Permitting Decisions- Bespoke Permit

We have decided to grant the permit for Biomass Energy Centre Oak Road operated by AMP Biomass (Net Zero 2) Limited.

The permit number is EPR/DP3944QX.

The application is for a 13.3 MW thermal input biomass boiler fuelled on virgin woodchip. The boiler produces steam, heat and hot water; this is a Directly Associated Activity to Equus UK Topco Limited's Oak Road Site, which produces organic chemicals. The permit number for Equus UK Topco Limited, Oak Road Site is: EPR/GP3820PD. The site is a multi-operator permit.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It:

- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- highlights key issues in the determination
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit.

Key issues of the decision

Emissions to air

The Directly Associated Activity consists of a single biomass boiler with a thermal rated input of 13.3 MW. It will be fuelled solely on virgin timber. It is a Medium Combustion Plant and therefore is subject to Schedule 25A of the Environmental Permitting (England and Wales) (Amendment) Regulations 2018.

The boiler will be operated and maintained by AMP Biomass (Net Zero 2) Limited but is considered a Directly Associated Activity (DAA) to the existing permitted activity operated by Equus UK Topco Limited, (EPR/GP3820PD). There are multiple permitted emission sources on site that were considered for an in-combination assessment by the consultant.

The consultant has assessed emissions to air against the relevant environmental standards and the potential impact upon local human health and ecological receptors using detailed air modelling assessment.

Assessment Methodology

A methodology for risk assessment of point source emissions to air is set out in our guidance *Air emissions risk assessment for your environmental permit* and has the following steps:

- Describe emissions and receptors.
- Calculate process contributions.
- Screen out insignificant emissions that do not warrant further investigation using the Environment Agency's screening tool.
- Decide if detailed air modelling is needed.
- Assess emissions against relevant standards.
- Summarise the effects of emissions.

We use this methodology to assess the impacts on air quality in the determination of applications.

The methodology uses a concept of "process contribution (PC)", which is the estimated concentration of emitted substances after dispersion into the receiving environmental media at the point where the magnitude of the concentration is greatest. The methodology provides a simple method of calculating PC, primarily for screening purposes, and for estimating process contributions where environmental consequences are relatively low. It is based on using dispersion factors. These factors assume worst case dispersion conditions with no allowance made for thermal or momentum plume rise and so the process contributions calculated are likely to be an overestimate of the actual maximum concentrations. More accurate calculation of process contributions can be achieved by mathematical dispersion models, which take into account relevant

parameters of the release and surrounding conditions, including local meteorology.

Air dispersion modelling enables the PC to be predicted at any environmental receptor that might be impacted by the emissions from a plant. Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Standards (ES).

PCs are considered insignificant if:

- The long-term process contribution is less than 1% of the relevant ES.
- The short-term process contribution is less than 10% of the relevant ES.

The long term 1% process contribution insignificance threshold is based on the judgements that:

- It is unlikely that an emission at this level will make a significant contribution to air quality.
- The threshold provides a substantial safety margin to protect health and the environment.

The short term 10% process contribution insignificance threshold is based on the judgements that:

- Spatial and temporal conditions mean that short term process contributions are transient and limited in comparison with long term process contributions.
- The threshold provides a substantial safety margin to protect health and the environment.

Where an emission is screened out in this way, we would normally consider that the Applicant's proposals for the prevention and control of the emission to be acceptable. However, where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant.

For those pollutants which do not screen out as insignificant, we determine whether exceedances of the relevant ES are likely. This is done through detailed audit and review of the Applicant's air dispersion modelling, taking background concentrations and modelling uncertainties into account.

Where the PC is greater than these thresholds, the assessment must continue to determine the impact by considering the predicted environmental concentration (PEC). The PEC is the combination of the PC substance to air and the background concentration of the substance which is already present in the environment.

The PECs can be considered 'not significant' if the assessment has shown that both the following apply:

- Proposed emissions comply with associated emission levels (AELs) or the equivalent requirements where there is no AEL.
- The resulting PECs won't exceed 100% of the environmental standards.

Air emissions assessment

The applicant provided an assessment of the impact of emissions to air with the application which is detailed in document titled: "Air Quality Assessment for Environmental Permit: Croda Europe Limited, Oak Road", reference: "J10-14177A-10", dated: 17.01.2023".

We have reviewed the assessment and are satisfied that either the Operator or ourselves have taken into account all relevant ecological and human health receptors, that the model and its inputs are appropriate and that the assessment has been carried out in accordance with our guidance.

Predicted impacts at human receptors

We agree with the applicant's conclusions that the impact of the emissions at human receptors is not significant.

The consultant's maximum predicted long-term (LT) and short-term (ST) nitrogen dioxide (NO_2) process contributions (PCs) are not insignificant. However, the predicted environmental concentration (PEC) does not exceed the relevant environmental standards (ES) at any receptor and are therefore not considered significant. The results are presented in Tables 26 and 27 of the consultant's air quality assessment report.

