

Mr S Foster  
Drax Power Limited  
Drax Power Station  
Selby  
North Yorkshire  
YO8 8PH

**Our ref:** EPR/VP3530LS/V022

**Your ref:**

**Date:** 23/02/2023

By email

Dear Steven

### **We need more information about stage 1 of your application**

**Application reference: EPR/VP3530LS/V022**

**Operator: Drax Power Ltd**

**Facility: Drax Power Station**

Thank you for your application received on 22/08/2022.

I need to ask you for some missing information regarding the information submitted as stage 1 of the staged application. Please provide us with more information as follows:

#### Part C2 application form

Provide a revised Part C2 application form and additional documents in accordance with the following:

- Q2a and Table 1 – Confirm if the proposed new water treatment plant is a schedule 1 activity:
  - 5.3 A(1)(a) if treating 10 tonnes or more hazardous waste per day for disposal or recovery;
  - 5.4 A(1)(a) if treating 50 tonnes or more of non-hazardous waste per day for disposal; or
  - 5.4 A(1)(b) if treating 75 tonnes or more of non-hazardous waste per day for recovery where treatment is biological.

If it is a listed activity include the appropriate reference in table 1, or if the activity is not a listed schedule 1 activity, include it as a directly associated activity to the carbon capture plant in the table.

- Q5a – Provide site plans which show the revised site layout, site surfacing, drainage and water discharge points resulting from the proposed changes. The site layout plan(s) should include:

- locations of the proposed post combustion carbon dioxide capture (PCCC) process plant, the associated cooling systems, carbon dioxide compression and transfer pipeline and the new effluent treatment plant (ETP)
  - locations of areas associated with storage and handling of new hazardous substances associated with the proposed changes
  - site surfacing, new surface water drainage arrangements and any new water discharge points
- Q5c – Provide a Non-technical summary setting out the proposed changes to the permit applied for in this staged application.
  - Q6 – Provide a risk assessment in accordance with our guidance [Risk assessments for your environmental permit](#) for the proposed changes applied for in this staged application. This should consider the risks from all the changes proposed in the variation and be based on the source-pathway-receptor methodology.
  - Q6 – Relating to the air emissions risk assessment provided with the application:
    - Provide information showing the basis of the quantification of pollutants and emission rates for the amines and amine breakdown products used in the air dispersion modelling and demonstrate how this represents worst-case design emission concentrations.
    - Please provide the modelling files and input files that were used to estimate the Process Contributions (PCs) presented in the air emissions risk assessment, including cumulative impact assessment results and contour plots.
    - Provide working links to, or copies of, the documents referenced in Appendix F of the application report from which you obtained the NOAELs (No Observed Adverse Effect levels) for the amines: EAE and EA.
    - Provide the source of the meteorological data used in the air dispersion modelling, for example was this data purchased from the Met Office or other source.
    - Provide a wind rose showing the distribution of wind speed and direction for the meteorological data used in the air dispersion modelling (either a five-year average for the five years of data used or annual wind rose for each year).

The above information is required in accordance with our guidance on air emissions risk assessments. This guidance is available from the following links: [Performing air emissions risk assessments](#) and [Air dispersion modelling reports](#).

- Q6 – Relating to the water emissions risk assessment provided with the application:
  - Provide a copy of the H1 tool.
  - Provide the input data for the pollutants and the data relating to the receiving water with an explanation of where this data has been derived from.
  - Provide justification for the BAT AELs chosen in the assessment. If the effluent treatment plant is a schedule 1 listed activity (see comments in relation to Q2a and Table 1 above), the BAT AELs for discharges of process effluent into water from the Waste Treatment BAT Conclusions may be more applicable than those proposed.
  - Confirm if there are any newly designated habitats sites that could be impacted by the emissions to water since the previous water emissions risk assessment was carried out.

- Q6 – Relating to the noise impact assessment:
  - Provide a description of the proposed activities and show these on a site plan.
  - Confirm whether the assessment is based on the noise from the PCCC or in-combination with other noise sources at the site.
  - Provide details of the potential additional noise sources.
  - Describe any noise mitigation measures proposed.
  - Provide the noise survey data.
  - Provide details regarding any sound penalties or mitigation that have been taken into account in the assessment.
  - Provide the computer modelling files, calculation spreadsheets and accompanying spreadsheet with the model input data.

You should provide the above information in accordance with our guidance [Noise impact assessments involving calculations or modelling](#).

