Permitting decisions

Variation

We have decided to grant the variation for Carbon Brake Facility, Coventry operated by Meggitt Aerospace Limited.

The variation number is EPR/BN7109IH/V008.

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.

1 Purpose of this document

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 and the variation notice.

2 Key issues of the decision

2.1 Overview of the installation

Meggitt Aerospace Limited operates the Carbon Brake Facility, Coventry. The site is located to the north of Coventry City centre, in the Whitmore Park area.

The existing permitted activities are described as follows:

The main purpose of the activity is the production of brake discs for aircraft through the vapour deposition of carbon through the cracking of natural gas or other hydrocarbons onto material formers. The process takes oxidised polyacrylonitrile (OPAN) fibre and converts it into a carbon fibre through mechanical and heat treatment (carbonisation process). The fibre is converted to disc shaped formers for the disc production through cutting to the required shape. The carbon formers are then turned into carbon discs through the vapour deposition of carbon onto the fibre formers in six furnaces, utilising natural gas and other hydrocarbons. They are then heat treated converting the carbon structures into graphite before finishing processes such as machining are undertaken. The processes operate on a batch basis. Finished discs are painted with anti-oxidant paint before dispatch.

The installation also contains the boiler house where four boiler units are used to generate steam. The partially cracked gas from the chemical vapour deposition furnaces is used as fuel with natural gas makeup. Furnace No. 9 is the only exception to this where the gas is flared. The steam is fed through steam ejectors to generate a vacuum, used in the furnaces during the carbon vapour deposition process. Emission control to air for the carbonisation process is undertaken through a gas-fired thermal oxidiser. In addition there are indirect discharges to sewer and one indirect discharge to surface water. The site does not have an effluent treatment plant.

The changes introduced by this variation are summarised as follows:

- The installation of an additional carbonisation furnace operated in parallel to the existing carbonisation furnace already included in the permit prior to this variation;

- The installation of a new thermal oxidiser to abate the pollutants in the exhaust gases evolving from the carbonisation furnaces (new emission point A22).

- The inclusion of three new emission points to air consisting of air extractors fitted with cartridge filters for abatement of dust from the manufacturing activities (emission points A23, A24 and A25). The main pollutant emitted by these sources are particulates.

- The installation of two new cooling towers to replace the existing units which have reached the end of their economic life and associated new discharge point to sewer (S3) for the cooling towers blow-down effluent stream.

- The installation of a storage system for liquefied natural gas (LNG) which is used during the start-up period in the existing carbon vapour deposition (CVD) furnaces.

- The inclusion of an existing building (DAIPC building) used for indoor storage of the installation main raw material (OPAN fibre) in the permit boundary.

- The expansion of the permitted boundary to the north of the installation to include the yard allocating the new cooling towers and LNG tank and the abovementioned DAIPC building.

2.2 Emissions to Air

2.2.1 Operating techniques and determination of BAT

As part of this variation, the applicant has proposed the installation of an additional carbonisation furnace to be operated in parallel to the existing carbonisation furnace already included in the permit.

Due to the additional capacity of the carbonisation process, the existing thermal oxidiser treating the exhaust gas from the existing carbonisation furnace (emission point A1), will not be sufficient to cater for the increased gaseous effluent flow rate. Therefore, the applicant has proposed the installation of a new thermal oxidiser unit (new ‘Lesni thermal oxidiser’) to abate pollutants in the carbonisation exhaust gas.

The two carbonisation furnaces, operating in parallel under the new proposed configuration, generate an exhaust gas stream that consists of pollutants including hydrogen cyanide, carbon monoxide, ammonia, hydrocarbons (VOC) and particulates in a nitrogen rich stream. This exhaust stream is directly vented into the combustion chamber of the new thermal oxidiser, where the pollutants are burnt in a combustion process assisted with natural gas.

The abated flue gases from the new thermal oxidiser are emitted from a new emission point (A22, in the permit notice). Upon completion of the commissioning activities for the new thermal oxidiser, this will replace the existing thermal oxidiser (existing emission point A1 in the permit).

The main pollutants emitted by the new thermal oxidiser (emission point A22) will be the same pollutants emitted by the existing emission point A1 that is replaced, namely: oxides of nitrogen, carbon monoxide,

residual concentrations of pollutants that are not fully oxidised: hydrogen cyanide, VOCs (class B) and particulates.

The application documents explain the NOx generation mechanism as follows:

There is no NOx produced in the carbonisation furnace process itself. In the carbonisation stage there is significant elimination of hydrogen from the structure of the OPAN fibre, as a result of larger carbonaceous structures being formed as the fibre transitions to a carbon fibre from an OPAN fibre. The dehydrogenation of the OPAN fibre, which includes chemically bonded nitrogen, results in the evolution of hydrogen cyanide (HCN). The NOx is formed in the Lesni thermal oxidiser from the oxidation of hydrogen cyanide (HCN) and as thermal NOx from the burner. The burners use natural gas as a fuel and therefore this does not lead to the production of fuel NOx.

According to the application documents, the design of the new thermal oxidiser includes the following features and techniques:

- The gas burner proposed is low NOx burner type;
- The existing thermal oxidiser unit has a 1 second residence time, whereas, the new unit is designed for 2 seconds which will improve the destruction efficiency. According to the application documents, the higher residence time will be also beneficial to reduce the concentration of NOx in the final exhaust;
- The design optimisation of the combustion is expected to increase the efficiency of VOC and hazardous air pollutant destruction resulting in improved emissions from the process, compared to the existing thermal oxidiser; the incineration is designed to operate at around 850 deg C, which is low enough not to oxidise the nitrogen produced into significant quantities of NOx type compounds;
- The design of the new thermal oxidiser considers that the ammonia produced as a by-product from the carbonising process acts in the same way as if there was to be selective non-catalytic reduction (SNCR) fitted to the system and subsequently reduces NOx emissions. The increased residence time is expected to be beneficial to allow the reaction of ammonia present in the exhaust gases with NOx and to achieve a SNCR effect without the need of additional ammonia dosing;
- The new thermal oxidiser consists of a recuperative design that incorporates integrated shell and tube heat exchanger that offers better than 65% heat recovery thus reducing gas usage and exhaust temperature in the stack.

