Determination of an Application for a Variation of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2016

Decision document recording our decision-making process

The Permit Number is: EPR/AP3832WS
The Variation number is: EPR/AP3832WS/V004
The Operator is: Encyclis (Walsall) Limited
The Installation is located at: Walsall Energy Recovery Facility, Fryers Road, Walsall, WS3 2XJ

What this document is about

This is a decision document, which accompanies a Permit Variation.

It explains how we have considered the Operator's Application, and why we have included the specific conditions in the Permit Variation we are issuing to the Operator. It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Operator's proposals.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future. A lot of technical terms and acronyms are inevitable in a document of this nature: we provide a glossary of acronyms near the front of the document, for ease of reference.

Preliminary information and use of terms

We gave the application the reference number EPR/AP3832WS/V004. We refer to the application as "the **Application**" in this document in order to be consistent.

The number of the Variation is EPR/AP3832WS/V004. We refer to the Varied permit as "the **Permit**" in this document.

The Application was duly made on 28/06/2024.

The Operator is Encyclis (Walsall) Limited. We refer to Encyclis (Walsall) Limited as "the **Operator**" in this document.

Encyclis (Walsall) Limited facility is located at Walsall Energy Recovery Facility, Fryers Road, Walsall, West Midlands, WS3 2XJ. We refer to this as "the **Installation**" in this document.

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Glossary of acronyms used in this document

(Please note that this glossary is standard for our decision documents and therefore not all these acronyms are necessarily used in this document.)

AAD	Ambient Air Directive (2008/50/EC)
APC	Air Pollution Control
AQS	Air Quality Strategy
BAT	Best Available Technique(s)
BAT-AEL	BAT Associated Emission Level
BAT C	BAT conclusions
BREF	Best Available Techniques (BAT) Reference Documents for Waste Incineration
CEM	Continuous emissions monitor
CHP	Combined heat and power
CROW	Countryside and rights of way Act 2000
CV	Calorific value
DAA	Directly associated activity – Additional activities necessary to be carried out to allow the principal activity to be carried out
DD	Decision document
EAL	Environmental assessment level
EIAD	Environmental Impact Assessment Directive (85/337/EEC)
ELV	Emission limit value
EMAS	EU Eco Management and Audit Scheme
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No. 1154) as amended
EQS	Environmental Quality Standard
ES	Environmental standard
EWC	European waste catalogue
FGC	Flue gas cleaning
FPP	Fire prevention plan
FSA	Food Standards Agency
GWP	Global Warming Potential
HHRAP	Human Health Risk Assessment Protocol
HPA	Health Protection Agency (now UKHSA – UK Health Security Agency)
HW	Hazardous waste
HWI	Hazardous waste incinerator

IBA	Incinerator Bottom Ash
IED	Industrial Emissions Directive (2010/75/EU)
I-TEF	Toxic Equivalent Factors set out in Annex VI Part 2 of IED
I-TEQ	Toxic Equivalent Quotient calculated using I-TEF
LCV	Lower calorific value – also termed net calorific value
LfD	Landfill Directive (1999/31/EC)
LOI	Loss on Ignition
MBT	Mechanical biological treatment
MSW	Municipal Solid Waste
MWI	Municipal waste incinerator
NOx	Oxides of nitrogen (NO plus NO_2 expressed as NO_2)
OTNOC	Other than normal operating conditions
PAH	Polycyclic aromatic hydrocarbons
PC	Process Contribution
PCB	Polychlorinated biphenyls
PEC	Predicted Environmental Concentration
PHE	Public Health England (now UKHSA – UK Health Security Agency)
POP(s)	Persistent organic pollutant(s)
PPS	Public participation statement
PR	Public register
PXDD	Poly-halogenated di-benzo-p-dioxins
PXB	Poly-halogenated biphenyls
PXDF	Poly-halogenated di-benzo furans
RGN	Regulatory Guidance Note
SAC	Special Area of Conservation
SCR	Selective catalytic reduction
SNCR	Selective non-catalytic reduction
SPA(s)	Special Protection Area(s)
SS	Sewage sludge
SSSI(s)	Site(s) of Special Scientific Interest
SWMA	Specified waste management activity
TDI	Tolerable daily intake
TEF	Toxic Equivalent Factors

TGN	Technical guidance note
TOC	Total Organic Carbon
UN_ECE	United Nations Environmental Commission for Europe
US EPA	United States Environmental Protection Agency
WFD	Waste Framework Directive (2008/98/EC)
WHO	World Health Organisation
WID	Waste Incineration Directive (2000/76/EC) – now superseded by IED

Links to guidance documents

The table below provides links to the key guidance documents referred to in this document. The links were correct at the time of producing this document.

Name of guidance document	**Link**
RGN 6: Determinations involving sites of high public interest	RGN 6
CHP Ready Guidance for Combustion and Energy from Waste Power Plants	CHP ready
Risk assessments for your environmental permit	Risk assessments
Guidance to Applicants on Impact Assessment for Group 3 Metals Stack Releases – version 4".	Metals guide
The Incineration of Waste (EPR 5.01)	EPR 5.01
Waste incineration BREF and BAT conclusions	BREF and BAT C
UKHSA: Municipal waste incinerators emissions: impact on health	UKHSA reports

1 Our decision

We have decided to grant the Permit to the Operator. This will allow it to operate the Installation, subject to the conditions in the Permit.

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the Permit will ensure that a high level of protection is provided for the environment and human health.

This Application is to operate an Installation which is subject principally to the Industrial Emissions Directive (IED).

The changes contained within the Permit, when compared to EPR/AP3832WS/V003 are as follows:

1. Reduction in the number of incineration lines (from two to one) and associated changes to the Installation's layout, including a minor change to the location of the stack.
2. Addition of a carbon filter for the abatement of odours during periods of shutdown/nonavailability.
3. Changes to acid gas abatement technology from dry to semi-dry.
4. Removal of sludges from the list of wastes to be processed at the Facility.
5. Addition of a sewer connection for the discharge of excess effluents.

Point 4 above is not associated with any material change to the site practice and did not require any technical assessment. Our assessment, as laid out below, is therefore focussed on points 1, 2, 3 and 5 above.

All other conditions and requirements contained in EPR/AP3832WS/V003 remain the same and in place.

2 How we reached our decision

2.1 Receipt of Application

The Application was duly made on 28/06/2024. This means we considered it was in the correct form and contained sufficient information for us to begin our determination but not that it necessarily contained all the information we would need to complete that determination: see section 2.3 below.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Application that appears to be confidential in relation to any party.

2.2 Consultation on the Application

We did not consult on this Application due to it being a Normal Variation and we determined that the changes applied for would not significantly affect the risk profile of the site. Initial consultation was carried out under Application EPR/AP3832WS/A001 and subsequent Variation Application EPR/AP3832WS/V002.

2.3 Requests for Further Information

Although we were able to consider the Application duly made, we did in fact need more information in order to determine it and issued an information notice on 12/07/2024. A copy of the information notice, and the Operator's subsequent response, was placed on our public register.

In addition to our information notices, we received additional information during the determination from the Operator on 30/08/2024 and 01/10/2024. We made a copy of this information available to the public in the same way as the response to our information notice.

3 The legal framework

The Permit will be granted under Regulation 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *Installation* and a *waste incineration plant* as described by the IED;
- an *operation* covered by the WFD, and
- subject to aspects of other relevant legislation which also have to be addressed.