### Part C3 application form

Provide an amended Part C3 application form and additional documents in accordance with the following:

- Q1 and table 1a –The water treatment plant should be included in table 1a is a listed activity or a directly associated activity.
- Q2 – As you are including a new source into the existing discharge of surface water, you need to complete the Part C6 application form with details of the discharge. The form is available [here](#).
- Q3a – Provide a systematic review of the the proposed operating techniques against the post combustion carbon capture BAT guidance available from [this link](#). Where appropriate you can reference sections of the application which provide specific details, but additional detail, over and above what is already included in Phase 1 of the application submission, will be required regarding:
  - Efficiency of fuel use and heat integration – ideally including a Sankey diagram or other similar figure. Specifically information is required regarding the impact of the use of PCCC on the LCP and whether the BAT AEELs will be met.
  - Solvent selection – data supporting how you have considered impact on efficiency, heat demand, energy penalty, water and solvent use.
  - Flue gas cleaning – details of the demister/droplet removal from PCCC process.
  - Monitoring – a plan for emissions monitoring during commissioning stage
  - Confirm if CO<sub>2</sub> is to be captured during start up/shut down of the LCP.
- Q3a – Provide flow or block diagrams to help describe the following proposed operations or processes:
  - Water use cycles
  - Cooling water circuits and links to the ETP
  - Process water flows and links to the ETP
  - Surface water drainage and discharges
- Q3a1 – You have ticked the box to say that documents and references in the current permit (in the operating techniques table) are no longer valid or have been superseded but you have not provided any information about which documents or

references need to be removed or any justification for why this is the case.

- Q3b and table 4 – You have not provided a reference for a Noise Management Plan in table 4 and no such plan has been submitted although the charge for the assessment of the Noise Management Plan has been paid. Please provide a Noise Management Plan in accordance with our guidance [Noise and vibration management: environmental permits](#).
- Q6a-e – Complete these questions.

Please send the information, quoting the above application reference, to:

Email address: [psc@environment-agency.gov.uk](mailto:psc@environment-agency.gov.uk).

Postal address:

Permitting and Support Centre  
Quadrant 2  
99 Parkway Avenue  
Parkway Business Park  
Sheffield  
S9 4WF

Please send the information with your stage 2 application information, which is due at the end of March 2023 as agreed as part of the staged application process. However, if you wish to submit the duly making information in respect of stage 1 of the application earlier than the end of March, please discuss this with us. If you do submit the duly making information together with the stage 2 application information, please make it clear in your submission which part of the application the information relates to.

If we do not receive the information, or the stage 2 application information by this date, we will not do any further work on your application.

We'll assess your claim for confidentiality once we have received all the staged application information and your application is duly made.

We have identified other information that will be required before we can carry out our full review of the air emissions risk assessment. Whilst this is not required in order to duly make the application, it will be required in order for us to review the modelling.

The information is as follows and relates to the air dispersion modelling in section 7.14 of the supporting information document:

- Please explain how you have worked out the combined exhaust source term parameters presented in table 14 of the air emissions risk assessment and justify the rationale and appropriateness of the combined exhaust temperatures, diameters and velocities.
- Explain how you have worked out the pollutant emission rates used in your model. We note inconsistencies between tables 8 and 10 (ELVs), and tables 13, 14 and B1 (inputs to the model). Please present a table of pollutant emission concentrations (or ELVs), actual (and actual conditions) and normalised volume flows, and pollutant emission rates per individual flue to evidence the combined emission scenarios (referred to in previous point) and consistency. Please also clarify which emission

concentrations are used in the assessment of impacts from amines and HCl emissions.

- Please provide the input parameters used in the amines chemistry module and a justification that they are robust and fit for purpose, including the amine-specific atmospheric reaction parameters and the ratio of NO<sub>x</sub> to NO<sub>2</sub> at the stack. Please include the high and low range kinetic parameter values considered in your sensitivity analysis and their source of information.
- Please explain your approach to estimate acid deposition impacts at Thorne Moor (SAC, SSSI) and Lower Derwent Valley (SAC) presented in table 23 and clarify whether all potential acidifying pollutants released have been included.

You may want to submit the above information together with the information required in order to duly make the application. However, you are not required to and we would then ask for this information once we have received all the information at each stage of the application and have duly made the application.

If you have any questions please phone [redacted] or email [redacted] or phone [redacted] or email [redacted]

Yours sincerely

[redacted]

[redacted] [redacted]  
[redacted] [redacted]