The applicant has justified the selection of this type of design, as opposed to a catalytic (flameless) thermal oxidiser, based on the fact that the concentrations of hydrogen cyanide and hydrocarbons in the feed are too high to select a catalytic process; that the potential carry over of dust and tar in the exhaust gas would make the use of a catalytic bed non suitable; and that the proposed design is a development and improvement of the existing thermal oxidiser in the same service, that has been proven suitable for this type of application.

We have reviewed the proposed operating techniques for carbonisation process and the new thermal oxidiser against the following technical guidance: ‘Gasification, Liquefaction and Refining Installations (EPR 1.02)’, which is relevant to the scheduled activity S1.2 A1 (f). This technical guidance broadly covers S1.2 activities, however it does not address specific techniques for the carbonisation process undertaken at the installation.

There is not a BAT conclusion document or BREF note that covers the scope of the activities carried out at the installation.

Article 14(6) of the Industrial Emissions Directive requires that, where an activity or a type of production process carried out within an installation is not covered by any of the BAT conclusions or where those conclusions do not address all the potential environmental effects of the activity or process, the Environment Agency, as the Competent Authority, shall, after prior consultations with the operator, set the permit conditions on the basis of the best available techniques that it has determined for the activities or processes concerned, by giving special consideration to the criteria listed in Annex III of the IED, which are listed below:

1. The use of low-waste technology
2. The use of less hazardous substances

3. The furthering of recovery and recycling of substances generated and used in the process and of waste, where appropriate
4. Comparable processes, facilities or methods of operation which have been tried with success on an industrial scale
5. Technological advances and changes in scientific knowledge and understanding
6. The nature, effects and volume of the emissions concerned
7. The commissioning dates for new or existing installations
8. The length of time needed to introduce the best available technique
9. The consumption and nature of raw materials (including water) used in the process and energy efficiency
10. The need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it
11. The need to prevent accidents and to minimise the consequences for the environment
12. Information published by public international organisations

We have therefore determined BAT according to the requirement of Article 14(6) of the IED, taking into account the relevant criteria set in the Directive.

In line with these criteria, we have reviewed the operating techniques proposed by the operator against the following comparable sources, facilities and methods available on an industrial scale:

- The existing carbonisation process and thermal oxidiser abatement plant already permitted at the same installation. This process consists of the same technology and similar abatement of exhausts by thermal oxidation and has been operated for longer than ten years. The existing thermal oxidiser was designed by the same manufacturer of the new proposed thermal oxidiser. We consider that the operator has implemented advances in the technological knowledge and understanding of this specific process by increasing the residence time in the combustion chamber as explained in the application documents;

- BAT for abatement of hydrocarbons and VOC, as described in the Large Volume Organic Chemicals BREF and BAT conclusions (LVOC, 2017). Although the carbonisation process carried out at the installation is not in the scope of the LVOC BREF, the type of exhaust gas generated, comprising hydrocarbons and VOC is comparable to the gaseous effluents generated in the LVOC sector. BAT conclusion 10 of the LVOC-BREF includes thermal oxidation as one of the techniques considered BAT to reduce emissions of organic compounds to air;

- BAT for abatement of NOx and CO emitted by thermal oxidisers, as described in the Large Volume Organic Chemicals BREF and BAT conclusions (LVOC, 2017). Although the carbonisation process carried out at the installation is not in the scope of the LVOC BREF, the techniques to reduce emissions from a thermal oxidiser are generally applicable to this process. BAT conclusion 13 of the LVOC-BREF requires an appropriate combination of best available techniques to minimise emissions of NOx and CO from thermal oxidiser, including the following:

    - LVOC BAT-c 13 (b) – Choice of support fuel [explained in the BAT conclusion document as: ‘The use of fuel, including support/auxiliary fuel, with a low content of potential pollution-generating compounds (e.g. lower sulphur, ash, nitrogen, mercury, fluorine or chlorine content in the fuel)];

    - LVOC BAT-c 13 (c) – Use of low-NOx burners;

    - LVOC BAT-c 13 (e) – Combustion optimisation [explained in the BAT conclusion document as: ‘Design and operational techniques used to maximise the removal of organic compounds, while minimising emissions to air of CO and NO_x, e.g. by controlling combustion parameters such as temperature and residence time’];

    - LVOC BAT-c 13 (g) – Selective non-catalytic reduction (SNCR) [explained in the BAT conclusion document as: ‘The reduction of NO_x to nitrogen by reaction with ammonia or urea at a high temperature’].

We have taken into account the nature, effects and volume of the emissions concerned and the need to prevent or reduce to a minimum the overall impact and risk to the environment in the assessment and review of the environmental risk discussed in section 2.2.2 ‘Air Emissions Risk Assessment’.

We have taken into account the proposed energy efficiency features for the recuperative thermal oxidiser: the flue gases are used to preheat the air supplied to the combustion process. The design does not generate any solid or liquid wastes.

We have taken into account the features of the proposed design to prevent accidents and to minimise the consequences for the environment. Refer to section 2.4 'Design to prevent and minimise accidents'.

In conclusion, we agree with the operator and we consider that the proposed thermal oxidiser, with the specified energy recovery by mean of a recuperative heat exchanger, is BAT for the abatement of the pollutants arising from the carbonisation process carried out at the installation.

We consider that the proposed use of natural gas as support fuel, the use of low NOx burners and the proposed optimisation of the combustion process to promote the selective non-catalytic reduction of NOx are BAT for prevention and reduction of NOx and CO emissions from this type of application. We note that the design figures stated by the operator for the proposed thermal oxidiser are consistent with published figures in technical reference documents, stating the conditions that are likely to promote efficient reaction of ammonia in the exhaust with the NOx. The technical reference document we have consulted is the LCP BREF (2017), which states that the operating temperature window is maintained between 800 °C and 1100 °C for optimal reaction between ammonia and NOx.