We address some of the major legal requirements directly where relevant in the body of this document. Other requirements are covered in section 7 towards the end of this document.

We consider that, in granting the Permit, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

4 The Installation

4.1 Description of the Installation and related issues

4.1.1 The permitted activities

The Installation is subject to the EPR because it carries out an activity listed in Part 1 of Schedule 1 to the EPR:

- Section 5.1 Part A(1)(b) – incineration of non-hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity of 3 tonnes or more per hour.

The IED definition of "waste incineration plants" and "waste co-incineration plants" says that it includes:

> *"all incineration lines or co-incineration lines, waste reception, storage, on-site pre-treatment facilities, waste, fuel and air supply systems, boilers, facilities for the treatment of waste gases, on-site facilities for treatment or storage of residues and waste water, stacks, devices for controlling incineration or co-incineration operations, recording and monitoring incineration or co-incineration conditions."*

Many activities which would normally be categorised as "directly associated activities" (DAA) for EPR purposes, such as air pollution control plant, and the ash storage bunker, are therefore included in the listed activity description.

An Installation may also comprise "directly associated activities", which at this Installation includes the generation of electricity using a steam turbine and a back up electricity generator for emergencies. These activities comprise one Installation, because the incineration plant and the steam turbine are successive steps in an integrated activity.

Together, these listed activities and directly associated activities comprise the Installation.

4.1.2 The Site

The Installation is located within an industrial estate in Walsall at national grid reference SJ 99447 01443. Beyond the boundary of the industrial estate lies a number of surrounding land uses, including industrial properties and residential properties to the north; public open space, residential properties and school grounds to the east; residential properties to the south; and school grounds to the west. There is also 1 protected European site within 10 km, 18 local sites within 2 km and 2 Ancient Woodlands within 2 km.

The Operator submitted a plan which we consider is satisfactory, showing the site of the Installation and its extent. A plan is included in Schedule 7 to the Permit, and the Operator is required to carry on the permitted activities within

the site boundary. No changes to the permitted site boundary have been made as part of this Application.

4.1.3 What the Installation does

The Operator has described the facility as Energy Recovery. Our view is that for the purposes of IED (in particular Chapter IV) and EPR, the Installation is a waste incineration plant because:

Notwithstanding the fact that energy will be recovered from the process; the process is never the less 'incineration' because it is considered that its main purpose is the thermal treatment of waste.

Up to 478,300 tonnes of non-hazardous waste will be accepted at the site per annum. Waste will be checked upon entry to ensure it can be accepted. Waste will then be transferred to the reception hall waste bunker where it will be stored.

In the current Permit waste is fed into one of two combustion chambers utilising a moving grate which agitates the fuel bed to promote a good burnout of the waste and a uniform heat release. The Variation reduces the number of combustion chambers from two to one. The Variation will not result in changes to the total thermal capacity, hourly throughput or annual tonnages of waste permitted to be received at the Installation.

As the Variation reduces the number of combustion chambers from two to one, emissions resulting from the Installation will now be discharged to atmosphere via one stack instead of two as per the current Permit. The stack measures approximately 102 m above ground level. The emissions from the stack will be treated for oxides of nitrogen, acidic gases, particulates, dioxins, furans, dioxin-like PCBs and heavy metals prior to release. The Installation will use a combination of primary process control measures and secondary end of pipe abatement plant and equipment to ensure emissions are minimised and meet required limit values. In the current Permit the control measures include selective non-catalytic reduction (SNCR); activated carbon injection; dry lime injection; and fabric bag filters. The Variation changes the current dry lime injection to a semi-dry system whereby in addition to powdered hydrated lime, water is also injected, separately, into the flue gas treatment reactor. The Variation also incorporates the addition of a carbon filter for the abatement of odours during periods of shutdown/nonavailability.

Combustion gases from the furnace are extracted and fed into the boiler system where steam is generated. The temperature of the generated steam is increased further (superheated) using heat from the flue gas. This superheated steam powers a high-pressure turbine, generating up to 49 MW of electricity. Some heat will be utilised by heat exchangers to preheat the steam condensate. Provision will be made in the design of the steam turbine for the export of heat from the site so that it is Combined Heat and Power Ready (CHP-R). The remaining heat from the steam turbine will be removed from the system through an air-cooled vacuum condenser system.

Steam condensate will be collected from various points in the steam cycle, will undergo treatment and is pre-heated prior to reuse as boiler feed water.

The Installation incorporates a Water Treatment Plant to reduce the mineral content of mains water prior to use in the steam cycle. The Installation will operate closed loop cooling, with the exception of the flue gas cooling and boiler blowdown cooling, to regulate and minimise water used in the system.

A back-up diesel generator is provided at the Installation in order to ensure a safe plant shut down in case of a power failure.

Uncontaminated surface water will pass through oil interceptor(s) prior to storage in a tank before being discharged to the canal. Rainwater may be harvested and used for site cleaning activities. In the current Permit wastewater from cleaning is collected in the wastewater tank prior to being tankered off site for treatment. The Variation incorporates the addition of a sewer connection for times when there are infrequent occurrences of excess process effluents. In these instances, excess effluents will be discharged to foul sewer in accordance with a Trade Effluent Consent instead of being tankered off site for treatment

Emission monitoring will be undertaken using a combination of continuous emissions monitoring systems (CEMS) and periodic extractive stack monitoring. All equipment, sampling and analytical techniques will be accredited under the Environment Agency's Monitoring Certification Scheme (MCERTS) scheme.

The key features of the Installation following the Variation Application can be summarised in the table below.

Waste throughput Tonnes/ Line	478,300 tonnes/annum 478,300 tonnes/annum/line	54.6 tonnes/hour 54.6 tonnes/hour/line
Waste processed	MSW, CW, Wood, MBT res, RDF, Plastic	
Number of lines	1	
Furnace technology	Grate	
Auxiliary Fuel	Gas Oil	
Acid gas abatement	Semi-Dry	Hydrated lime and water
NOx abatement	SNCR	Ammonia
Reagent consumption	Auxiliary Fuel: 550 tonnes/annum Ammonia: 1000 tonnes/annum Lime: 9000 tonnes/annum Activated carbon: 150 tonnes/annum Process water: 72,500 tonnes/annum	
Flue gas recirculation	Yes	
Dioxin abatement	Activated carbon	
Stack	Grid Reference SJ 99373 01344	
	Height, 102.3 m	Diameter, 2.64 m
Flue gas	Flow, 87.7 Nm^3/s	Velocity, 19.7 m/s
	Temperature 150°C	

Electricity generated	49.9 MWe	399,200 MWh
Electricity exported	43.5 MWe	348,000 MWh
Steam conditions	Temperature, 440°C	

5. Key Issues in the Determination

The key issues arising during determination of the Application were emissions to air, sewer and odour and we therefore describe how we determined these issues in greater detail in the body of this document. There were other relevant considerations which have been covered by our determination and these are presented in the Minimising the Installation's environmental impact section in Section 7.

5.1 Emissions to Air

5.1.1 Reduction in the number of incineration lines (from two to one) and associated changes to the Installation's layout, including a minor change to the location of the stack

The air quality, habitats and human health impacts arising from the incinerator have previously been assessed as part of initial determination of EPR/AP3832WS/A001 issued on 22/09/2016 and Variation EPR/AP3832WS/V002 issued on 04/11/2020 and have not been re-visited by this determination. Our reasoning for not re-visiting these conclusions is laid out in Section 7.2.

