



ENVIRONMENTAL STATEMENT - VOLUME 3 - APPENDIX 6.1

Overview of Relevant Air Quality Guidance Documents

Drax Bioenergy with Carbon Capture and Storage

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations, 2009 – Regulation (5(2)(a))

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1. OVERVIEW OF RELEVANT AIR QUALITY GUIDANCE DOCUMENTS

- 1.1.1. A summary of each of the relevant air quality guidance documents referenced throughout the air quality assessment reported in **Chapter 6 (Air Quality)** (document reference 6.1.6) is provided below.

LOCAL AIR QUALITY MANAGEMENT REVIEW AND ASSESSMENT TECHNICAL GUIDANCE

- 1.1.2. The Department for Environment, Food and Rural Affairs (Defra) has published technical guidance for use by local authorities in their air quality review and assessment work (Defra, 2018). This document also provides technical guidance with respect to undertaking atmospheric dispersion modelling and handling of Defra's background pollutant map data (Defra, 2022).

GUIDANCE ON THE ASSESSMENT OF DUST FROM DEMOLITION AND CONSTRUCTION

- 1.1.3. This document published by the Institute for Air Quality Management (IAQM, 2016) provides guidance to developers, consultants and environmental health officers on how to assess the impacts arising from construction activities. The emphasis of the methodology is on classifying sites according to the risk of impacts (in terms of dust nuisance and PM₁₀ impacts on public exposure and impact upon sensitive ecological receptors) and to identify mitigation measures appropriate to the level of risk identified, such that residual effects will usually be not significant.

LAND-USE PLANNING & DEVELOPMENT CONTROL: PLANNING FOR AIR QUALITY

- 1.1.4. Environmental Protection UK (EPUK) and the IAQM have published guidance (EPUK & IAQM, 2017) that offers comprehensive advice on: when an air quality assessment may be required; what should be included in an assessment; how to determine the significance of any air quality impacts associated with a development; and, the possible mitigation measures that may be implemented to minimise these impacts.

GUIDANCE ON THE ASSESSMENT OF AIR QUALITY IMPACTS ON DESIGNATED NATURE CONSERVATION SITES

- 1.1.5. This document published by the IAQM (IAQM, 2019) provides guidance to air quality professionals to assist in the assessment of air quality impacts of development, both alone in combination with other plans and projects, on designated nature conservation sites. The document focusses on air quality assessments in support of Habitats Regulations Assessments (HRA) but can also be used in assessing the impact on national and/or local designated sites.

AIR POLLUTION INFORMATION SERVICE WEBSITE

- 1.1.6. The Air Pollution Information Service (APIS) website (UK Centre for Ecology & Hydrology, 2021) provides background and indicative assessment levels for a suite of pollutants, as well as nutrient nitrogen and acid deposition. APIS enables the user to identify applicable background levels, specific pollutant critical levels, and both nutrient nitrogen and acid deposition critical loads pertaining to sensitive habitats and species within relevant statutory designated sites. The website is hosted by the UK Centre for Ecology and Hydrology and developed in partnership with the UK conservation and regulatory agencies.

ENVIRONMENT AGENCY: AIR EMISSIONS RISK ASSESSMENT FOR YOUR ENVIRONMENTAL PERMIT

- 1.1.7. The air emissions risk assessment guidance (Environment Agency, 2021) provides guidance on how to assess the potential impacts of emissions from an existing or proposed activity, including determining potential significance of impacts alongside a suite of environmental assessment levels (EALs) relating to human health and ecological receptors. This guidance has been referenced throughout the operation phase air quality assessment.

SELBY DISTRICT COUNCIL: AIR QUALITY PLANNING GUIDANCE NOTE

- 1.1.8. Selby District Council (SDC) has published an air quality planning guidance note (Selby District Council, 2014) to support developers when preparing air quality assessments. The guidance includes a checklist that enables applicants to check all relevant information has been included in the reported detailed air quality impact assessment.

AQMAU RECOMMENDATIONS FOR THE ASSESSMENT AND REGULATION OF IMPACTS TO AIR QUALITY FROM AMINE-BASED POST-COMBUSTION CARBON CAPTURE PLANTS

- 1.1.9. The Environment Agency published this guidance in November 2021 (Environment Agency, 2021), providing an appraisal of some of the key knowledge gaps and considerations associated with assessing air quality impacts from amine emissions relating to carbon capture plants. The report summarises the Agency's recommendations for the regulation of amine emissions based on the modelling experience and review of available evidence. Importantly, the guidance provides advice to applicants submitting air quality assessments based on using the ADMS amines module, including recommendations for undertaking sensitivity testing to address uncertainty.
- 1.1.10. Accordingly, the amines chemistry modelling undertaken for the Proposed Scheme air quality assessment, as reported in **Chapter 6 (Air Quality)** and **Appendix 6.3 (Atmospheric Dispersion Modelling)** (document reference 6.3.6.3), has been completed with reference to this guidance.

CERC ADMS 5 AMINE CHEMISTRY USER GUIDE SUPPLEMENT

- 1.1.11. The developers of the ADMS 5 Amine Chemistry Module, CERC, published a user guide document (CERC, 2016) alongside the software release. This guide enables the model user to input a suite of variables, including hourly background pollutant files, amine emission rates from the stack, and specific compound data such as molar mass and key reaction rate coefficients, all of which are required to facilitate modelling of amine chemistry and prediction of ground level concentrations.

AQTAG06 TECHNICAL GUIDANCE ON DETAILED MODELLED APPROACH FOR AN APPROPRIATE ASSESSMENT FOR EMISSIONS TO AIR

- 1.1.12. This guidance published by the Environment Agency (Environment Agency, 2014) provides guidance on how to carry out a quantitative assessment (Stage 3 appropriate assessment) using dispersion modelling for emissions to air arising from a permitted process, in order to determine if a proposal would or would not have an adverse effect on the integrity of relevant European Sites (ecological receptors) within the study area.
- 1.1.13. Specifically, the document provides an approach to calculating deposition fluxes of key pollutants including NO₂, SO₂, NH₃, and HCl, which has been adopted for the Proposed Scheme operation phase air quality assessment in determining deposition of nutrient nitrogen and acid at identified sensitive habitats within the assessed statutory and non-statutory ecological sites.

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