From:
To:
Cc:
Subject: Application Bespoke EPR/CP3225SW/A001 - We Need More Information About Your Application 21102025 CRM:0227085
Date: 21 October 2025 13:12:00
Attachments: Odour Management Plan TEMPLATE V2.docx
image001.png
image002.png
Importance: High

GOV.UK logo

Environment Agency Logo

Dear Application Contact

Environmental Permitting (England and Wales) Regulations 2016

Application reference: EPR/CP3225SW/A001

Operator: SSE HORNSEA LIMITED

Facility: Aldbrough Hydrogen Pathfinder, Garton Road, Aldbrough, HU11 4QB

Thank you for your application received on 01/07/2025. The following is to confirm our conversation of 02/10/2025.

Information missing for duly making

We need to ask you for some missing information before we can do any more work on your application. Please provide us with more information to the following questions:

1. **Legal operator.** Confirm whether SSE Hornsea Limited will be the legal operator of the proposed installation, by providing a review against the 'sufficient control' criteria specified in our guidance: Legal operator and competence requirements: environmental permits - GOV.UK.

   Notes: the application 'Supporting information document' states that the Aldbrough Gas Storage (AGS) site is owned by both SSE and Equinor, and the Aldbrough Hydrogen Pathfinder (AHP) project will be a joint venture between both companies. We are seeking to confirm that the application has been submitted by the correct operator.

2. **Site Condition Report (SCR) and containment infrastructure.** Amend the SCR to include a Stage 1 - 3 assessment. For guidance on producing a stage 1 to 3 assessment, see 'EC Commission Guidance concerning baseline reporting (2014/C 136/03)' (https://eur-lex.europa.eu/legal-content/EN/ TXT/PDF/?uri=CELEX:52014XC0506(01)&from=EN). In addressing this requirement, you must provide additional information on:

   a. Specification primary containment, volume of relevant hazardous substances (RHS) proposed to be stored or used by the activities in the scope of this variation and their MSDS

   b. Specification of secondary containment and their volume: additional details of primary and secondary containment to be provided for each RHS, for example minimum volume of secondary containment and materials, along with a compliance assessment

against CIRIA Report C736 - Containment systems for the prevention of pollution.

i. In particular, but not limited to, confirm secondary containment provisions for the storage and degassing of the brine.

3. **Process Flow Diagrams / Schematics.** Provide more detailed process flow schematics - Refer to guidance to application form Part B3 for Process Flow Diagrams (although this is only indicative and we may not need all the information listed in the guidance).

4. **Brine degassing operations.** Provide the following information in relation to this element of the application:

   a. **Estimate/Assessment of Gas Volumes:**
   Provide an estimate or assessment of the likely volumes of waste gas produced, including how these volumes may change over time.

   b. **Assessment of BAT (Best Available Technique)**
   Provide an assessment of BAT with regards to the management of these waste gases, supported by cost-benefit assessment of environmental damage, where warranted (see guidance in the following notes). The limited information suggests that these will be allowed to freely vent from the 'open' tanks, unless H2S is present. Without understanding the likely gas volumes, it is unclear whether the application meets BAT.

Notes: The application identifies that there is the potential for the cavern water to contain gas and that prior to discharge to the North Sea degassing is required. The application states that this is undertaken in open tanks under atmospheric conditions. It also stated that if H_2S is identified, the gas will be collected and sent to a Flare. Table 4.3 of the supporting information, lists the fugitive emissions to air however the release of natural gas from the cavern water does not appear to be included. The application should discuss this emission and potential duration (i.e. short term/long term), and the potential impacts of the

The application is not clear what volumes of gas, including natural gas, will be released during this degassing process. The application does not consider whether the proposed release from open tanks is the best environmental solution for the management of this waste gas.

Looking for synergies with the treatment of produced water and waste gas from the oil and gas industry, you may refer to: Onshore oil and gas guidance (Onshore oil and gas sector guidance - 8. Flares at onshore oil and gas sites - Guidance - GOV.UK – section 8.5) operators "are expected to use BAT to prevent waste gas arising from your processes, or if this is not practicable, to reduce your emissions and impact on the environment. To determine BAT for your site, and demonstrate that you have considered all available options, you should use the methodology in the report Waste gas management at onshore oil and gas sites: framework for technique selection or an equivalent approach. This may result in using a combination of techniques, one of which may be a flaring system to combust any remaining gases".

*Given the proposal to use a flare to treat any H_2S that arises, it is reasonable to expect a cost-benefit assessment for the treatment of waste gas. This should account for the '**environmental damage costs'** by comparing the release of natural gas vented from tanks versus capture and combustion in the proposed mobile flare.*

   c. **Air Emissions Risk Assessment** for the emissions associated with the degassing and flaring operations, following our guidance Air emissions risk assessment for your environmental permit - GOV.UK.

Notes: this should look at any pollutants which entails a risk to human health or habitats (e.g. H2S, SO2, etc.).

   d. **Odour management plan.** Given the potential odour impacts associated with emissions of H2S (and other odorous sources if relevant), you must submit an odour management plan following our guidance Environmental permitting: H4 odour management - GOV.UK and the attached template. Please note the assessment of this plan attracts an additional component of the application charge, refer to 'insufficient payment', below.

5. **Geological setting of the proposed salt cavern storage.** Provide additional information on:

   a. the geological setting of the salt cavern;
   b. its dimensions, supported by 3D maps/drawings, and ideally a summary report of the latest sonar survey;

   a high-level conceptual site model addressing potential interactions with groundwater

c.

and consideration of pathways for hydrogen emissions, along with a risk assessment and proposals for monitoring.