Emission Limit Values in line with the requirements of the latest Energy from Waste sector BAT conclusions were added to this Permit by EPR/AP3832WS/V003 issued on 09/05/2023.

As part of this Variation the Operator proposes to reduce the number of incineration lines from two to one with associated layout optimisation. The Operator confirmed that as the Installation will consist of a single line, there will only be one emission point for the incineration exhaust gases and the layout has been optimised to suit a single line facility. The design and layout optimisation work resulted in small changes to the location of the stack and the flue gas conditions.

The Operator confirmed that the layout optimisation work carried out by the selected technology supplier has led to a change in the location of the stack, moving it about 12 m to the south compared to the centre point of the two flues in the existing permitted layout. The technology supplier has also provided its heat and mass balances for the Installation, which include revised flue gas conditions at the stack exit (see Section 7.2 for Air Quality Assessment).

5.2 Emissions to Sewer

5.2.1 Addition of a sewer connection for the discharge of excess effluents

As part of the Variation the Operator confirmed that they wish to discharge excess effluent to foul sewer in accordance with a Trade Effluent Consent. Although the process will be 'zero discharge' during normal operations, if excess effluents are generated it will be permitted to dispose of them to sewer rather than arranging for off-site tankering and disposal (see Section 7.3.2 for Emissions to Sewer Assessment).

5.3 Odour

5.3.1 Addition of a carbon filter for the abatement of odours during periods of shutdown/nonavailability

As part of the Variation the Operator confirmed that an odour abatement unit will be installed to prevent odour releases from the Installation during outage periods. Adsorption through a carbon filtration system is the proposed odour abatement technique.

5.3.2 History of odour related risk on site and scope of our determination

In our initial determination of the Permit EPR/AP3832WS/A001 issued on 22/09/2016 and Variation EPR/AP3832WS/V002 issued on 04/11/2020 we were satisfied that the appropriate measures would be in place to prevent or where that is not practicable to minimise odour and to prevent pollution from odour.

The Operator has confirmed that the waste reception area, including the tipping hall and the waste storage bunker, will be maintained under negative pressure, to ensure that no odours are able to escape the building. The negative pressure will be created by drawing process air from the waste reception areas.

The Operator has confirmed that as part of the Variation an odour abatement unit, including adsorption through a carbon filtration system, will be added to treat air from the waste reception area and prevent odour releases from the Installation. The treated air from the carbon filtration system will be released via an odour abatement stack. This stack will be 51 m in height and will extend 3 m above the boiler building roof. An additional emission point for point source emissions to air has been included in the updated site plan.

It is our view that the risk of odour nuisance emanating from the site is not likely to increase as a result of this Variation when using the current site practice as a baseline.

5.3.3 Odour Best Available Technique

Within the relevant BAT conclusions for the Installation, there are odour specific measures that the Operator needs to adhere to in order to be compliant. Specifically, the odour related BAT conclusion (BAT 21) is as follows:

- *Store solid and bulk pasty wastes that are odorous and/or prone to releasing volatile substances in enclosed buildings under controlled subatmospheric pressure and use the extracted air as combustion air for incineration or send it to another suitable abatement system in the case of a risk of explosion.*

- *Store liquid wastes in tanks under appropriate controlled pressure and duct the tank vents to the combustion air feed or to another suitable abatement system.*

- *Control the risk of odour during complete shutdown periods when no incineration capacity is available, e.g. by:*

    - *Sending the vented or extracted air to an alternative abatement system, e.g. a wet scrubber, a fixed adsorption bed.*
    - *Minimising the amount of waste in storage, e.g. by interrupting, reducing or transferring waste deliveries, as part of waste stream management (see BAT 9).*
    - *Storing waste in properly sealed bales.*

In relation paragraph 1 above, the requirement for odorous wastes to be stored in enclosed buildings under subatmospheric pressure, we determine the arrangements on site to be BAT. The Installation's waste reception area, including the tipping hall and the waste storage bunker, will be kept under negative pressure. The updated OMP will detail odour management and control measures applicable to the site.

In relation to the second paragraph of BAT 21, liquid wastes will not be accepted.

In relation to the third paragraph of BAT 21, we consider that due to the Variation of the Permit reducing the number of incineration lines from two to one, that a complete shutdown period could occur. To address this the Operator has confirmed that as part of the Variation an odour abatement unit will be added to treat air from the waste reception area and prevent odour releases from the Installation during periods of shutdown/nonavailability.

The Operator has carried out a BAT assessment for the odour abatement technology selection. The guidance on odour identifies the following techniques for the abatement of odour:

- Adsorption
- dry chemical scrubbing
- wet chemical scrubbing

- biological treatment
- thermal treatment
- odour modification systems
- ozone treatment
- condensation
- open systems
- new systems

The Operator has confirmed that although the guidance considers that, for very odorous air, it is common to use a combination of the above methods, odour from the Installation is not expected to be a significant issue, therefore, the Operator proposes to use a single abatement technique – adsorption through a carbon filtration system.

Adsorption is an appropriate odour abatement technique for gas streams with low concentrations of organic compounds, such as those associated with the Installation.

The use of an adsorption system is considered to be a proven technology for the abatement of odours compared to the alternative odour abatement technologies. We accept that the use of carbon filtration systems represent BAT for the abatement of odours.

5.3.4 Development of the OMP and our decision making

The Operator submitted an OMP (v1.0) with their Application which was Duly Made on 28/06/2024.

This OMP has not been assessed as part of the determination because the odour related design detail is yet to be finalised, therefore we have included a Pre-operation Condition (PO13) for odour in the Permit. The updated OMP will be assessed by the Environment Agency and added to the Permit once all details of the OMP are finalised (see Section 7.3.4).

6. Operation of the Installation – General Issues

6.1 Management

The Operator has stated in the Application that they will implement an Environmental Management System (EMS) that will be certified under ISO14001.

We are satisfied that appropriate management systems and management structures will be in place for this Installation, and that sufficient resources are available to the Operator to ensure compliance with all the Permit conditions.

The approved OMP will form part of the site's Environmental Management System.

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

6.2 Site security

Having considered the information submitted in the Application, we are satisfied that appropriate infrastructure and procedures will be in place to ensure that the site remains secure.

6.3 Accident management

The Operator has not submitted an Accident Management Plan. However, having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that accidents that may cause pollution are prevented but that, if they should occur, their consequences are minimised. An Accident Management Plan will form part of the Environmental Management System.

6.4 Operating techniques

We have specified that the Operator must operate the Installation in accordance with the following documents in addition to those already specified in table S1.2 of the Permit:

Description	Parts Included	Justification
Application EPR/AP3832WS/V004	Application Forms C2 and C3 and all referenced supporting information.	These documents specify the controls in place to minimise and manage emissions.

The details set out above describe the techniques that will be used for the operation of the Installation that have been assessed by us as BAT; they form part of the Permit through Permit condition 2.3.1 and Table S1.2 in the Permit Schedules.

Once received (see PO13) the updated OMP will be added to the accepted operating techniques of the Permit.

6.5 Efficient use of Raw Materials

No changes have been made to the raw material or water use as a result of this Variation.

