation and operation.
- The Community Liaison Group shall meet on a regular basis being at least once every six months.
- Meeting of the Community Liaison Group shall be open to members of the public, as observers.
- SSE shall nominate a Liaison Manager to act as point of contact; they will be a member of this Community Liaison Group.

The responses to questions will be updated when more information is available and further questions and responses added. When this occurs the version number and date of the document will be updated. Previous versions will become null and void. Hard copies of this document will be made available on request.

Other means of obtaining information regarding the projects will be available during public face to face and on-line consultation events which will be widely publicised and shared via the CLG meetings and community notice boards, local newsletter/leaflet drops, and will be on the websites.

Any planning applications, updates or key documents will be available on-line via the ERYC planning page or the PINS (Planning Inspectorate) website.

[View and comment on planning applications \(eastriding.gov.uk\)](https://www.eastriding.gov.uk)

[National Infrastructure Planning \(planninginspectorate.gov.uk\)](https://www.planninginspectorate.gov.uk)

1. GENERAL QUESTIONS

1. What happens to a cavern when gas is no longer needed to be stored there, either temporarily or permanently at the end of the project?

The cavern will be decommissioned – this will include removal of the gas by means of injecting water to displace this gas. The cavern will then be left with water in the cavern and monitored over several years – once established that there are no pressure or temperature increase the tubing will be filled with cement.

2. Can a cavern crumble or collapse? Can this cause ground movement above?

Our caverns are at a depth of 1 mile beneath the surface. There are many different layers of chalk, shale, Bunter sandstone, and lower Bunter shale before the layer of salt. We keep a minimum gas pressure in the cavern at all times. We regularly monitor the caverns at both Aldbrough and Atwick using a sonar technique. Our Atwick caverns have been in operation for over 30 years and those at Aldbrough for 12 years. When we come to decommission the cavern, we will fill it with "water" - we currently have a decommissioned cavern at Atwick which is being monitored and no change has been seen.

3. What is the closest horizontal distance a cavern is to a property currently and proposed? Even though we understand it may be 1.8km underground.

This is business sensitive, so cannot share this information.

4. When Gas is moved in and out of a cavern is the rest of the space topped up and down with water?

No, there always remains cushion gas in the cavern, this is our minimum operating pressure. We operate the cavern between this minimum and maximum.

5. How will you now protect the cliff as the Phase 1 get down / beach access has started eroding more rapidly. It is also eroding on the cliff top due to Run Off from land drains at the southern side thus increasing the erosion.

At present we will not be protecting the cliff - we had a temporary exemption to this during Phase 1 where we placed temporary protection in order to complete the phase 1 cavern development. It is not Government policy to provide permanent shoreline protection.

1. GENERAL QUESTIONS

6. Why does the site at Easington have such a Police presence and will this be necessary at Aldbrough with any of the potential projects?

There is a police presence at Easington due to this being classified by the UK Government as "Critical National Infrastructure" CNI. The criticality of UK infrastructure is under constant review by the UK Government.

7. How more likely is an act of terrorism with the proposed projects, how would it be dealt with?

We have our own Security Bureau who have links with UK government who can advise on the security requirements. The site also has a yearly inspection from Humberside Counter Terrorism Officer. Any changes to security threat levels are shared with us and appropriate & recommended mitigations put in place.

8. What is a turbine for and what does it look like?

Please see the AHP response on pictures.

9. What is an electrolyser for and what does it look like?

Please see the AHP response on pictures.

10. Why did the public know about the Storage Project before the Pathfinder project and yet the Pathfinder project is coming first?

The Storage Project was being developed as part of the wider Humber Cluster decarbonisation - Pathfinder was then seen as an opportunity, working with our industrial partner, Siemens Energy, to develop an integrated hydrogen production, storage and use project within the existing site boundary. The CLG were informed on both projects as soon as was feasible.

11. Are the proposed projects likely to lessen the value of neighbouring properties? Local social media highlights that the projects are currently being flagged up by Solicitors on searches conducted for property buyers.

This currently sits in the public domain, planning permission for Phase 2, an additional underground salt cavern natural gas storage sites, with wellhead, and processing area - similar to that on Phase 1. Ultimately, we are unable to answer questions on predicted house prices, only share what information will show on land searches. The developments we are proposing at Aldbrough will help secure existing jobs and create new jobs both during construction and operation. They will also support our supply chain which provides further employment in the area.

1. GENERAL QUESTIONS

12. What rates of noise and vibration on all projects can be expected from the routine workings of such machines as the turbines, electrolysers, converters and other machinery? The Pathfinder scoping report draws attention to properties in Fig.9.1. How will this be monitored?