We have therefore accepted the proposal made by the operator for the configuration of the carbonisation process and abatement of exhaust gases by means of a thermal oxidiser.

We have imposed improvement conditions (IC16, IC17 and IC18) to ensure that proposed design concept is further validated, reviewed and optimised, based on actual monitoring data during the commissioning and early stages of operations of the new thermal oxidiser, as proposed by the operator in the application document titled 'Response to further information request – May 2019' (received on 10/05/19).

The new emission points A23, A24 and A25 from manufacturing activities that have the potential to emit particulates, are fitted with bag filters which we consider BAT for this application.

2.2.2 Air Emissions Risk Assessment

The Environment Agency's H1 methodology is typically used to assess the releases from a proposed permitted installation in the context of applicable air quality standards and accepted environmental benchmarks for conservation sites.

The H1 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 H1 guidance 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 PCs calculated are likely to be an overestimate of the actual maximum concentrations. More accurate calculation of PCs can be achieved by mathematical dispersion models.

Once short-term and long-term PCs have been calculated, they are compared with Environmental Standards (ES), for example, Ambient Air Directive limit values (Air Quality Standards), or UK Environmental Assessment Levels (EALs), referred to as "benchmarks" in the H1 Guidance.

PCs are considered insignificant if:

- the long-term PC is less than 1% of the relevant EAL; and
- the short-term PC is less than 10% of the relevant EAL.

We refer to this screening tests as 'Air Impact Screening Stage One'.

For those pollutants which do not screen out as insignificant according to the above tests, we determine whether exceedances of the relevant EAL are likely by considering the PEC (Predicted Environmental Contribution) which takes account the PC calculated based on using dispersion factors and the background

pollutant concentrations. We consider the environmental risk not to be significant (and not requiring further detailed assessment) where the following criteria are met:

- the short-term PC is less than 20% of the short-term EAL minus twice the long-term background concentration ('the headroom')
- the long-term PEC is less than 70% of the long-term EAL

We refer to this screening tests as 'Air Impact Screening Stage Two'.

When the above conditions cannot be verified through the H1 screening methodology, which is based on dispersion factors, our guidance requires that a detailed modelling assessment is carried out using computer software that models the dispersion of a substance as it travels through the atmosphere until it reaches the ground.

However, where an emission cannot be screened out with the H1 dispersion factors and methodology, it does not mean it will necessarily be significant. For those pollutants which do not screen out with the H1 methodology, we assess the environmental risk based on the results of a detailed air dispersion model and we further determine whether exceedances of the relevant EAL 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 an exceedance of an EAL limit value is identified, we may require the applicant to go beyond what would normally be considered BAT for the Installation or we may refuse the application if the applicant is unable to provide suitable proposals. Whether or not exceedances are considered likely, the application is subject to the requirement to operate in accordance with BAT.

The applicant carried out an H1 assessment using the Environment Agency's H1 Risk Assessment tool, version 2.7.8. We have reviewed the H1 assessment submitted by the operator, their selection of input data and the assumptions made to inform the assessment.

The main pollutants emitted by the new thermal oxidiser (emission point A22) will be the same pollutants emitted by the existing emission point A1 that is replaced, namely: oxides of nitrogen, carbon monoxide, residual concentrations of pollutants that are not fully oxidised: hydrogen cyanide, VOCs (class B) and particulates. These pollutants were considered in the risk assessment submitted with the application.

According to the application document 'Response to further information request – May 2019' (received on 10/05/19), the applicant considers that emissions of ammonia from the operations of the new Lesni thermal oxidiser will be negligible because the ammonia produced as a by-product from the carbonising process is expected to act in the same way as if there was to be selective non-catalytic reduction (SNCR) fitted to the system and is therefore consumed within the thermal oxidation process as a reducing agent for the thermally and chemically generated NOx. Since the installation of the new Lesni thermal oxidiser has not been completed, and the equipment has not been commissioned yet, monitoring data providing evidence in support of negligible ammonia emissions was not available at the time of the application. We have therefore imposed an improvement condition (IC18) requiring the operator to confirm that the ammonia slip is negligible as stated in the application documents and that the environmental risk for emissions of this pollutant is insignificant according to the Environment Agency's H1, based on actual monitoring data collected during the commissioning and early months of operations.

The results of the screening tool submitted by the applicant are shown in the following:

Table 1 - H1 Air Impact Screening Stage 1

Air Impact Screening Stage One

Screen out Insignificant Emissions to Air

This page displays the Process Contribution as a proportion of the EAL or EQS. Emissions with PCs that are less than the criteria indicated may be screened from further assessment as they are likely to have an insignificant impact.

Number	Substance	Long Term EAL µg/m3	Short Term EAL µg/m3	Long Term PC µg/m3	Long Term % PC of EAL %	Long Term > 1% of EAL?	Short Term PC µg/m3	Short Term % PC of EAL %	Short Term > 10% of EAL?
1	Particulates (PM10) (	40.0	-	7.47	18.7	**Yes**	197	-	
1	Nitrogen Dioxide	40.0	200	122	306	**Yes**	1,613	807	**Yes**
2	Particulates (PM10) (	-	50.0	-	-		197	394	**Yes**
2	Nitrogen Dioxide (Ec	30.0	75.0	57.1	190	**Yes**	1,613	2,151	**Yes**
3	Carbon monoxide	-	10,000	38.2	-		1,006	10.1	**Yes**
4	Toluene	1,910	8,000	0.465	0.0244	**No**	12.3	0.153	**No**
5	Hydrogen cyanide	-	220	0.233	-		6.12	2.79	**No**

Table 2 - H1 Air Impact Screening Stage 2

Air Impact Modelling Stage Two Screening

Identify need for Detailed Modelling of Emissions to Air

This page displays the Process Contributions in relation to the backgound pollutant levels and the EAL or EQS. You should use this information to decide whether to conduct detailed modelling. Note that releases that are insignificant are not shown as they are screened from further assessment. Also complete this page if you have already done detailed modelling.