6.6 Waste

6.6.1 Removal of sludges from the list of wastes to be processed at the Installation

Article 45(1) of the IED requires that the Permit must include a list of all types of waste which may be treated using at least the types of waste set out in the European Waste List established by Decision 2005/532/EC, EC, if possible, and containing information on the quantity of each type of waste, where appropriate.

The Application contains a list of wastes (sludges) coded by the European Waste Catalogue (EWC) number, which the Operator wants to remove from the Permit. Therefore, following the Variation the Installation will no longer accept sludge wastes and we have removed these wastes from Table S2.2 of the Permit.

As a result of this change, the following equipment which was part of the permitted Installation will not be included in the revised design of the Installation:

- Dedicated underground tank for the storage of sludges (previously located beneath the tipping hall).
- Pumping system to transfer the sludges from the storage tank into the waste feed hopper.

As no sludges will be accepted at the Facility, it is proposed that the EWC codes listed below will be removed from the list of permitted waste types:

EWC Code	Description of Waste
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing**
02 02	***Preparation and processing of meat – fish and other foods of animal origin***
02 02 04	sludges from on-site effluent treatment
02 06	***Baking and confectionary industry***
02 06 03	sludges from on-site effluent treatment
19	**Wastes from waste management facilities, off-site waste water treatment**
19 09	***Preparation of water intended for human consumption or water for industrial use***
19 09 02	sludges from water clarification
19 13	***Soil and groundwater remediation***
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
19 13 06	sludges from groundwater remediation other than those mentioned in 19 13 05
19 13 08	aqueous liquid wastes and aqueous concentrates from groundwater remediation other than those mentioned in 19 13 07
20	**other wastes (including mixtures of materials) from mechanical treatment of wastes**
20 03	***other municipal wastes***
20 03 04	septic tank sludge
20 03 06	waste from sewage cleaning

No additional wastes have been added to the Permit as a result of this Variation.

No changes to the limited capacity of the Installation have been applied for or made to the Permit. The site was, and is, permitted to process to 478,300 tonnes of non-hazardous waste per annum.

6.7 Energy efficiency

We have considered the issue of energy efficiency in the following ways:

1. The use of energy within, and generated by, the Installation which are normal aspects of all EPR Permit determinations.

2. The extent to which the Installation meets the requirements of Article 50(5) of the IED, which requires *"the heat generated* during the incineration and co-incineration process is *recovered as far as practicable through the generation of heat, steam or power*".

3. The combustion efficiency and energy utilisation of different design options for the Installation are relevant considerations in the determination of BAT for the Installation, including the Global Warming Potential of the different options.

There are no changes to energy efficiency as a result of this Variation.

The Installation will be designed, constructed and operated using BAT for the incineration of the permitted wastes. We are satisfied that the operating and abatement techniques are BAT for incinerating these types of waste. Our assessment of BAT, in relation to air, water and odour is set out in section 5 and 7. All other BAT requirements remain in place and are not affected by the nature of this Variation.

7 Minimising the Installation's environmental impact

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration; accidents, fugitive emissions to air and water; as well as point source releases to air, discharges to ground or groundwater, global warming potential (GWP) and generation of waste and other environmental impacts. Consideration may also have to be given to the effect of emissions being subsequently deposited onto land (where there are ecological receptors). All these factors are discussed in this and other sections of this document.

For an Installation of this kind, the principal emissions are those to air, although we also consider those to land and water.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of the emissions to air from the Installation on human health and the environment and what measures we are requiring to ensure a high level of protection.

7.1 Assessment Methodology

7.1.1 Application of Environment Agency guidance 'risk assessments for your environmental permit'

A methodology for risk assessment of point source emissions to air, which we use to assess the risk of Applications we receive for Permits, is set out in our guidance 'Air emissions risk assessment for your environmental Permit' and has the following steps:

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

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 – these techniques are expensive but normally lead to a lower prediction of PC.

7.1.2 Use of Air Dispersion Modelling

For incineration Applications, we normally require the Applicant/ Operator to submit a full air dispersion model as part of their Application. Air dispersion modelling enables the process contribution to be predicted at any environmental receptor that might be impacted by the plant.

Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Standards (ES) for air emissions. ES are described in our web guide 'Air emissions risk assessment for your environmental Permit'.

Our web guide sets out the relevant ES as:

- Air Quality Standards Regulations 2010 Limit Values
- Air Quality Standards Regulations 2010 Target Values
- UK Air Quality Strategy Objectives
- Environmental Assessment Levels

Where a Limit Value exists, the relevant standard is the Limit Value. Where a Limit Value does not exist, target values, UK Air Quality Strategy (AQS) Objectives or Environmental Assessment Levels (EALs) are used. Our web guide sets out EALs which have been derived to provide a similar level of protection to human health and the environment as the limit values, target values and AQS objectives. In a very small number of cases, e.g. for emissions of lead, the AQS objective is more stringent that the Limit Value. In such cases, we use the AQS objective for our assessment.

Target values, AQS objectives and EALs do not have the same legal status as Limit Values, and there is no explicit requirement to impose stricter conditions than BAT in order to comply with them. However, they are a standard for harm and any significant contribution to a breach is likely to be unacceptable.

PCs are screened out as **Insignificant** if:

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

The **long term** 1% PC insignificance threshold is based on the judgements that:

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

The **short term** 10% PC insignificance threshold is based on the judgements that:

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

Where an emission is screened out in this way, we would normally consider the Applicant's/ Operator's proposals for the prevention and control of the emission to be BAT. That is because if the impact of the emission is already insignificant, it follows that any further reduction in this emission will also be insignificant.

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 exceedences of the relevant ES are likely. This is done through detailed audit and review of the Applicant's/ Operator's air dispersion modelling taking background concentrations and modelling uncertainties into account. Where an exceedance of an AAD limit value is identified, we may require the Applicant/ Operator to go beyond what would normally be considered BAT for the Installation or we may refuse the Application if the Applicant/ Operator is unable to provide suitable proposals. Whether or not exceedences are considered likely, the Application is subject to the requirement to operate in accordance with BAT.

This is not the end of the risk assessment, because we also take into account local factors (for example, particularly sensitive receptors nearby such as a SSSIs, SACs or SPAs). These additional factors may also lead us to include more stringent conditions than BAT.

If, as a result of reviewing the risk assessment and taking account of any additional techniques that could be applied to limit emissions, we consider that emissions **would cause significant pollution**, we would refuse the Application.

7.2 Assessment of Impact on Air Quality

The Operator's assessment of the impact of air quality is set out in the document: Walsall Energy Recovery Facility, EP Variation – Supporting Information, dated: 24/10/2023, reference: S3666-0150-0001RO, revision: 0 of the Application.

7.2.1 Operator's Assessment of Potential Impact on Air Quality

The Operator carried out a comparison between the stack and flue gas data for the existing Permit and the revised design for the Variation to determine whether it was necessary to update the air dispersion modelling for the Installation.

The table below presents the data for the revised design against the data used for the existing Permit.

Item	Unit	Previous Permit (both lines combined)	Revised Design
Stack Data			
Stack height above ground level	m	102.3	102.3
Internal diameter – effective diameter	m	2.59	2.64
Location	m, m	399362, 301347	399373, 301344
Flue gas conditions at the stack exit (100% MCR)			
Temperature	°C	140	150
Exit moisture content	% v/v	18.30	19.0
Exit oxygen content	% v/v dry	6.06	5.50
Reference oxygen content	% v/v dry	11	11
Volume at reference conditions (dry, ref O2)	Nm^3/s	85.72	87.70
Volume at actual conditions	Am^3/s	106.0	108.0
Flue gas exit velocity	m/s	20.00	19.70

The Operator confirmed that although the previous design included two lines, the two flues were combined into a single release point in the model, which was appropriate as the stacks were sufficiently close to one another to be considered a single source point.