The consultant's maximum predicted long-term dust (PM_{10}) PCs are not insignificant. However, the PECs do not exceed the relevant ES and are therefore not considered significant. The maximum long-term $PM_{2.5}$ and short-term PM_{10} PCs are insignificant at any discrete receptor location. The results are presented in Tables 28 to 30.

Predicted impacts at ecological receptors

There are two Local Wildlife Sites (LWS) and one Local Nature Reserve (LNR) within the screening distance of 2km.

There is one site designated as a Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar within the screening distance of 10km: The Humber Estuary.

The consultant did not predict any exceedances of the annual and daily NOx critical levels and the nutrient nitrogen and acid deposition critical loads. Presented in Table 31.

Summary

We agree with the consultant's conclusions regarding the impacts on human and ecological receptors.

The new biomass boiler, fuelled only on virgin woodchip, is permitted to operate for up to 8,760 hours per year at the modelled oxides of nitrogen (NOx) ELV of 300 mg/m^3 (at 6% oxygen (O_2)) to prevent breaches of the environmental quality standards in accordance with the air quality assessment submitted with the permit application.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Local Authority
- Director of Public Health
- Health and Safety Executive
- UK Health Security Agency

The comments and our responses are summarised in the consultation responses section.

Operator

We are satisfied that the applicant (now the operator) is the person who will have control over the operation of part of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, Appendix 2 of RGN2 ‘Defining the scope of the installation’ and Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’.

The operator has provided the grid reference for the emission point from the medium combustion plant.

The extent of the facilities are defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

This permit applies to only one part of the installation: the 13.3 MWth biomass boiler. The names and permit numbers of the operators of other parts of the installation are detailed in the permit's introductory note.

The site

The operator has provided a plan which we consider to be satisfactory.

This show the extent of the site of the facility.

The plan shows the location of the part of the installation to which this permit applies on that site.

The plan is included in the permit, showing the permitted area for the biomass boiler on the east of the Oak Road Site, next to the River Hull.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation,

landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified. For further information, please see: “Predicted impacts at ecological receptors” in the key issues section.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator’s risk assessment is satisfactory.

General operating techniques

BAT Assessment

The BAT Conclusions for the production of organic chemicals apply to the main installation operated by Equus UK Topco Limited, however this guidance document does not specifically cover combustion processes. We have therefore reviewed the measures proposed and compared them against our guidance on Medium Combustion Plant. We have also considered indicative BAT from the next most relevant sector (BREF Document for Large Combustion Plants published in December 2017). We are satisfied that the proposed measures represent BAT for the installation. A summary is provided below.

Control of NOx emissions

The Operator confirmed that the biomass boiler can meet the MCPD emission limits for new plants fired on woody virgin biomass. We have assessed the air emissions from the proposed biomass boiler and agree with the conclusions (see emissions to air section above for further details). We are therefore satisfied that the proposed MCP is BAT and no additional abatement equipment is required to control NOx emissions.

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Raw materials

We have specified limits and controls on the use of raw materials and fuels. Only biomass chips or pellets comprising virgin timber are permitted to be used to fuel for the biomass boiler unit.

Emission Limits

Emission Limit Values (ELVs) have been set for the following substances:

- Oxides of nitrogen (NOx)
- Dust (particulate matter: PM_{10})

The limits set are based on the emission limits the Operator confirmed the combustion plant is able to meet, in line with the requirements set out in the Medium Combustion Plant Directive. See the key issues section above for further explanation.

Monitoring

We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.

These monitoring requirements have been imposed in order for the Operator to demonstrate compliance with the emission limits specified in the permit. The Operator will carry out monitoring in accordance with MCERTS.

We made these decisions in accordance with MCP technical guidance.

Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.

Reporting

We have specified reporting in the permit.

- Oxides of nitrogen (NOx)
- Carbon monoxide (CO)
- Dust (PM_{10})

We made these decisions in accordance with the MCP technical guidance.

Management System

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Financial competence

There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section:

Response received from Environmental Health, Local Planning Authority, Hull City Council, received:12/04/2023.

Brief summary of issues raised:

Emissions to air from combustion

Summary of actions taken:

The above comment has been addressed during our assessment of the detailed air quality modelling. Please see the key issues section of this document for further information.

Response received from UK Health Security Agency (UKHSA), received: 12/04/2023.

Brief summary of issues raised:

The main emissions of potential concern are combustion gases and particulate matter, emissions to air. We note the applicants air quality assessment for nitrogen dioxide and particulate matter (PM_{10} and $PM_{2.5}$).

The above comment has been addressed during our assessment of the detailed air quality modelling. Please see the key issues section of this document for further information.

The application also was publicised on the www.gov.uk website, with a deadline for comments of 13/04/2023. No comments were received.