Permitting decisions

Bespoke permit

We have decided to grant the permit for Mueller Europe Ltd. operated by E.On Connecting Energies Limited.

The permit number is EPR/XP3805PY.

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 checklist to show how all relevant factors have been taken in to account.

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

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- 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. The introductory note summarises what the permit covers.

Key issues of the decision

Description of the facility and summary of variation application

This permit authorises E.On Connecting Energies (ECT) to operate a reciprocating Combined Heat and Power (CHP) gas engine on the site of Mueller Europe Ltd (permit reference: BJ9843IH). This multi-operator installation is located in a primarily industrial area of Bilston, Wolverhampton (central grid reference SO 95726 96216). The site is bounded by Mueller Europe Ltd main works building to the east, industrial buildings to the west and industrial units to the north and south.

The gas engine has a thermal rated input of 5.965MWth and is housed in a container adjacent to the Mueller Europe building. The engine is a Specified Generator that is also Medium Combustion Plant (MCP) as it is over 1MW and is therefore subject to Schedule 25A and Schedule 25B of the Environmental Permitting Regulations (Amendment) 2018.

The CHP is installed on hardstanding that had no previous use prior to the installation of the CHP. It is primarily operated remotely from the Control Centre in Essen, Germany but can also be operated from the unit. The ECT Operations Team are responsible for managing the plant.

The installation will utilise natural gas for the production of electricity. The CHP is equipped with a load balancing dump radiator for water circuit heat rejection and as such the unit will operate as power generation only. There will be one point source emission to air from this installation.

The containerised unit also includes two double-bunded 1,000 litre lubrication oil bulk tanks which are equipped with overfill protection which shuts down the engine in the event of a full tank to avoid overfilling. The oil level of both oil tanks is monitored via level sensors.

There are no point source emissions to surface water drains or to sewer on the ECT site. The process does not generate any effluent. A small quantity of condensate is produced on start-up of the gas engine - typically the engine is started once a week. Approximately 1 litre of condensate is generated in cold weather and less in warm weather. The condensate is held in a container and then discharged via Mueller's foul sewer emissions point, under consent from Severn Trent Water. All surface water run off drains to Mueller's point source emission to surface water.

The nearest European designated habitats site to the installation is Fens Pools Special Area of Conservation (SAC), located over 7km to the south west.

Air Quality - Impacts on Human Health

The fitting of a new 5.965 MWth CHP engine to provide electricity for the installation meets the definition of a listed Medium Combustion Plant (MCP) Activity.

In line with the Environment Agency's guidance, we require applicants to submit detailed air dispersion modelling and impact assessment to assess the predicted impacts on both human receptors (for example dwellings, work places and parks) and ecological sites. The closest sensitive receptors where the public are regularly present are located over a kilometre from the installation. The installation is 7 km from Fens Pools SAC. It is also located within the Wolverhampton Air Quality Management Area for PM10 and NO_2.

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
- 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.

The operator has undertaken a detailed assessment air quality screen (report reference: *Air Impact Assessment: 2G Energy Limited Mueller Europe Limited. August 2018*). The modelling parameters and output predictions of this study and assessment have been validated using the Environment Agency air quality modelling and assessment unit (AQMAU) Screening Tool. We agree with the conclusion that there will be no likely exceedance of the air quality objectives for nitrogen dioxide or carbon monoxide. Further detail is provided below.

The following parameters were used to carry out the assessment:

Stack Parameter	**Proposed CHP engine stack (A1)**
Stack height (m)	12m
Diameter (m)	0.5m
Location (x,y)	395726, 296216
Emission rate of NOx as NO_2 (g/s)	0.19
Emission rate of CO (g/s)	0.76
Efflux velocity at flue exit (m/s)	14.6
Efflux temperature (°C)	100

All main site buildings were considered high enough to have a significant effect on dispersion from the main stack. Input parameters for these buildings have been included in the modelling report. We are satisfied that dispersion effects from these building have been suitably considered in the modelling assessment.

Background concentrations of NO_2 were obtained from the nearest automatic air quality monitoring site to the installation, located 1km west of the installation. The maximum NO_2 concentration measured between

2012 and 2016 of 23µg/m^3 has been used in the assessment. Background concentrations of CO were obtained from the Department for Environment, Food and Rural Affairs (DEFRA) Local Air Quality Management (LAQM) website. The background concentration of 452µg/m^3 has been used in the assessment.

NO_2

The short term and long term maximum predicted NO_2 concentrations at the nearest public sensitive receptor are shown below:

Receptor	Air Quality Objective	Objective value (µg/m^3)	PC (NO_2) (µg/m^3)	PC % AQS	x, y (closest offsite receptor)	Background (µg/m^3)	PEC (NO_2) (µg/m^3)
Oxford Street – residential receptor	**Short-term AQS**	200	4.7	2.35%	395620, 296075	46	50.7
	Long-term AQS	40	0.37	0.93%		23	23.37

PC – Process concentration; AQS - National UK Air Quality Standard; PEC – Predicted Environmental Concentration

The short term modelling results at the closest offsite discrete receptor demonstrates that NO2 can be considered insignificant according to our H1 criteria because the process contribution (PC) is less than 10% of the short-term environmental standard (2.35%).

The long term modelling results at the closest offsite discrete receptor demonstrates that NO2 can be considered insignificant as the PC is less than 1% of the long-term environmental standard (0.93%).