The Operator confirmed that all parameters are very similar between the revised design and the existing Permit. The flue gas volume at reference conditions is approximately 2.3% higher, which would result in a corresponding slight increase in pollutant release rate. However, the velocity is almost identical, and the temperature is slightly higher. The higher temperature would aid dispersion and would offset the slight increase in pollutant release rate. The design is otherwise very similar, with the stack location changed by less than 12 m and the building heights unchanged.

The Operator concludes from the review that changes to the predicted ground-level concentrations of pollutants emitted by the Installation would be imperceptible; therefore, a rerun of the dispersion modelling for the revised design is not required (see also Section 5.1).

7.2.2 Environment Agency review of Operator assessment of potential impact on air quality

We completed our checks on the proposed changes relating to air quality and the supporting information document (Walsall Energy Recovery Facility, EP Variation – Supporting Information, dated: 24/10/2023, reference: S3666-0150-0001RO, revision: 0) for the Permit Variation EPR/AP3832WS/V004.

These are:

- The removal of two stacks with a common shield that are in the current Permit and the addition of one stack with a larger diameter.
- The change in location of the new stack by approximately 12 m.
- The changes in the source and emission parameters for the new stack, compared to the original design.

Our assumptions and findings:

- We have assumed that the information informing the Air Quality Assessments in the previous Variation Application (EPR/AP3832WS/V002) is still applicable to this assessment, except for the stack location and the source terms presented in Table 1 of section 2.1.1 of their supporting document.
- We have considered the insignificance criteria in our analysis because such criteria represent minor concentration contributions relative to existing levels.
- We find that the degree of change in PCs is likely to be 'insignificant' (i.e. less than 1% and 10%) against the long-term (LT) and short-term (ST) environmental standards (ES) and likely to be within modelling uncertainties. Therefore, the changes in PCs from this Variation are likely to be negligible against the ES.

We therefore agree with the consultant's conclusions that changes to the predicted ground-level concentrations of pollutants emitted by the Installation would be imperceptible; therefore, a rerun of the dispersion modelling for the revised design is not required (see also Section 5.1).

7.2.3 Changes to acid gas abatement technology from dry to semi-dry

The existing permitted Installation's acid gas abatement is based on a 'dry' system, where powdered hydrated lime is injected into the flue gas stream upstream of the fabric filter.

As part of the Variation the Operator confirmed that they intend to use a 'semi-dry' system where, in addition to powdered hydrated lime, water is separately injected into the flue gas treatment reactor.

In addition to regulating the temperature, the water reactivates the recirculated bag filter residues, optimising the separation efficiency of the process. The water is evaporated meaning that no wastewater is produced and only a dry residue is generated.

This change has already been notified to the EA as part of the response to the regulation 61 notice in February 2023.

Both dry and semi-dry methods rely on the dosing of powdered materials into the exhaust gas stream. Semi-dry systems (i.e. hydrated reagent) offer reduced material consumption through faster reaction rates, but reagent recycling in dry systems can offset this.

In both dry and semi-dry systems, the injected powdered reagent reacts with the acid gases and is removed from the gas stream by the bag filter system. The powdered material (lime) is effective at reducing acid gases, and dosing rates can be controlled from continuously monitoring acid gas emissions.

We are satisfied that this meets the requirements of BAT 27 and 28.

7.3 Other Emissions to the Environment

7.3.1 Emissions to water

There is no change in the proposed management of surface water. Surface water from the yard areas will pass through oil interceptors and then collected in a tank before being discharged to the canal. Rainwater may be harvested and used for site cleaning activities.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise emissions to water.

7.3.2 Emissions to sewer

As part of the Variation the Operator confirmed that they wish to discharge excess effluent to foul sewer in accordance with a Trade Effluent Consent. Although the process will be 'zero discharge' during normal operations, if excess effluents are generated it will be possible to dispose them to sewer rather than arranging for off-site tinkering and disposal (see also Section 5.2).

Effluent sources

The Operator confirms that the Installation will give rise to a number of process effluents which will be re-used within the ash quench system, as follows:

- Boiler blowdown.
- Overflow from the process water tank.
- Rainwater/run-off from building roofs.
- Floor drains from ash handling/loading areas and washdown waters (via the Settling Basin).
- Reject effluent from the boiler feedwater treatment plant.

- Sampling station – this is equivalent to boiler blowdown.

The Operator confirms that wastewater from the process and buildings is collected in a series of tanks (for process waters) and in the settling basin for run-off from the bottom ash vehicle loading areas. Bottom ash is stored within a bunker so any run-off will be limited to that from spilled bottom ash within the vehicle loading areas (not bottom ash storage) and any washdown waters from within the process halls. Therefore, it is unlikely that there will be significant mass of sediments and soluble pollutants within the wastewaters which collect in the Settling Basin.

Under normal operation all wastewater is re-used within the ash quench, with the plant being a net consumer of water.

Where wastewaters collected are to be discharged from site, they will be monitored, and pH corrected (via acid or alkali dosing) as required to ensure that they are within the required limits of the trade effluent consent (pH 6-10). The pH required means that some soluble contaminants within the settling basin, such as metals, are more likely to have precipitated out of solution and accumulate alongside any insoluble contaminants, such as suspended solids.

Periodically, the settling basin will be emptied to remove any sludges/deposits which accumulate. The sludges/deposits will be transferred off-site to a suitably licenced waste management facility.

Discharge Scenarios

The Operator confirms that during certain periods of maintenance, it will be necessary to drain down the water and steam systems. It will be necessary to enable the water to cool as well as 'correcting' the pH (if required) prior to discharge to sewer. The boiler water will be discharged into the settling basin, with the surface drainage and washdown waters and stored to enable it to cool before it can be discharged to sewer in a controlled manner.

The treated effluent from the settling basin is subsequently discharged into the public Severn Trent Water Foul Sewer, discharging to Severn Trent Water Barnhurst Management Centre and ultimately the Shropshire Union Canal and Staffordshire and Worcestershire Canal.

The Operator has used our H1 screening approach in order to screen out the proposed sewerage discharges from further assessment on any potential impacts on the receiving water course, we agree with this conclusion.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise emissions to sewer (see also Section 5.2).

7.3.3 Fugitive emissions

The IED specifies that plants must be able to demonstrate that the plant is designed in such a way as to prevent the unauthorised and accidental release of polluting substances into soil, surface water and groundwater. In addition, storage requirements for waste and for contaminated water under Article 46(5) of the IED must be arranged.

We consider that there is not an increase in risk of fugitive emissions as a result of the proposals made by the Operator, therefore, based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise fugitive emissions.

7.3.4 Odour

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 odour and to prevent pollution from odour.

Waste accepted at the Installation will be delivered in covered vehicles or within containers and bulk storage of waste will only occur in the Installation's waste bunker. A roller shutter door will be used to close the entrance to the tipping hall outside of the waste delivery periods and combustion air will be drawn from above the waste storage bunker in order to prevent odours and airborne particulates from leaving the facility building.