A baseline (existing) noise survey has been conducted during July 2023 at the nearest properties to the site. This information will be used in the noise predictions that will be conducted as part of the Environmental Impact Assessment (EIA) for each project. Note that the site benefits from an earth bund around the site perimeter and mature vegetation that will screen the development and act to reduce noise.

13. How are you going to ensure that larger vehicles get to site in the proper way? Please note that horses use the local roads also.

As part of the planning application a designated route agreed with ERYC Highways will be used, as for the development of Phase 1 and will be stated in contracts awarded to the companies who work on the site. Our recent Brine tanker movements to Atwick have followed the designated route and we have been able to demonstrate this when challenged using GPS tracking attached to the vehicles.

14. Currently (June 2023) why are lights on onsite during daylight working hours? (Viewed from the cliff top and the bridal path). Lights were also on at site 09.45 daytime Fri 26th May 2023, what is happening here? Does the site not notice?

The lights can be switched off from the control room and only used for routine inspections at night - the control room staff will be made aware of this and consider what can be done.

16. How many extra staff will the projects need for construction and then operation?

During construction we estimate up to 200 construction workers at any one time and potentially 50 during operation. The latter may be a combination of securing existing jobs and also new positions. It is important to appreciate that both projects are at an early stage and therefore it is difficult to forecast exactly how many people will be required during either construction or operation.

17. How many jobs do you estimate will be taken up by local residents for the proposed projects both in construction and operation?

We will share any opportunities to the local community that arise from any future construction and operation including apprentice openings. Direct employment to the local community is hard to detail, as it does depend on available skills and competence for specific roles. We do intend to utilise & support local business and suppliers as much as possible throughout any project.

1. GENERAL QUESTIONS

18.Can all employees and contracted temporary staff be routed to avoid the smaller cut through road (back lane north) via East Village Meadows from Fitling?

We will advise and ask them not to do this due to their impact on the local community & review signage as part of any project.

19.Do you have decommissioning plans? What are they?

Yes, for Phase 1, and will be developed for both Pathfinder (AHP) and Storage (AHS). These would be shared with the community at any relevant point in time.

20.What is the environmental impact from a major explosion?

Various scenarios are developed during the production for the COMAH Safety Report and the impacts on the site and community. The COMAH Safety Report must be accepted by both the Health & Safety Executive and the Environment Agency.

21.We know that there is a structure to follow during all surveys but why do you not take into account valuable local knowledge as part of that? (Archaeological, ecological etc.)

ERM employs publicly available information initially to scope out the surveys. The scope of the survey is then agreed with the appropriate stakeholders such as Natural England. If additional survey are required as a result of the findings, or at the request of the stakeholder, these are then undertaken. The scope of the surveys must follow a prescribed process; however, local information is valuable. The public engagement platforms (CLG and public consultation) and the planning portal are good opportunities to raise local issues but also local information especially since we do not know who holds this information.

1. GENERAL QUESTIONS

22. Can you explain why it is a “brown field” site and why an already industrialised area like Easington isn’t used?

Brownfield development refers to the reuse or upgrading of infrastructure on an existing site. At Aldbrough, the local geology has been used to develop underground caverns for gas storage. Infrastructure and utilities associated with AGS phase 1, including the Aldbrough 1 cavern, can be used for Pathfinder, which needs a salt cavern for hydrogen storage. The AHP project site also offers a number of environmental and social benefits, including:

- The site is distanced from residential areas.
- The site can share utilities with existing infrastructure.
- The local geology (i.e., the presence of salt, which is geographically limited to the Zechstein Salt Basin).
- The site is screened by an earth bund and mature vegetation.
- The site is an existing COMAH site, experienced in dealing with gases.

23. Do you take into account breeding seasons for various species when tearing up the ground for construction purposes?

Yes. Ecological surveys take place ahead of any construction works. The surveys account for the breeding patterns of local species to allow our ornithologists to determine and assess the local bird species that are present. Breeding seasons will be considered as part of ground preparation works for construction.

The scoping opinion response from ERYC has also specified that a Construction Environmental Management Plan (CEMP) will be submitted for approval, as part of the planning application, and will consider breeding seasons of local species with the ultimate aim of reducing environment impact through employing measures to mitigate environmental impact.

2. PATHFINDER PROJECT QUESTIONS

1. How do you convert a cavern from natural gas storage to hydrogen storage?

To store the hydrogen in an existing underground cavern, the cavern needs to be repurposed. The cavern repurposing process involves rewatering the cavern to remove all-natural gas, then relining the well with hydrogen ready materials and refitting the cavern with equipment to allow safe and secure hydrogen storage.