Number	Substance	Air Bkgrnd Conc. µg/m3	Long Term PC µg/m3	Long Term % PC of headroom (EAL - Bkgrnd)	Long Term PEC mg/m3	Long Term % PEC of EAL %	Long Term % PEC of EAL >=70?	Short Term PC µg/m3	Short Term % PC of headroom (EAL - Bkgrnd)	Short Term % PC of headroom >=20?
e.g.		12								
1	Particulates (PM10) (Annual Mean)	15.7	7.47	30.8	23.2	58.0	**No**	197	-	
1	Nitrogen Dioxide	18.7	122	575	141	353	**Yes**	1,613	992	**Yes**
2	Particulates (PM10) (24 hr Mean)	15.7	-	-	0	-		197	1,058	**Yes**
2	Nitrogen Dioxide (Ecological - Daily Mean)	18.7	57.1	505	75.8	253	**Yes**	1,613	4,291	**Yes**
3	Carbon monoxide	462	38.2	-	0	-		1,006	11.1	**No**

Hydrogen Cyanide, Volatile Organic Compounds and Carbon Monoxide

The significance of impact from the following pollutants has been screened out at stage one screening test or stage two screening test, according to the screening criteria set in our guidance:

- Impacts from emissions of hydrogen cyanide are insignificant when compared with the environmental assessment level (EAL) for this pollutant, because the process contribution (PC) of this pollutant, calculated with the conservative dispersion factors built in the Environment Agency's H1 Risk Assessment tool, is 2.79% of the short term EAL, below the short term insignificance threshold of 10% of the EAL.
- Impacts from emissions of class B VOC (taken as toluene as a representative chemical for the risk posed by this class of VOC) are insignificant when compared with the environmental assessment level (EAL) for toluene, because the process contributions (PC) of this class of pollutants, calculated with the conservative dispersion factors built in the Environment Agency's H1 Risk Assessment tool, are 0.153% of the short term EAL (below the short term insignificance threshold of 10% of the short-term EAL) and 0.0244% of the long term EAL (below the insignificance of threshold of 1% of the long-tem EAL).
- Impacts from emissions of carbon monoxide are screened out at stage two screening test, when compared with the environmental assessment level (EAL), because the process contributions (PC) of this pollutant, calculated with the conservative dispersion factors built in the Environment Agency's H1 Risk Assessment tool, is 11.1% of the headroom between the EAL and the background concentration, less than the threshold of 20% set by our guidance.

We agree with the conclusions made by the applicant for these pollutants and we consider the risk posed by their emission from the installation is not significant.

Oxides of nitrogen and Particulates

As required by our guidance, the applicant submitted a detailed assessment informed by air dispersion modelling for emissions of oxides of nitrogen and particulates (short term), whose impact did not screen out with the H1 methodology. The applicant's assessment of the impact of air quality is set out in the application document titled 'Air Impact Assessment' (version received on 01/07/19 in response to a Schedule 5 Notice dated 30/05/19). The assessment comprises:

- Dispersion modelling of emissions to air from the operation of the installation for oxides of nitrogen (NO_x), expressed as NO_2 and particulate matter (as PM_{10});
- A study of the impact of emissions on sensitive conservation sites within relevant screening distance.

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the installation and its impact on local air quality. The impact on conservation sites is considered in section 2.2.3.

The applicant assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon local conservation sites and human health. These assessments predict the potential effects on local air quality from the installation's stack emissions using the US EPA AERMOD dispersion model, which is a commonly used computer model for regulatory dispersion modelling. The model used 5 years of meteorological data collected from the weather station at Coventry airport which is approximately 8 Km South South East of the installation between 2012 and 2016. The impacts upon plume dispersion of the terrain and the buildings in proximity of the site were considered in the dispersion modelling submitted by the applicant.

The air impact assessments, and the dispersion modelling upon which they were based, employed the following assumptions:

- The existing emission sources included in the model emit oxides of nitrogen at the concentrations corresponding to the emission limit values currently stated in the permit;
- The new emission source (new Lesni thermal oxidiser, emission point A22) included in the model emits oxides of nitrogen at the concentration of 1,400 mg/m^3 (reference conditions 101.3 kPa and 273 K, 11% oxygen and dry gas), corresponding to the emission limit value proposed by the operator in the application; this figure is consistent with the currently permitted performance of the existing thermal oxidiser that consists of similar technology and was designed by the same manufacturer (refer to section 2.2.1 for further details);
- Emissions of particulates were assumed to consist of PM_{10} fraction at the concentrations corresponding to the emission limit values stated in the permit (for existing emission sources that have a specified emission limit), measured emissions (for existing emission sources that don't have a specified emission limit), manufacturers' emission guarantees (for new proposed emission sources);
- For short term predictions 35% of the nitrogen oxides emissions have been assumed to be converted to NO_2, for long term predictions 70% of the measured emissions have been assumed to be converted to NO_2;
- To simulate the worst case emission scenario all the processes involved in the manufacture of the finished product have been assumed to run continuously and have therefore been modelled as such for assessment against air quality standards. This is a conservative assumption, since only two of the existing boilers are run concurrently to provide the steam for the process, as opposed to four included in the model.

We agree with this approach. The assumptions underpinning the model have been checked and are reasonably precautionary.

The applicant used the values from the DEFRA background mapping system as background concentrations.

The applicant provided us with modelled output showing the concentration of key pollutants at a number of specified locations within the surrounding area.

The way in which the applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed by the Environment Agency Air Quality Modelling Unit (AQMAU) to establish the robustness of the applicant's air impact assessment. The output from the model has then been used to inform the assessment of health impacts and impact on habitats and conservation sites.

Our review of the applicant's assessment leads us to agree with the applicant's conclusions that the air quality impacts due to the variation application are unlikely to be significant.

The following sections show the applicant' modelling results and discuss the impacts on human receptors.

