

Permitting Decisions- Bespoke Permit

We have decided to grant the permit for Pincroft CHP operated by Centrica Business Solutions UK Ltd.

The permit number is EPR/RP3842YJ.

The application is for the operation of a combined heat and power plant (CHP) which is a directly associated activity to the Section 6.4 Part A(1) (b) activity carried out at the main Pincroft Dyeing & Printing Co. Ltd site, providing electricity and steam/low temperature hot water.

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

Air emissions

The Combined Heat and Power Plant has a thermal input of 3.05 MW making it a Medium Combustion Plant (MCP). This means that emission limit values and monitoring apply according to the Medium Combustion Plant Directive 2015 (MCPD). The CHP will release oxides of nitrogen dioxide (NO_x) and carbon monoxide (CO) into the atmosphere which have the potential to adversely impact human health and ecological receptors. There are several residential properties,

a cricket club and a nursery within the vicinity of the site. There are also 6 local wildlife sites and one ancient woodland within the 2km screening distance.

The potential impact of NO_x and CO upon sensitive receptors was considered by the applicant who submitted air dispersion modelling to support their application. An initial screening demonstrated that CO had a negligible impact compared to NO_x. The air dispersion modelling was based on the CHP being operated for 8,760 hours per year at the emission limit value of 95 mg/Nm³ NO_x ^{note1} which is applicable under MCPD to a new engine fired on natural gas. We reviewed the modelling and associated report and concluded that the CHP should be permitted to operate for 8,760 hours with emissions limited to 95 mg/Nm³ NO_x ^{note1} as required by MCPD to prevent breaches of environmental standards at any sensitive receptor. Monitoring of both CO and NO_x is required by MCPD and is included in the permit.

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 - GOV.UK \(www.gov.uk\)](http://www.gov.uk), and has the following steps:

- Describe emissions and receptors
- Calculate process contributions
- Calculate predicted environmental concentrations.
- Screen out insignificant emissions that do not warrant further investigation.
- 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; and
- 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; and
- 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; and
- 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; and

- the resulting PECs won't exceed 100% of the environmental standards.

As the Environmental Standards are often given for NO₂ rather than NO_x, for combustion processes where no more than 10% of nitrogen oxides are emitted as nitrogen dioxide, worst case conversion ratios to nitrogen dioxide of:

- 35% for short-term average concentrations
- 70% for long-term average concentrations

Are used (see [Environmental permitting: air dispersion modelling reports - GOV.UK \(www.gov.uk\)](#)).

Methodology for local nature sites:

Emissions at local nature sites (including ancient woods, local wildlife sites and national/local nature reserves) can be considered insignificant if the short- and long-term PCs are less than 100% of the environmental standard. The release of NO_x can impact ecological receptors directly, but also indirectly through the deposition of acid and nitrogen. Environmental Standards for acid and nitrogen deposition are location and habitat specific and can be identified using the Air Pollution Information System (APIS) [Air Pollution Information System | Air Pollution Information System \(apis.ac.uk\)](#).

Air quality assessment:

The conclusion to permit the CHP to operate under the conditions specified in the permit was made based on the following considerations:

Human receptors:

- The maximum long-term and short-term NO₂ process contributions (PCs) from the installation were not insignificant ($\geq 1\%$ or $\geq 10\%$ respectively of the relevant environmental standards). However, the predicted environmental concentration (PEC), including background concentrations, did not exceed the relevant environmental standards (40 $\mu\text{g}/\text{m}^3$ NO₂ and 200 $\mu\text{g}/\text{m}^3$ NO₂^{note2} for assessing long- and short-term impacts respectively) at any human receptor.
- The maximum long-term PEC at any sensitive human receptor was predicted by the applicant's modelling to be 66% of the relevant environmental standard of 40 $\mu\text{g}/\text{m}^3$ NO₂. The maximum short-term PEC at any sensitive receptor was predicted by the applicants' modelling to be 35% of the environmental standard of 200 $\mu\text{g}/\text{m}^3$ NO₂^{note2}.
- Our audit of the air dispersion modelling corroborated the applicant's conclusions that at an emission limit of 95 mg/Nm³ NO_x^{note1}, the relevant

environmental standards would not be exceeded at any sensitive human receptor. The audit additionally considered:

- An additional receptor (Hollybrook Children's Nursery)
- The use of a more conservative estimate of background NO₂.
- The effects of building downwash.

Ecological receptors

The applicant modelled the potential impact upon the 7 local nature sites identified within the screening distance. The impact upon these sites was found to be insignificant (the process contribution from the installation was less than the relevant environmental standard in each case).

- The maximum predicted annual mean process contribution of NO₂ at any nature site was < 1% of the environmental standard of 30 µg/m³ NO₂. The maximum predicted process contribution averaged across a 24-hour period was 5.9% of the environmental standard of 75 µg/m³ NO₂ at Leeds and Liverpool Canal Local Wildlife Site.
- The maximum predicted annual process contribution of nitrogen deposition was < 1% of the lower critical load. The lower critical load was derived for deciduous (broadleaved, mixed and yew) woodland at 10-20 kg N ha⁻¹ year⁻¹ from the APIS website.
- The maximum predicted annual process contribution of acid deposition was < 1% of the maximum critical level. The maximum critical level was derived for deciduous (broadleaved, mixed and yew) woodland at 1.546 keq ha⁻¹ yr⁻¹ from the APIS website.