2. How will you deal with the brine removed from the cavern during conversion and operation? (Leading onto Q3)

There are three options for disposal of the water resulting from the filling of the cavity with hydrogen:

1. Discharge of the water to sea – using an existing but decommissioned pipe running east from the Aldbrough Gas Storage site (noting that the pipe will need to be refurbished if required to be utilised);
2. Rewatering of an old, existing cavern and its subsequent decommissioning; or
3. Tanker removal of the water off site with disposal at the nearby licenced SSE Atwick site or alternative disposal site.

3. Is the exposed pipe on the beach going to be buried, cut off, or lined and reused?

If the existing brine discharge pipe infrastructure is to be used for brine removal for AHP, the pipework will be refurbished and the exposed pipe on the beach will be reburied. This pipework is currently being inspected, and design works for reburying the pipe will take place from September 2023.

If the existing brine discharge pipe infrastructure is not going to be used as part of AHP, there is an existing commitment to the ERYC in the Aldbrough Gas Storage (AGS) planning application to remediate this - we have made enquires with regards a licence, though this still requires the removal of a large part of the cliff to safely remove these pipes. We have a monthly routine to inspect these pipes.

2. PATHFINDER PROJECT QUESTIONS

4. Will all of the Pathfinder above ground infrastructure be contained in bunded areas?

Yes, all of the Pathfinder above ground infrastructure will be contained within the existing site/bunded areas.

AHP will be classed as an installation under the Environmental Permitting (England and Wales) Regulations 2016 and will be subject to conditions which require that it is operated in a way that provides a high level of protection to the environment as a whole and, in particular, soil and groundwater. This means that all tanks and containers storing potentially polluting liquids must be provided with secondary containment (bunding) that complies with CIRIA 736 Guidance - Containment systems for the prevention of pollution. This guidance uses a risk assessment to decide the containment measures that would be needed in order to manage the potential consequences of any failure of a storage tank or container. This risk assessment hasn't been completed as yet, as it's part of the environmental permit application, but the outcomes will be factored into the design of AHP.

5. Can you show us a montage of the additional infrastructure?

Photo montages of the project infrastructure will be created prior to the Town and Country Planning Application due to be submitted in September/October 2023. These montages will be shared/made publicly available.

6. What are the exact heights of construction equipment and then permanent structures?

The project is progressing in its design phase. As such, exact heights of construction equipment and then permanent structures has not been confirmed just yet. This information will be available prior to the Town and Country Planning Application and will be shared.

7. What additional screening do you currently have planned? Please annotate on a map.

Initial winter viewpoint and tree surveys took place in February 2023 to identify areas of land that should receive additional screening. These areas are noted on the supplemented screening map. These areas will be further reviewed in the coming months and a detailed screening plan will be developed with support from Heritage Hedging. The current plan is to begin planting in November 2023.

2. PATHFINDER PROJECT QUESTIONS

8. Will you plant in the next season?

Yes, planting of additional screening will take place from November 2023 in the areas identified in the screening map.

9. Will you have a choice of colour for the new buildings?

This will be agreed with ERYC through the planning process. For the existing site grey was selected to better match the sky.

10. Is Hydrogen more dangerous than natural gas?

Hydrogen and natural gas have different properties to each other - hydrogen is lighter than natural gas, though has a wider flammability range. How we safely store both natural gas and hydrogen will be written in our Control Of Major Accident Hazard (COMAH) safety report and is submitted to the Health & Safety Executive (HSE) and Environment Agency for acceptance. Hydrogen has been produced and stored in the UK over many years in different locations up and down the country.

11. What firefighting equipment will you have on site?

This is to be determined - the existing natural gas facility does not have firefighting equipment - the strategy to deal with any gas fires, is to isolate the source.

12. Why does it highlight “no concerns for wildlife” on the scoping report? (Lapwings on the Red list).

The development is proposed to be within the footprint of the existing site boundary and covers a small area. The site to be developed is largely covered in concrete hence the impact to wildlife will be very limited. We have worked hard during the design to minimise the impact to the environment by keeping the development within the existing fence line.

13. If Pathfinder is a success what is the likelihood that the rest of the existing caverns will be converted and what additional infrastructure would this require?

Firstly, the conversion of other existing caverns would depend upon the continued requirement for natural gas storage in the UK for domestic and Industrial usage, security of supply and price. Second, it would also depend upon how the hydrogen economy in the Humber develops and therefore the demand for hydrogen storage.

3. HYDROGEN STORAGE PROJECT QUESTIONS

1. How many caverns are going to be created?

Up to nine (9). This is the same as was previously granted planning consent.