During shut-down the Operator has confirmed that as part of the Variation an odour abatement unit in the form of adsorption through a carbon filtration system will be added to treat air from the waste reception area and prevent odour releases from the Installation during periods of shutdown/nonavailability.

Although the Operator submitted an OMP with the Application, this has not been assessed as part of the determination because the odour related design detail is yet to be finalised, therefore we have included a Pre-operation Condition (PO13) for odour in the Permit. The updated OMP will need to be assessed and added to the Permit once all details of the OMP are finalised (see also Section 5.3).

7.3.5 Noise and vibration

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.

We determine that the noise risk profile of the site as a result of this Variation is not likely to change when using current site practices as a baseline.

7.4 Habitats Assessment

We have checked the location of the Application to assess if it is within the screening distances, we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The Application is within our screening distances for these designations.

We have assessed the Variation aspects of the Application and their 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 Variation aspects of the Application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

Reason: We find that the degree of change in PCs for air quality is likely to be 'insignificant' (i.e. less than 1% and 10%) against the long-term (LT) and short-term (ST) environmental standards (ES) and likely to be within modelling uncertainties. Therefore, the changes in PCs from this Variation are likely to be negligible against the ES. We therefore agree that changes to the predicted ground-level concentrations of pollutants as a result of the Variation emitted by the Installation would be imperceptible and therefore there would be no increase in risk to any sites of nature conservation, landscape, heritage and protected species and habitat designations.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

7.5 Setting ELVs and other Permit conditions

7.5.1 Translating BAT into Permit conditions

Article 14(3) of the IED states that BAT-C shall be the reference for Permit conditions. Article 15(3) further requires that under normal operating conditions; emissions do not exceed the emission levels associated with the BAT as laid down in the decisions on BAT-C.

BAT-C for waste incineration or co-incineration were published on 03/12/2019.

The use of BAT AELs and IED Chapter IV emission limits for air dispersion modelling sets the worst-case scenario. If this shows emissions are insignificant then we have accepted that the Operator's proposals are BAT, and that there is no justification to reduce ELVs below the BAT AELs and Chapter IV limits.

Below we consider whether, for those emissions not screened out as insignificant, different conditions are required as a result of consideration of local or other factors, so that no significant pollution is caused (Article 11(c)) or to comply with environmental quality standards (EQS) (Article 18).

(i) Local factors

We have considered the following information: location and proximity to nearby residents and wildlife habitats, the air quality and habitats assessments, human health risk assessment, proposed design and air pollution control systems and we are satisfied that for the incineration plant there is no justification to reduce ELVs below those established by IED and the BATc.

(ii) National and European ESs

We are satisfied that the limits imposed under the IED and the BATc are appropriate for the Installation with no further changes.

(iii) Global Warming

CO_2 is an inevitable product of the combustion of waste. The amount of CO_2 emitted will be essentially determined by the quantity and characteristics of waste being incinerated, which are already subject to conditions in the Permit. It is therefore inappropriate to set an ELV for CO_2, which could do no more than recognise what is going to be emitted. The gas is not therefore targeted as a key pollutant under Annex II of the IED, which lists the main polluting substances that are to be considered when setting ELVs in Permits.

We have therefore considered setting equivalent parameters or technical measures for CO_2. However, provided energy is recovered efficiently there are no additional equivalent technical measures (beyond those relating to the quantity and characteristics of the waste) that can be imposed that do not run counter to the primary purpose of the plant, which is the recovery of energy from waste. Controls in the form of restrictions on the volume and type of waste that can be accepted at the Installation and Permit conditions relating to energy efficiency effectively apply equivalent technical measures to limit CO_2 emissions.

(iv) Commissioning

There is a pre-operational condition in the Permit relating to commissioning. This will be retained following this Variation.

7.5.2 Emission limits: Air Quality and Human Health

No emission limits have been added, amended or deleted as a result of this Variation.

The air quality, habitats and human health impacts arising from the incinerator have previously been assessed as part of initial determination of EPR/AP3832WS/A001 issued on 22/09/2016 and Variation EPR/AP3832WS/V002 issued on 04/11/2020 and have not been re-visited by this determination.

Emission Limit Values in line with the requirements of the latest Energy from Waste sector BAT conclusions were added to this Permit by EPR/AP3832WS/V003 issued on 09/05/2023.

7.5.3 Emission limits: Water Quality

No emission limits have been added, amended or deleted as a result of this Variation.

7.6 Monitoring

7.6.1 Emissions to air

7.6.2 Monitoring during normal operations

There is no change to the monitoring required during normal operations as a result of this Variation.

7.6.3 Monitoring under abnormal operations arising from the failure of the Installed CEMs

There is no change to the monitoring requirements or measures to be taken under abnormal operations arising from the failure of the CEMS.

7.6.4 Continuous emissions monitoring for dioxins and heavy metals

There is no change to the monitoring required for dioxins and heavy metals as a result of this Variation.

7.6.5 Emissions to Water and Sewer

There is no change to the monitoring required for emissions to water and sewer as a result of this Variation.

7.7 Reporting

No changes to the reporting requirements previously placed on the site have been made as a result of this Variation.

8 Other legal requirements

In this section we explain how we have addressed other legal requirements, to the extent that they are relevant to the limited nature of the Variation, and we have not addressed them elsewhere in this document.

8.1 The EPR 2016 and related Directives

The EPR delivers the requirements of a number of European and national laws.

8.1.1 Schedules 1 and 7 to the EPR 2016 – **IED Directive**

We address the requirements of the IED in the body of this document above and the specific requirements of Chapter IV in Annex 1 of this document.

There is one requirement not addressed above, which is that contained in Article 5(3) IED. Article 5(3) requires that "In the case of a new Installation or a substantial change where Article 4 of Directive 85/337/EC (now Directive 2011/92/EU) (the EIA Directive) applies, any relevant information obtained or conclusion arrived at pursuant to articles 5, 6 and 7 of that Directive shall be examined and used for the purposes of granting the Permit."

- Article 5 of EIA Directive relates to the obligation on developers to supply the information set out in Annex IV of the Directive when making an Application for development consent.
- Article 6(1) requires Member States to ensure that the authorities likely to be concerned by a development by reason of their specific environmental responsibilities are consulted on the Environmental Statement and the request for development consent.
- Article 6(2)-6(6) makes provision for public consultation on Applications for development consent.
- Article 7 relates to projects with transboundary effects and consequential obligations to consult with affected Member States.

The grant or refusal of development consent is a matter for the relevant local planning authority. The Environment Agency's obligation is therefore to examine and use any relevant information obtained or conclusion arrived at by the local planning authorities pursuant to those EIA Directive articles.

The Environment Agency has also carried out its own consultation on the Environmental Permitting Application which includes the Environmental Statement submitted to the local planning authority. The results of our consultation are described elsewhere in this decision document.

8.1.2 Schedule 9 to the EPR 2016 – **Waste Framework Directive**

As the Installation involves the treatment of waste, it is carrying out a *waste operation* for the purposes of the EPR 2016, and the requirements of Schedule 9 therefore apply. This means that we must exercise our functions so as to ensure implementation of certain articles of the WFD.

We must exercise our relevant functions for the purposes of ensuring that the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste and that any waste generated is treated in accordance with Article 4 of the Waste Framework Directive. (See also section 4.3.9)

The conditions of the Permit ensure that waste generation from the facility is minimised. Where the production of waste cannot be prevented it will be

recovered wherever possible or otherwise disposed of in a manner that minimises its impact on the environment. This is in accordance with Article 4.