Oxides of nitrogen: Table 3 below shows the modelling predictions of NO_2 at the relevant locations of human receptors, as can be found in the assessment report submitted by the applicant:

Table 3 - Air dispersion modelling prediction for oxides of nitrogen (new configuration after this variation)

Pollutant	EQS / EAL (µg/m³)	Process Contribution (PC) (µg/m³)	PC as % of EQS / EAL	PEC (µg/m³) (Background + PC)	PEC as % of EQS	PC as % of Headroom
NO_2 Annual	40	3.3*	8.25%	22	55.0%	Not applicable
NO_2 99.8%ile hourly mean	200	30.3**	15.2%	67.7	33.9%	18.6%

Notes

* At the nearest residential receptor on Everdon Road (X=433196, Y=282524), relevant receptor for annual long-term exposure;

** At the recreational ground on Whitmore Park that lies just beyond the site boundary (X=433033, Y=282381); this is a relevant receptor for short term exposure to NO_2, because exposure of human receptors at this location is expected to take place with a duration comparable to the hourly average of the short-term EQS.

The impact on air quality from NO_x emissions has been assessed against the EU EQS of 40 µg/m³ as a long term annual average and a short term hourly average of 200 µg/m³. The above table shows that the predicted concentrations are below the significance criteria set in our H1 guidance, as follows:

- Long-term (annual average) PEC of NO_2 due to NOx emitted by the installation, taking into account the background concentrations, is <70% of the long term EQS;
- 99.8%ile short-term (1-hr) PC of NO_2 due to NOx emitted by the installation is <20% of the headroom between the short-term EQS and the short-term background concentration.

Particulates: Table 4 below shows the modelling predictions for particulates at the relevant locations of human receptors, as they can be found in the assessment report submitted by the applicant:

Table 4 - Air dispersion modelling prediction for particulates (new configuration after this variation)

Pollutant	EQS / EAL (µg/m³)	Process Contribution (PC) (µg/m³)	PC as % of EQS / EAL	PEC (µg/m³) (Background + PC)	PEC as % of EQS
PM_{10} Annual	40	0.99*	2.5%	16.7**	41.7%
PM_{10} (90.4%ile of 24-hours)	50	2.5*	5%	Not applicable ***	Not applicable ***

Notes

* At the nearest residential receptor on Everdon Road (X = 433196, Y = 282524), relevant receptor for annual long-term exposure and 24 hours short-term exposure;

** Based on DEFRA data, long term background concentration of 15.7 µg/m³. Short term background concentration is considered twice the long term background concentration.

*** The 90.4%ile short-term (24-hr) PC of PM10 is below the screening threshold of 10% of the short-term EQS set in the H1 screening guidance. In this case the background pollutant levels are not considered within the assessment in accordance with our H1 screening process.

The impact on air quality from particulates emissions has been assessed against the EQS of 40 μg/m³ as a long term annual average and a short term 24-hours average of 50 μg/m³. The above table shows that the predicted concentrations are below the significance criteria set in our H1 guidance, as follows:

- Long-term (annual average) PEC of PM10, due to particulates emitted by the installation, taking into account the background concentrations, is <70% of the long term EQS;
- 90.4%ile short-term (24-hr) PC of PM10 due to particulates emitted by the installation is <10% of the short-term EQS.

Summary of conclusions of the air emissions risk assessment

Based on the results of the H1 Risk Assessment Tool, the applicant has screened out the environmental risk posed by emissions of hydrogen cyanide, class B VOC (as toluene) and carbon monoxide. We agree with the conclusions made by the applicant for these pollutants and we consider the risk posed by their emission from the installation is not significant.

Based on the results of the air dispersion model for NO_2 and PM_{10}, the applicant has concluded that this variation will cause an increase in the localised ground level concentrations of nitrogen dioxide (NO2) and PM_{10}. However, it is unlikely that emissions will threaten the attainment of the long term and short term environmental standards for these parameters. We have audited the air dispersion model submitted by the applicant and we agree with this conclusion.

2.2.3 Impacts on ecological conservation sites of emissions to air

The installation is within the relevant screening distance from the Ensor`s Pool Special Area of Conservation (SAC, UK0012646) which is protected under the Conservation of Habitats and Species Regulations. The conservation site lies at an approximate distance of 8Km from the installation.

Table 5 below shows the ground level concentrations predicted by the applicant's modelling at the Ensor`s Pool SAC.

Table 5 - Impacts of emissions to air to the Ensor's Pool SAC

Pollutant	Critical Level / Critical Load	Back-ground	Process Contribution (PC)	PC as % of Critical Level / Critical Load	Predicted Environmental Concentration (PEC)	PEC as % of Critical Level / Critical Load
Direct Impacts[1]						
NO_x Annual (μg/m³)	30	N/A[2]	0.023	0.1% < 1%	N/A[2]	N/A[2]
NO_x Daily Mean (μg/m³)	75	N/A[2]	0.26	0.35% < 10 %	N/A[2]	N/A[2]
Deposition Impacts[1]						
N Deposition (kg N/ha/yr)	N/A[3]	N/A	N/A	N/A	N/A	N/A
Acidification - Nitrogen Dep (Keq/ha/yr)	N/A[3]	N/A	N/A	N/A	N/A	N/A

Notes:

1. Direct impact units are μg/m³ and deposition impact units are kg N/ha/yr or Keq/ha/yr.

Pollutant	Critical Level / Critical Load	Back-ground	Process Contribution (PC)	PC as % of Critical Level / Critical Load	Predicted Environmental Concentration (PEC)	PEC as % of Critical Level / Critical Load

2. Where emissions screen out as insignificant, the background pollutant levels and PEC are not considered within the assessment in accordance with our H1 screening process.
3. No critical load is specified for the qualifying feature 'freshwater crayfish' within this designated habitat.

Table 5 above shows that the PCs are below the critical levels and can be considered insignificant in that the process contribution is <1% of the long term critical level and <10% of the short term critical level for NO_x annual mean and NOx daily mean, according to the thresholds set in our guidance for European conservation sites.

We are satisfied that this variation will not have a likely significant effect on this European site. The applicant is required to prevent, minimise and control emissions using BAT, this is considered in section 2.2.1.

There are no SSSIs located within 2km of the installation.