Please note additional information required during determination in relation to the hydrogen storage in the salt cavern, see below.

6. **Noise Impact Assessment - Background sound level measurements**

   a. Provide the raw data from the background sound level survey at each location, including time, date, LA90, LAeq and LAmax for each measurement.
   b. Provide the weather data measured during your background sound level survey including time, date, wind direction and wind speed.

Notes: In line with the EA guidance, this information must be submitted so that the EA is able to audit the report. Further Guidance on the requirements for both NIAs and NMPs is available from our latest guidance: Noise and vibration management: environmental permits - GOV.UK (www.gov.uk).

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Please note additional information required during determination in relation to noise, see below.

7. **Air Quality Assessment.** Provide the following information:

   a. The normalised volumetric flowrate used in the air dispersion modelling for emission point A1 and the actual O2 and H2O concentration figures you have used to calculate the normalised flow rate.

   b. An explanation, including statement of assumptions, of you calculated a mass emission of 17.3 kg/hour of NOx from the flare events

   c. A list of sensitive human health receptors and a clarification on whether the process contributions PCs have been calculated at discrete receptors' locations, maximum on grid or maximum off-site.

8. **Water quality assessment.** Provide the following information:

   a. Review and clarify the material balance calculation undertaken to work out the concentrations of substances in the demin plant effluent: with reference to the application document titled 'Aldbrough Hydrogen Pathfinder H1 Assessment to Water Workbook', we note that the concentrations of Stream B (columns K and L of tab '1.Sample Analysis') were calculated by multiplying the concentrations of the cavern dewatering stream times 2.7. We are not clear on the assumptions behind, nor on the relationship between the demin effluent concentrations and those of the dewatering brine, given that the borehole water is used as feedstock for the demineralisation plant.

      If any changes arise out of this review, submit updated H1 assessment and modelling and update the application 'Supporting information document', as required.

   b. Advise whether any chemicals used on-site (as per MSDS list requested in item 2.a.) ends up in the discharge effluent. If this is the case, update the water quality assessment to include these chemicals.

      Notes: you may need to use Predicted No Effects Concentrations (PNEC) when there are no EQS for chemicals/pollutants in the discharge.

Insufficient Payment
Unfortunately the application payment you sent is incorrect. The correct application charge is £ 28,978.50. This leaves a balance of £1,246.00 to pay. This amount corresponds to the charge for the assessment of the Odour Management Plan requested in item 4.d.

Please reply directly to this email with your information and copy in SM-Defra-RESP-notifications (DEFRA) RESP-notifications@defra.gov.uk.

You must send us the information and payment by **04/11/2025**. Please let us know if you are unable to meet this deadline. If you do not provide the missing information and payment by the deadline, or within a short extension to be agreed, we will have to return your application.

Pay online by credit or debit card

Pay online at this link www.gov.uk/payments/permitting-applications-installations/permitting-application-payment-installations

You need to create your own reference number. Your reference number must follow this format: PSCAPPINSTXXXXXYYY. It should include the first five letters of the company name (replacing the X's in the above reference number) and a unique numerical identifier (replacing the Y's in the above reference number). Email us the reference number and the payment date so we can track your payment.

Details of how to pay by other methods are given in Part F1 of the application form.

If we do not receive this by the deadline we will return your application.

If we receive what is missing by the deadline, we will continue to check your application. We'll check to see if there's enough information for the application to be 'duly made'. Duly made means that we have all the information we need to begin determination. Determination is where we assess your application and decide if we can allow what you've asked for.

We'll let you know by email whether your application can be duly made. If it can't be duly made, we'll return your application to you.

If we do have to return your application we'll send you a partial refund of your application payment. We'll retain 20% of the correct application charge to cover our costs in reviewing your application. This maximum amount we'll retain is capped at £1,500. Further information on charging can be found at: https://www.gov.uk/government/publications/environmental-permits-and-abstraction-licences-tables-of-charges ||

Information missing for determination

We have also identified the following missing information, which although it will not prevent us from duly making the application, **will be required during determination**. If the application is duly made, you should provide this information as early as possible to avoid delays during determination, as a tentative deadline, **within one month from the duly making date**:

1. **Hydrogen storage in salt cavern.** Provide the following information:

    a. A proposed schedule of cavern surveys.

    Notes: We consider surveys should be relatively frequent at the beginning. If it is then demonstrated there is limited size or profile change the time between surveys could be extended. The survey should consider the much more frequent cycling of the hydrogen use/refill especially in relation to:

    - *the maximum pressure difference*
    - *the difference between the lowest pressure during operation and geostatic pressure*
    - *the geostatic pressure faced by the cavern walls, which is likely to be different at top and bottom of the caverns.*

    b. A risk assessment of hydrocarbon pollution in the cavern from compressor lubrication.

2. **Noise - Source Emission Data.** Provide manufacturer supplied source emission data.

Notes: The reason for this request is that the consultant has stated that source emission data is based on manufacturer supplied data, hence we require this information to allow AQMAU to review the source sound data used.

It should be noted that additional information might need to be required during the determination of your application.

You can send us this determination information by replying directly to this email with your information and copy in psc@environment-agency.gov.uk.

Without this additional information we will be unable to issue your permit.

Note: Our email system has a file size limit of 25MB, if your returns exceed this limit you will have to arrange an online file transfer. Please ensure the file transfer link does not have a time limit on it.

If you have any questions, please phone me using the contact details below.

It would be helpful if you could acknowledge the receipt of this email.

Yours sincerely,

Principal Permitting Officer, Installations