We must also exercise our relevant functions for the purposes of implementing Article 13 of the Waste Framework Directive; ensuring that the requirements in the second paragraph of Article 23(1) of the Waste Framework Directive are met; and ensuring compliance with Articles 18(2)(b), 18(2)(c), 23(3), 23(4) and 35(1) of the Waste Framework Directive.

Article 13 relates to the protection of human health and the environment. These objectives are addressed elsewhere in this document.

Article 23(1) requires the Permit to specify:

(a) the types and quantities of waste that may be treated;
(b) for each type of operation permitted, the technical and any other requirements relevant to the site concerned;
(c) the safety and precautionary measures to be taken;
(d) the method to be used for each type of operation;
(e) such monitoring and control operations as may be necessary;
(f) such closure and after-care provisions as may be necessary.

These are all covered by Permit conditions.

The Permit does not allow the mixing of hazardous waste so Article 18(2) is not relevant.

We consider that the intended method of waste treatment is acceptable from the point of view of environmental protection so Article 23(3) does not apply.

Energy efficiency is dealt with elsewhere in this document but we consider the conditions of the Permit ensure that the recovery of energy take place with a high level of energy efficiency in accordance with Article 23(4).

Article 35(1) relates to record keeping and its requirements are delivered through Permit conditions.

8.1.3 Schedule 22 to the EPR 2016 – **Water Framework and Groundwater Directives**

To the extent that it might lead to a discharge of pollutants to groundwater (a "groundwater activity" under the EPR 2016), the Permit is subject to the requirements of Schedule 22, which delivers the requirements of EU Directives relating to pollution of groundwater. The Permit will require the taking of all necessary measures to prevent the input of any hazardous substances to groundwater, and to limit the input of non-hazardous pollutants into groundwater so as to ensure such pollutants do not cause pollution, and satisfies the requirements of Schedule 22.

No releases to groundwater from the Installation are permitted. The Permit also requires material storage areas to be designed and maintained to a high standard to prevent accidental releases.

8.1.4 Directive 2003/35/EC – **The Public Participation Directive**

Regulation 60 of the EPR 2016 requires the Environment Agency to prepare and publish a statement of its policies for complying with its public participation duties. We have published our public participation statement.

This Application is not being consulted upon as it is a Normal Variation.

8.2 National primary legislation

8.2.1 Environment Act 1995

(i) Section 4 (Pursuit of Sustainable Development)

We are required to contribute towards achieving sustainable development, as considered appropriate by Ministers and set out in guidance issued to us. The Secretary of State for Environment, Food and Rural Affairs has issued *The Environment Agency's Objectives and Contribution to Sustainable Development: Statutory Guidance (December 2002)*. This document:

> "*provides guidance to the Agency on such matters as the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and the allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency*".

In respect of regulation of industrial pollution through the EPR, the Guidance refers in particular to the objective of setting Permit conditions "*in a consistent and proportionate fashion based on Best Available Techniques and taking into account all relevant matters…*". The Environment Agency considers that it has pursued the objectives set out in the Government's guidance, where relevant, and that there are no additional conditions that should be included in this Permit to take account of the Section 4 duty.

For waste the guidance refers to ensuring waste is recovered or disposed of in ways which protect the environment and human health. The Environment Agency considers that it has pursued the objectives set out in the Government's guidance, where relevant, and that there are no additional conditions that should be included in this Permit to take account of the Section 4 duty.

(ii) Section 5 (Preventing or Minimising Effects of Pollution of the Environment)

We are satisfied that our pollution control powers have been exercised for the purpose of preventing or minimising, remedying or mitigating the effects of pollution.

(iii) Section 6(1) (Conservation Duties with Regard to Water)

We have a duty to the extent we consider it desirable generally to promote the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and the land associated with such waters, and the conservation of flora and fauna which are dependent on an aquatic environment.

We consider that no additional or different conditions are appropriate for this Permit.

(iv) Section 6(6) (Fisheries)

We have a duty to maintain, improve and develop fisheries of salmon, trout, eels, lampreys, smelt and freshwater fish.

We consider that no additional or different conditions are appropriate for this Permit.

(v) Section 7 (General Environmental Duties)

This places a duty on us, when considering any proposal relating to our functions, to have regard amongst other things to any effect which the proposals would have on sites of archaeological, architectural, or historic interest; the economic and social well-being of local communities in rural areas; and to take into account any effect which the proposals would have on the beauty or amenity of any rural or urban area or on any such flora, fauna, features, buildings, sites or objects.

We considered whether we should impose any additional or different requirements in terms of our duty to have regard to the various conservation objectives set out in Section 7 but concluded that we should not.

(vi) Section 39 (Costs and Benefits)

We have a duty to take into account the likely costs and benefits of our decisions on the Applications ('costs' being defined as including costs to the environment as well as any person). This duty, however, does not affect our obligation to discharge any duties imposed upon us in other legislative provisions.

In so far as relevant we consider that the costs that the Permit may impose on the Operator are reasonable and proportionate in terms of the benefits it provides.

(vii) Section 81 (National Air Quality Strategy)

We have had regard to the National Air Quality Strategy and consider that our decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

We have also had regard to the clean air strategy 2019 and consider that our decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

We have had regard to the National Air Pollution Control Programme (set under the National Emissions Ceiling Regulations 2018) and consider that our decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

8.2.2 **Section 108 Deregulation Act 2015 – Growth duty**

We 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 statutory guidance issued by the Department of Business, Energy and Industrial Strategy in March 2017 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 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. It also ensures that any pollution that may arise from the regulated facility does not adversely affect local businesses.

8.2.3 **Legislative and Regulatory Reform Act 2006**

In accordance with section 21 of this Act, when making this decision we have had regard to the need to be transparent, accountable, proportionate and consistent, and the need to target action where it is needed.

In accordance with section 22 of the Act we have had regard to the Regulators' Code; in particular the need to base our decision on environmental risk, and to support the Operator to comply and grow, so that burdens have only been imposed where they are necessary and proportionate.

8.2.4 **Human Rights Act 1998**

We have considered potential interference with rights addressed by the European Convention on Human Rights in reaching our decision and consider that our decision is compatible with our duties under the Human Rights Act 1998. In particular, we have considered the right to life (Article 2), the right to a fair trial (Article 6), the right to respect for private and family life (Article 8) and the right to protection of property (Article 1, First Protocol). We do not believe that Convention rights are engaged in relation to this determination.

8.2.5 **Countryside and Rights of Way Act 2000 (CROW 2000)**

Section 85 of this Act imposes a duty on Environment Agency to have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty (AONB). There is no AONB which could be affected by the Installation.

8.2.6 **Wildlife and Countryside Act 1981**

Under section 28G of the Wildlife and Countryside Act 1981 the Environment Agency has a duty to take reasonable steps to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which a site is of special scientific interest. Under section 28I the Environment Agency has a duty to consult Natural England in relation to any Permit that is likely to damage SSSIs. There is no SSSI site which could be affected by the Installation.

8.2.7 **Natural Environment and Rural Communities Act 2006**

Section 40 of the Natural Environment and Rural Communities Act 2006 has been amended with effect from 1 January 2023 to require consideration as to what action we can properly take, consistently with the proper exercise of our functions, to further the general biodiversity objective, which is to further the conservation and enhancement of biodiversity and having considered, determined such policies and specific objectives as we consider appropriate for taking action to further the general biodiversity objective, and take such action as we consider appropriate, in the light of those policies and objectives, to further that objective.