Several non-statutory local wildlife sites are located within 2 km of the installation: Table 6 below shows the ground level concentrations predicted by applicant's modelling and the corresponding deposition impacts at the two most impacted non-statutory local ecological receptors (Local Wildlife Site - LWS). These are:

- Greenwood Farm Pastures LWS (approx. distance from the site 1.6 km)
- Foleshill Gasworks and Three Spires Sidings LWS (approx. distance from the site 1.4 km)

Table 6 - Impacts of emissions to air to most affected LWS

Pollutant		Critical Level / Critical Load	Process Contribution (PC)	PC as % of Critical Level / Critical Load
Greenwood Farm Pastures LWS	NO_x Annual (µg/m³)	30	0.26	0.9%
	NO_x Daily Mean (µg/m³)	75	1.48	2.0%
Foleshill Gasworks and Three Spires Sidings LWS	NO_x Annual (µg/m³)	30	0.24	0.8%
	NO_x Daily Mean (µg/m³)	75	1.8	2.4%
Deposition Impacts[1]				
Greenwood Farm Pastures LWS	N Deposition (kg N/ha/yr)	20	0.052	0.3%
	Acidification - Nitrogen Dep (Keq/ha/yr)	CLN_{min} = 0.856 CLN_{max} = 4.856 CLS_{max} = 4	0.00374	0.1%
Foleshill Gasworks and Three Spires Sidings LWS	N Deposition (kg N/ha/yr)	10	0.048	0.5%
	Acidification - Nitrogen Dep (Keq/ha/yr)	CLmin = 0.142 CLmax = 1.206 CLS_{max} = 1.064	0.00345	0.3%

Notes:

1. Direct impact units are µg/m³ and deposition impact units are kg N/ha/yr or Keq/ha/yr.

Table 6 above shows that the PCs are below the critical levels and can be considered insignificant in that the process contribution is <100% of the critical levels and critical loads for NO_x annual mean and NOx daily mean, nitrogen deposition and acidification, according to the thresholds set in our guidance for non-statutory conservation sites. We are satisfied that this variation will not cause significant pollution at the LWS within relevant screening distance.

2.2.4 Emission limits and monitoring requirements

There is not a BAT conclusion document or BREF note that covers the scope of the activities carried out at the installation and therefore there are no BAT associated emission limits for the equipment proposed in this variation. The operator has proposed emission limits for the new Lesni thermal oxidiser (emission point A22), in line with the currently permitted performance of the existing thermal oxidiser that consists of similar technology and was designed by the same manufacturer (refer to section 2.2.1 for further details on design development and determination of BAT). As discussed in sections 2.2.2 and 2.2.3 above, emissions at these limits will not cause significant pollution. Consequently we have accepted the proposed limits and incorporated them into table 3.1 of the permit for the following parameters for emission point A22:

- Nitrogen oxides (as NO_2);
- Hydrogen cyanide;
- Class B VOC (as toluene);
- Carbon monoxide;

- Total particulates.

As proposed by the operator in the application document titled 'Response to further information request – May 2019' (received on 10/05/19), we have imposed improvement conditions (IC16, IC17 and IC18) to ensure that proposed design of the new thermal oxidiser is further reviewed and optimised, based on actual monitoring data during the commissioning and early stages of operations.

We have set monitoring requirements for all the above parameters, plus ammonia from the new emission point A22 and for particulates from new emission points A23, A24 and A25, accepting the proposal made by the operator in the application document for the parameters to be monitored.

We have specified the monitoring frequencies for the above parameters according to BAT determined for comparable processes, according to the requirements of Article 14(6) of IED and our regulatory duties established under this article. In particular, for the new Lesni thermal oxidiser (emission point A22) we have set monitoring frequency, in line with BAT conclusion 2 of the Large Volume Organic Chemicals BREF and BAT conclusions (LVOC, 2017) which includes monitoring of thermal oxidisers.

Even if the carbonisation process carried out at the installation is not in the scope of the LVOC BREF, we consider that the techniques to reduce emissions, including the use of a thermal oxidiser, and the associated monitoring requirements are applicable to this comparable process.

For this reason, we have not accepted the proposal from the applicant to carry out testing of emissions from emission point A22 with a 6-monthly frequency. We consider that such a frequency would not be sufficient to monitor the correct operation of the Lesni thermal oxidiser unless it can be proven that emission levels are sufficiently stable. In making this decision we have also taken into account the distribution and type of receptors in proximity of the installation.

We have therefore specified monthly monitoring frequency for the above referred parameters. We have allowed that the monitoring frequency may be reduced with the written agreement by the Environment Agency, if the emission levels are proven to be sufficiently stable over the first 18 months of commercial operation of the Lesni Thermal Oxidiser (emission point A22) or longer period. We have specified that, where the emission levels were demonstrated to be sufficiently stable, the minimum monitoring frequency, after 18 months of operation, shall not be less than one sampling / test every 6 months in any case, which was the monitoring frequency proposed by the applicant in the first instance.

2.3 Noise impacts

The changes proposed by this variation primarily consist of equipment installed within enclosed buildings that will not cause changes to the noise impacts from the installation. However, from the noise perspective, the variation involves the installation of two new cooling towers outdoors.

Although the two new cooling towers will replace five existing cooling towers, the new equipment will be installed in a different location, therefore potentially changing the noise impacts caused by the installation. For this reason, we requested a quantitative noise impact assessment from the applicant.

The key measures proposed to minimise noise impacts from the new cooling towers, is their specification to utilise low noise design features.

Throughout the impact assessment carried out for the determination of the permit, two different models of low noise cooling towers were considered by the applicant: initially a model consisting of 'low noise fans' emitting an overall sound power level of 101 dBA L_w (from each new cooling tower) was considered. Eventually, taking into account the results of an initial noise impact assessment, a lower noise option was proposed by the applicant, consisting of fans commercially known as 'whisper quiet'. According to the documentation provided in the application, this model is capable of reducing the overall sound power level emitted by each cooling tower to 95 dBA L_w.

We have reviewed the proposal made by the applicant and we consider that proposed option consisting of 'whisper quiet fans' is best available technique for this type of equipment.