Therefore we have concluded air emissions impacts at sensitive receptors are insignificant and will not exceed Air Quality Standards.

Carbon monoxide

The short term modelling results at the maximum predicted CO concentration off site and at the nearest public sensitive receptor are shown below. There is no long-term air quality standard for CO.

Receptor	Air Quality Objective value (µg/m^3)	PC (CO) (µg/m^3)	PC % AQS	Background (µg/m^3)
Maximum off site	10,000	8.8	0.088	452

PC – Process concentration; AQS - National UK Air Quality Standard

The short term modelling results at the closest offsite sensitive receptor and the maximum calculated concentration demonstrates that CO can be considered insignificant because the PC is less than 10% of the short-term environmental standard.

Air Quality - Impacts on Habitats

From our guidance, PCs are considered **insignificant** (and therefore we conclude no effect) on a European designated habitat site 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.

We also consider that there would be no likely significant effect at the screening stage, if PECs are <70% of the critical level / critical load.

For National Nature Reserves, Local Nature Reserves, Local Wildlife Sites and ancient woodland the threshold is 100% of the critical level of the short and long term process contribution.

Modelling was undertaken to assess potential air emission impacts on Fens Pool Special Area of Conservation (SAC), located over 7km from the installation boundary at the closest point, and Moorcroft Wood Local Nature Reserve (LNR), approximately 1km southeast of the installation at the closest point.

NOx

Predicted maximum ground level concentrations of NOx at the identified habitat sites are compared with the relevant critical levels below:

Habitat site	**Annual mean**		**24 hour mean**	
	PC (µg/m^3)	**PC (% CL)**	**PC (µg/m^3)**	**PC (% CL)**
Critical Level	30		75	
Fens Pool SAC	0.0014	0.005%	0.0078	0.01%
Moorcroft Wood LNR	0.029	0.096%	0.12	0.16%

At Fens Pool SAC the predicted annual mean and 24-hour mean NOx process contribution do not exceed the 1% and 10% thresholds of the critical levels. Therefore it is considered NOx levels from the boiler will have no likely significant effect on the SAC habitats and features present.

At Moorcroft LNR the predicted annual mean and 24-hour mean NOx process contribution do not exceed the 100% thresholds of the critical level.

We can therefore conclude there will be no impacts to designated habitat conservation sites as a result of air emissions from the new CHP plant at the installation.

Decision checklist

Aspect considered	Decision
Receipt of application	
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	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website between 27th August 2019 and 27th September 2019. We consulted the following organisations: • Public Health England • Health and Safety Executive • Director of Public Health – Wolverhampton District Council • Environmental Health Department – Wolverhampton District Council The comments and our responses are summarised in the consultation section.
Operator	
Control of the facility	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 facility	
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 RGN 2 'Defining the scope of the installation', and Appendix 1 of RGN 2 'Interpretation of Schedule 1'. 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 principal activity for the part of the installation operated by E.On Connecting Energies Limited covered by this permit is the operation of a gas-fired Combined Heat and Power (CHP) plant. The wider installation is an existing Mueller Europe Site. The names and permit numbers of the operators of other parts of the

Aspect considered	Decision
	installation are detailed in the permit's introductory note.
The site	
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility and the location of the part of the installation to which this permit applies on that site. The plan is 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.
Biodiversity, heritage, landscape and nature conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process. We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. See Key Issues – Air Quality - Impacts on Habitats section for more information. We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment, all emissions may be categorised as environmentally insignificant.
Operating techniques	
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 screen out as insignificant	Emissions of Oxides of Nitrogen (NO and NO_2 expressed as NO_2) have been screened out as insignificant, and so we agree that the applicant's proposed technique are BAT for the installation. We consider that the emission limits included in the installation permit reflect the BAT for the sector.

Aspect considered	Decision
Emission limits	Emission Limit Values (ELVs) have been set for the following substances: • Oxides of Nitrogen (NO and NO_2 expressed as NO_2) We made these decisions in accordance with the MCP and SG technical guidance; *Medium Combustion Plan Guidance https://consult.environment-agency.gov.uk/psc/mcp-and-sg-regulations/*
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 the relevant methods specified in our guidance M5. We made these decisions in accordance with the MCP and SG technical guidance; *Medium Combustion Plan Guidance https://consult.environment-agency.gov.uk/psc/mcp-and-sg-regulations/*
Reporting	We have specified reporting in the permit. We made these decisions in accordance with the MCP technical guidance; *Medium Combustion Plan Guidance https://consult.environment-agency.gov.uk/psc/mcp-and-sg-regulations/*
Operator competence	
Management system	There is no known 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.
Relevant convictions	The Case Management System has been checked to ensure that all relevant convictions have been declared. No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.
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	
Section 108 Deregulation Act 2015 – 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

Aspect considered	Decision
	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

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
Public Health England – 19/09/2019
Brief summary of issues raised
The main emissions of potential concern are emissions to the atmosphere; however modelling has shown these emissions to be within acceptable concentrations. Based on the information contained in the application, Public Health England has no significant concerns regarding the risk to the health of the local population from the installation. This consultation response is based on the assumption that the permit holder shall take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry best practice.
Summary of actions taken or show how this has been covered
None required.

No response was received from the following organisations:

- Health and Safety Executive
- Director of Public Health – Wolverhampton District Council
- Environmental Health Department – Wolverhampton District Council