Note 1: this is the normalised concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15%.

Note 2: this is calculated as the 99.79th percentile of the 1 hour 200 µg/m³ NO₂ mean to account for allowed exceedances.

Surface water drainage

Surface water and boiler blowdown from the Pincroft CHP site will be collected and piped to an existing process effluent drain on the Pincroft Dyeing and Printing Co Limited site (EPR/BL8651IX). Pincroft Dyeing and Printing Co Limited applied to vary their permit (EPR/BL8651IX/V005) to include multi-operator conditions and provided a risk assessment for the discharge. The risk assessment concluded that the influent from the Pincroft CHP site onto the Pincroft Dyeing and Printing site will not have any impact upon the ability of the Pincroft Dyeing and Printing Site to operate satisfactorily under their environmental permit, and within the limits stated in the trade effluent discharge consent granted by United Utilities. We are therefore satisfied that given the non-

hazardous nature of the effluent, the controls in place on the Pincroft CHP site (as described in the operating techniques section of the permit), and the relatively low volumes involved, the disposal of this effluent to sewer via the effluent treatment plant on the Pincroft Dyeing and Printing site will not have a negative impact upon the receiving water body.

Decision considerations

Confidential information

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

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 – Environmental Health
- Health and Safety Executive
- Director of Public Health & UKHSA (formerly PHE)

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 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 Appendix 2 of RGN2 'Defining the scope of the installation'.

The extent of the facility is 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 operation of a combined heat and power plant providing electricity and steam/low temperature hot water to the Pincroft Dyeing and Printing Co Limited site (EPR/ BL8651IX). The Pincroft Dyeing and Printing Co Limited Site carries out the Schedule 1 Section 6.4 A(1)(a) activity as listed in the Environmental Permitting Regulations 2016 involving Pre-treating (by operations such as washing, bleaching or mercerization) or dyeing fibres or textiles in plant with a treatment capacity of more than 10 tonnes per day. 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 plans which we consider to be satisfactory.

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

The plans are included in the permit.

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.

There are 6 local wildlife sites and one ancient woodland within the 2km screening distance. The applicant carried out air dispersion modelling to assess the impact upon these sites from emissions originating from the Combined Heat and Power Plant. We carried out an audit of this assessment and a summary of the conclusions can be found in the Key issues section.

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.

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

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.

Operating techniques for emissions that do not screen out as insignificant

Emissions of oxides of nitrogen (NO_x) cannot be screened out as insignificant. We have assessed whether the proposed techniques are Best Available Techniques (BAT) according to the Medium Combustion Plant Directive (MCPD) 2015, the Reference Document on Best Available Techniques for the Textiles Industry (BREF) 2003 and the Reference Document on Best Available Techniques for Energy Efficiency 2009. A summary of this assessment can be found in the [Key issues](#) section of this document.

The proposed emission limit values for emissions that do not screen out as insignificant are in line with emission limit values specified in MCPD and we consider them to represent appropriate techniques for the facility. The permit conditions enable compliance with relevant BAT reference documents (BREFs) and Emission Limit Values (ELVs).

Operating techniques for emissions that screen out as insignificant

Emissions of carbon monoxide have been screened out as insignificant, and so we agree that the applicant's proposed techniques are Best Available Techniques (BAT) for the installation.

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.

Emission Limits

Emission Limit Values (ELVs) based on MCPD requirements have been added for the following substances:

- Oxides of nitrogen (NO_x).

An emission limit value of 95 mg/Nm³ NO_x ^{note1} has been added to the permit which is applicable under MCPD to a new engine fired on natural gas. We consider this to be in-line with Best Available Techniques (BAT) for the installation.

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.

- Oxides of nitrogen (NO_x)
- Carbon monoxide (CO)

These monitoring requirements have been included in order for the Operator to demonstrate compliance with the emission limits specified in the permit for the CHP.

We made these decisions in accordance with MCP technical guidance which provides minimum standards for monitoring under MCPD.

Reporting

We have specified reporting in the permit for the following parameters:

- Oxides of nitrogen (NO_x)
- Carbon monoxide (CO)

These reporting requirements have been included in order for the Operator to demonstrate compliance with the emission limits specified in the permit for the CHP. We made these decisions in accordance with MCPD.

We have also specified reporting in the permit of annual water use in m³.

Water is required by the CHP and as the Pincroft CHP site will be providing energy, steam and low temperature hot water to Pincroft Dyeing and Printing Co. Limited Site, it will help both installations to comply with their obligations to regularly review water use in accordance with Reference Document on Best Available Techniques for the Textiles Industry (BREF) 2003.

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 UKHSA

Brief summary of issues raised: None raised.

Summary of actions taken: None required.

Response received from Chorley Council

Brief summary of issues raised: Chorley Council questioned the use of background monitoring stations at Wigan Centre and Preston as the most relevant sources of background concentrations of emissions to air used by the applicant in their air dispersion modelling. They provided links to data from local passive diffusion tubes.

Summary of actions taken: Pincroft CHP were advised when resubmitting their air dispersion modelling to the Environment Agency for assessment during the determination of their permit, to consider the data from local passive diffusion tubes. Data from local passive diffusion tubes was subsequently used by the applicant in their modelling and we have also carried out an audit of the applicant's air dispersion modelling and considered the impact of using more conservative background concentrations as part of this audit.