The applicant's noise impact assessment was provided in the document titled 'Updated noise impact assessment of new cooling towers', received on 06/01/2020. This document was an update of a previous version received on 12/08/2019, implementing the revised lower noise specification for the proposed cooling towers ('whisper quiet fans' model).

The noise impact assessment identified local noise-sensitive receptors in the proximity of the new cooling towers, new and existing potential sources of noise at the proposed plant and noise attenuation measures. Measurements were taken of the prevailing ambient noise levels to produce a baseline noise survey and an assessment was carried out in accordance with BS4142:2014 to compare the predicted cooling plant rating sound levels with the established background levels. The specific noise levels generated by the cooling towers at the receptors under assessment were predicted by the applicant, using three-dimensional noise modelling software, based on the sound propagation method specified by the ISO Standard 9613-2:1996.

The nearest residential receptor potentially affected by the noise generated by the new cooling towers is located to the north of the installation on Everdon Road. The applicant claimed that, due to site access and security issues, it was not considered feasible or reasonably practical to undertake a baseline sound level survey at this receptor over a period of time sufficient to directly determine representative baseline sound levels. As such, baseline sound levels obtained at a proxy location (9, Sharp Close) were used in lieu of representative sound levels measured directly at the Everdon Road noise receptor. We have reviewed this assumption and we consider it is a conservative approach to assess the noise impacts from the proposed cooling towers, on the basis that baseline sound levels at the Everdon Road noise receptor would likely be higher than measured at the 9 Sharp Close receptor, due to the closer proximity of Everdon Road to the Meggitt Areospace Limited site, which already contributes to the background noise at the Everdon Road noise receptor.

The BS 4142:2014 methodology assesses the impact by subtracting the measured background noise level from the predicted rating level (specific + feature correction). The likely significance of any impacts can be based on the following criteria:

- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on context;
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on context;
- Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

The table below shows how the predicted rating levels compare to the background levels at the receptor near to the installation. Impacts at receptors further away will be lower.

Table 7 - BS 4142 :2014 numerical assessment for the new cooling towers

	Rating level compared to background (dB)	
	Day-time	Night-time
37-53, Everdon Road *	-2	+2
* Background data obtained at 9 Sharp Close, which is considered a conservative representation of the likely background at the location of the receptor under assessment.		

The table above shows that the rating sound level associated with the noise generated by the new proposed cooling towers does not exceed the LA_{90} background sound level during day-time hours, and during night-time hours, the difference between the predicted rating level and the LA_{90} background sound level is +2 dB, below the indicative adverse impact criterion of around +5 dB specified by the BS 4142 standard.

We have audited the applicant's assessment and we agree with the conclusion that adverse or significant adverse impacts are unlikely at nearby receptors and that the noise impact with the lower noise option for the new cooling towers (referred as 'whisper quiet fan') will be acceptable.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site, due to the activities introduced by this variation. We have included the approved Noise Management Plan in table S1.2 of the environmental permit, specifying the operating techniques that the applicant must use to comply with the permit conditions. This document includes details of the specification of the new cooling towers in the 'whisper quiet fan' option.

2.4 Design to prevent and minimise accidents

The documentation submitted by the applicant (Response to Schedule 5 Notice received 12/08/19) confirms that a HAZOP study was undertaken for the proposed LNG storage tank (document titled 'Meggitt LNG Tie-In Project HAZOP Report', dated 25/07/2019) and that additional HAZOP study(-ies) are proposed for the new Lesni thermal oxidiser, new carbonising furnace and cooling towers. The application documents explain that the design of the Lesni thermal oxidiser includes emergency shut-down features: if the thermal oxidiser was to suffer a breakdown or require maintenance, then the carbonising furnaces would be stopped and no emissions to air from the plant would occur until repairs had been carried out and the problem addressed. The main control panel for the plant has audible alarms and flashing lights (automatic) for elevated hydrogen cyanide levels, loss of power and fuel gas supply to the thermal oxidiser.

We consider that use of HAZOP studies, when appropriately followed-up with implementation of the required actions, is an adequate technique to prevent accidents associated with the operations of the installation that may result in accidental environmental impacts.

For the new carbonisation furnace, the new thermal oxidiser and the connection of the existing carbonisation furnace to the new thermal oxidiser, we have set a requirement, as part of pre-operational condition PO1, for the operator to confirm that the planned HAZOP study for this system has been undertaken.

3 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.
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. We consulted the following organisations: - Director of Public Health / Public Health England; - Local Authority – Environmental Health - Food Standards Agency - Health and Safety Executive - Fire & Rescue The comments and our responses are summarised in the consultation section.
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', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits. 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. The following administrative changes to the permit have been made as part of this variation and consolidation of the permit: - The primary activity carried out at the installation ('carbonisation of carbonaceous materials') has been amended to S1.2 A1 (f) to reflect the change of scheduled activity within the Environmental Permitted Regulations; - The description of activities AR2, AR3 and AR4 in Table S1.1 of the permit have been amended to make them more clear, even if these activities are unchanged as a result of this variation.
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. The plan is included in the permit.

Aspect considered	Decision
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 and baseline reporting under the Industrial Emissions Directive.
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. The installation is within the relevant screening distance from the Ensor`s Pool Special Area of Conservation (SAC, UK0012646) which is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). The conservation site lies at an approximate distance of 8Km from the installation. We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. We have not consulted Natural England on the application, but we have submitted to them a record of screening for likely significant effects for information only, as required by the Conservation of Habitats and Species Regulations and our guidance. 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. Refer to key issues section for details on the results and discussion of the results of the risk assessment, including the results of the H1 assessment of emissions to air, air dispersion model and noise impact assessment. An additional emission point to sewer (S4) has been added by this variation; however this emission point will consist of a stream of similar characteristics and flow rate to the existing cooling tower effluent stream discharged to the existing emission point to sewer S2. The application documents confirmed that, as a result of this variation, there are no changes to the overall discharge rate to sewer, consented under the existing trade effluent discharge consent with the sewerage undertaker. We therefore consider that there is no increase of environmental risk and impact associated with discharge point S4. The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment, all emissions may be categorised as environmentally insignificant or non-significant.
Operating techniques	