2. How much tonnage of salt is going to be flushed from the caverns into the sea and what percentage of salinity change is expected?

This is subject to ongoing design work and the EIA. We shall provide this information when it is available.

3. What effect does the extracted salt going into the sea have on the current Sealife (animal and plant)? Do you have data from Phase 1 as to the effects?

There was detailed modelling and monitoring of the brine discharge during Phase 1. All of this previous work is being taken into account in the EIA for Aldbrough Hydrogen Storage (AHS). We shall also be undertaking a new marine baseline survey during 2023.

4. How often and what volume of brine will have to be moved from Aldbrough to Atwick for discharge in the future or will the new project enable you to discharge from the Aldbrough site? (Leading onto Q5).

The brine generated during the creation of the new AHS caverns will be discharge direct to sea at Aldbrough using new infrastructure.

5. Is an additional get down / beach access going to be created? Would it be protected by rocks? If so, why can you not use the existing one?

We shall consider using the existing one if possible. Any access to the beach will be temporary and will be agreed with ERYC Coastal Protection. All temporary civil works will be fully restored after the construction.

6. How are you going to increase security of the site? Especially to the East?

The new facility will have a new security fence around the perimeter and will also have security cameras.

7. What area will have to be fenced off, please annotate on a map.

This will be confirmed during the ongoing design, and we shall share these plans when they are available.

3. HYDROGEN STORAGE PROJECT QUESTIONS

8. How will you deal with the new Coastal Path?

If required, we shall agree a temporary diversion with ERYC or put in place a safe temporary crossing point. We are also in contact with ERYC who are developing the King Charles III England Coast Path project.

9. What negative effects is the proposed project going to have on the church, the mill and neighbouring properties (some listed)? Both in construction and operation?

We are committed to minimising the disruption to and impact on local residents, businesses and neighbouring properties. All of these issues will be fully considered in the Environmental Statement that shall accompany the DCO application. We shall discuss the results of the EIA through ongoing public consultation.

10. How will the new project affect the way of life of local residents and businesses? (IE. loud noises during construction may spook horses at a close business, people may not be able to sleep, unsociable lighting, traffic problems) How will you mitigate?

Please see answer to Q9.

11. Could neighbouring properties be damaged by vibration or ground movement etc. from construction? Will this be routinely monitored?

Please see answer to Q9.

12. How will you deal with issues raised regarding noise and vibration or evening lighting disturbance? (One previous response to residents was that they had to get used to it because they will be living with it for a while to come!)

Please see answer to Q9. These issues will be fully considered in the Environmental Impact Assessment and suitable mitigation measures will be identified. We take our commitments and impacts to the local area and community seriously and have a dedicated Liaison Manager who acts a point of contact for any concerns, any initial problems or questions can be directed to them.

13. What above ground plant and machinery will be needed compared to the Phase 1 site?

The permanent above ground equipment for AHS will look very similar to the existing Gas Storage facility. As the design develops we shall share drawings of the new facilities proposed.

3. HYDROGEN STORAGE PROJECT QUESTIONS

14. What type of lighting will be used during construction and operation especially during 24hr working.

During construction, the only 24 hour working that is expected is during the creation of the new storage caverns. Both during construction and operation lighting will be minimised to that strictly required for safety and security.

15. What will happen with the bridal path? Closure? Reroute?

If required, we shall agree a temporary diversion with ERYC or put in place a safe temporary crossing point.

16. What are the exact heights of construction equipment and then permanent structures?

This is subject to the ongoing design work. We shall share this information when it is available.

17. Have you any plans for additional screening, please annotate on a map? If so which planting season?

Yes, we are currently working on a combined offsite landscaping plan / Biodiversity Net Gain plan. We shall share our ideas at a future public consultation.

18. How will you deal with a fire or an explosion, will a fire engine be on site that can reach all areas quickly?

To be determined - the existing natural gas facility does not have firefighting equipment - the strategy to deal with any gas fires, is to isolate the source. As part of our COMAH requirements, we work closely with all emergency services.

19. How many designated entry / exit points will there be to and from site in an emergency?

There will need to be a minimum of two emergency access/egress routes for vehicles. There will be many emergency egress routes for personnel on foot.

3. MISC. PROJECT QUESTIONS

1. What route will the pipeline take from Aldbrough to Saltend?

The routing of the pipeline is ongoing work. We shall consult landowners and the public on our preferred route in due course. (There is no "off-site" piping required for AHP).

LINKS AND FURTHER INFORMATION

[Abrough | SSE Thermal](#)

[Aldbrough Hydrogen Pathfinder | SSE Thermal](#)

For more information, please contact:

Rachel.fox@sse.com