Aspect considered	Decision
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. Refer to key issues for details on the assessment of operating techniques and BAT. The operating techniques that the applicant must use are specified in table S1.2 of the environmental permit.
Operating techniques for emissions that do not screen out as insignificant	Emissions of nitrogen oxides and particulate matter did not screen out with the H1 Risk Assessment Tool and required assessment with a detailed dispersion model. Even though the impacts from these emissions did not screen out with the H1 methodology, the results of the air dispersion model showed that the predicted concentrations at the relevant receptors are below the significance criteria set out in our technical guidance. Namely: - Long-term (annual average) PEC of NO_2 due to NOx emitted by the installation, taking into account the background concentrations, is <70% of the long term EQS; - 99.8%ile short-term (1-hr) PC of NO_2 due to NOx emitted by the installation is <20% of the headroom between the short-term EQS and the short-term background; - Long-term (annual average) PEC of PM_{10}, due to particulates emitted by the installation, taking into account the background concentrations, is <70% of the long term EQS; - 90.4%ile short-term (24-hr) PC of PM10 due to particulates emitted by the installation is <10% of the short-term EQS. Refer to section 2.2.2 for further details on the air emissions risk assessment. We have assessed whether the proposed techniques are BAT. Refer to the key issues section for our assessment and determination of BAT for the installation. The proposed techniques / emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance documents reviewed and referred in the key issues section and we consider them to represent appropriate techniques for the facility.
Operating techniques for emissions that screen out as insignificant	Emissions of hydrogen cyanide and Class B VOC have been screened out as insignificant with the methodology implemented within the H1 Risk Assessment Tool (air impact screening stage one); emissions of carbon monoxide have been screened out in the air impact screening stage two within the H1 Risk Assessment Tool. Therefore we agree that the applicant's proposed techniques are BAT for the installation. We consider that the emission limits included in the installation permit reflect the BAT for the sector.
Noise management	We have reviewed the noise management plan in accordance with our guidance on noise assessment and control.

Aspect considered	Decision
	We consider that the noise management plan is satisfactory.
Permit conditions	
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit(s).
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions. We have set a pre-operational condition (PO1) aimed at: - Confirming the successful completion of the commissioning activities for the new carbonisation furnace and thermal oxidiser; - Demonstrating that the commissioning tests have shown that the new thermal oxidiser is capable of consistently operating in compliance with the emission limits set in Table S3.1 for emission point A22; - Confirming that the old thermal oxidiser (emission point A1) has been decommissioned and/or will not be used any longer. This pre-operational condition has been set to ensure that the operator demonstrates appropriate management of the environmental risks when transitioning from the current operational configuration, making use of the existing thermal oxidiser (emission point A1), to the new operational configuration permitted by this variation.
Improvement programme	Based on the information on the application, we consider that we need to impose an improvement programme (IC16, IC17 and IC18). The use of an improvement programme has been proposed by the operator in the application documents (document titled 'Response to further information request – May 2019') as a way to demonstrate that the proposed design concept for the new thermal oxidiser and the associated emissions are confirmed, reviewed and further optimised, based on actual monitoring data. We have accepted the proposed use of an improvement programme and imposed improvement conditions accordingly. Refer to the key issues section for further details on improvement conditions.
Emission limits	ELVs have been added for the following substances, based on the environmental risk assessment submitted with the application and audited by us: - Emissions of nitrogen oxides from the new Lesni thermal oxidiser (emission point A22); - Emissions of hydrogen cyanide from the new Lesni thermal oxidiser (emission point A22); - Emissions of Class B VOC from the new Lesni thermal oxidiser (emission point A22); - Emissions of carbon monoxide from the new Lesni thermal oxidiser (emission point A22); - Emissions of total particulates from the new Lesni thermal oxidiser (emission point A22).

Aspect considered	Decision
Monitoring	We have decided that monitoring should be added for the following parameters, using the methods detailed and to the frequencies specified in the permit: - Emissions of nitrogen oxides from the new Lesni thermal oxidiser (emission point A22); - Emissions of hydrogen cyanide from the new Lesni thermal oxidiser (emission point A22); - Emissions of Class B VOC from the new Lesni thermal oxidiser (emission point A22); - Emissions of carbon monoxide from the new Lesni thermal oxidiser (emission point A22); - Emissions of total particulates from the new Lesni thermal oxidiser (emission point A22); - Emissions of ammonia from the new Lesni thermal oxidiser (emission point A22); - Emissions of total particulates from emission points A23, A24 and A25. These monitoring requirements have been imposed in order to monitor the performance of the new thermal oxidiser and particulate abatement equipment. We have specified the monitoring standards in line with our Technical Guidance Note M2 'Monitoring of stack emissions to air'.
Reporting	We have added reporting in the permit for the following parameters: - Emissions of nitrogen oxides from the new Lesni thermal oxidiser (emission point A22); - Emissions of hydrogen cyanide from the new Lesni thermal oxidiser (emission point A22); - Emissions of Class B VOC from the new Lesni thermal oxidiser (emission point A22); - Emissions of carbon monoxide from the new Lesni thermal oxidiser (emission point A22); - Emissions of total particulates from the new Lesni thermal oxidiser (emission point A22); - Emissions of ammonia from the new Lesni thermal oxidiser (emission point A22); - Emissions of total particulates from emission points A23, A24 and A25.
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.
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:

Aspect considered	Decision
	"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

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
Coventry City Council
Brief summary of issues raised
Coventry City Council responded that they had no comments to make on the application.
Summary of actions taken or show how this has been covered
Not applicable

Response received from
Public Health England
Brief summary of issues raised
Public Health England consider that emissions to air have been assessed under appropriate guidance and are considered not to have a significant impact on health. Public Health England also commented on the potential requirement for a quantitative noise impact assessment.
Summary of actions taken or show how this has been covered
Refer to the key issues (section 2.2) for the assessment of significance of emissions to air. A quantitative noise impact assessment was undertaken by the operator and reviewed by us. Refer to key issues (section 2.3).