Section 40(2A) states that in complying with the duty in section 40(1) and (1A) we must have particular regard to any relevant local nature recovery strategy and species protection strategy or protected sites strategy

We have, also, considered the general biodiversity objective when carrying out our Permit Application determination and, consider that no different or additional conditions are required in the Permit.

8.2.8 **Countryside Act 1968**

Section 11 imposes a duty on the Environment Agency to exercise its functions relating to any land, having regard to the desirability of conserving the natural beauty and amenity of the countryside including wildlife. We have done so and consider that no different or additional conditions in the Permit are required.

8.2.9 **National Parks and Access to the Countryside Act 1949**

Section 11A and section 5(1) imposes a duty on the Environment Agency when exercising its functions in relation to land in a National Park, to have regard to the purposes of conserving and enhancing the natural beauty, wildlife and cultural heritage of the areas, and of promoting opportunities for the understanding and enjoyment of National Parks by the public.

We have done so and consider that no different or additional conditions in the Permit are required. There is no National Park which could be affected by the Installation.

8.2.10 **Environment Act 2021**

Section 110(10) requires that we must have regard to a protected sites strategy, which Natural England has prepared and published in relation to improving the conservation and management of a protected site, and managing the impact of plans, projects or other activities (wherever undertaken) on the conservation and management of the protected site, where relevant to exercise of our duties under Conservation of Habitats and Species Regulations 2017, sections 28G to 28I Wildlife and Countryside Act 1981 or Marine and Coastal Access Act 2009.

We have had regard to this in our assessments.

8.3 National secondary legislation

8.3.1 **Conservation of Habitats and Species Regulations 2017**

We have assessed the Application in accordance with our guidance and concluded that there will be no change to the likely significant effects on any European Site as part of this Variation.
We have also considered our general duties under Regulation 9(3) to have regard to the requirements of the Habitats Directive in the exercise of our powers and under Regulation 10 in relation to wild bird habitat to take such steps in the exercise of their functions as they consider appropriate so far as lies within our powers to secure preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds.

We considered whether we should impose any additional or different requirements in the Permit in terms of these duties but concluded that we should not.

8.3.2 **Water Environment (Water Framework Directive) Regulations 2017**

Consideration has been given to whether any additional requirements should be imposed in terms of the Environment Agency's duty under regulation 3 to secure compliance with the requirements of the Water Framework Directive, Groundwater Directive and the EQS Directive through, amongst other things, environmental Permits, and its obligation in regulation 33 to have regard to the river basin management plan (RBMP) approved under regulation 31 and any supplementary plans prepared under regulation 32. However, it is felt that existing conditions are sufficient in this regard and no other appropriate requirements have been identified.

We are satisfied that granting this Application with the conditions proposed would not cause the current status of the water body to deteriorate, and that it will not compromise the ability of this water body to achieve 'good surface water chemical status and good ecological potential'.

In taking this decision we have applied the physico-chemical standards, environmental quality standards and biological element status boundary values for surface water bodies specified in Articles 8-10 of, and Schedule 3 to, the Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.

8.3.3 **The Persistent Organic Pollutants Regulations 2007**

We have explained our approach to these Regulations, which give effect to the Stockholm Convention on POPs and the EU's POPs Regulation, above.

8.3.4 **Bathing Water Regulations 2013**

We have considered our duty, under regulation 5 of these Regulations, to exercise our relevant functions to ensure compliance with the Bathing Water Directive, and in particular to take realistic and proportionate measures with a view to increasing the number of bathing waters classified as "good" or "excellent".

We consider that no additional or different conditions are appropriate for this Permit.

8.4 Other relevant legal requirements

8.4.1 Duty to Involve

Section 23 of the Local Democracy, Economic Development and Construction Act 2009 require us where we consider it appropriate to take such steps as we consider appropriate to secure the involvement of interested persons in the exercise of our functions by providing them with information, consulting them

or involving them in any other way. Section 24 requires us to have regard to any Secretary of State guidance as to how we should do that.

As this is an Application for a Normal Variation, consultation was not required.

Annexes

Annex 1A: Application of chapter IV of the Industrial Emissions Directive

Where specific IED articles have not been affected by the scope of this Variation, they have not been added to the table below.

IED Article	Requirement	Delivered by
45(1)(a)	The permit shall include a list of all types of waste which may be treated using at least the types of waste set out in the European Waste List established by Decision 2000/532/EC, if possible, and containing information on the quantity of each type of waste, where appropriate.	Condition 2.3.4(a) and Table S2.2 in Schedule 2 of the Permit.
45(1)(c)	The permit shall include the limit values for emissions into air and water.	Conditions 3.1.1 and 3.1.2 and Tables S3.1, S3.1(a) in Schedule 3 of the Permit.
45(1)(e)	The permit shall include the sampling and measurement procedures and frequencies to be used to comply with the conditions set for emissions monitoring.	Conditions 3.6.1 to 3.6.54 and Tables S3.1, S3.1(a), S3.3 and S3.4 in Schedule 3 of the Permit.
45(1)(f)	The permit shall include the maximum permissible period of unavoidable stoppages, disturbances or failures of the purification devices or the measurement devices, during which the emissions into the air and the discharges of wastewater may exceed the prescribed emission limit values.	Conditions 2.3.14 and 2.3.15.
46(1)	Waste gases shall be discharged in a controlled way by means of a stack the height of which is calculated in such a way as to safeguard human health and the environment.	Condition 2.3.1(a) and Table S1.2 of Schedule 1 of the Permit.
46(5)	Prevention of unauthorised and accidental release of any polluting substances into soil, surface water or groundwater.	The Application explains the measures to be in place for achieving the directive

IED Article	Requirement	Delivered by
	Adequate storage capacity for contaminated rainwater run-off from the site or for contaminated water from spillage or fire-fighting.	requirements. The permit requires that these measures are used. Various permit conditions address this and when taken as a whole they ensure compliance with this requirement.
48(1)	Monitoring of emissions is carried out in accordance with Parts 6 and 7 of Annex VI.	Conditions 3.6.1 to 3.6.4, 3.2.1, 3.2.2, tables S3.1, S3.1(a). Reference conditions are defined in Schedule 6 of the Permit.
48(3)	The competent authority shall determine the location of sampling or measurement points to be used for monitoring of emissions.	Conditions 3.6.1. Pre-operational condition PO6
48(4)	All monitoring results shall be recorded, processed and presented in such a way as to enable the competent authority to verify compliance with the operating conditions and emission limit values which are included in the permit.	Conditions 4.1.1 and 4.1.2, and Tables S4.1 and S4.4
49	The emission limit values for air and water shall be regarded as being complied with if the conditions described in Part 8 of Annex VI are fulfilled.	conditions 3.1.1, 3.1.2, 3.2.1, 3.2.2 and tables S3.1, S3.1(a)
55(1)	Application, decision and permit to be publicly available.	All documents are accessible from the Environment Agency Public Register.

Annex 1B: Compliance with Bat Conclusions

BAT 21, 27 and 28 have been taken into consideration for this Variation.

No other BAT conclusions are affected by this Variation. All other BAT conclusions have been recently assessed by Variation EPR/AP3832WS/V003.

BAT conclusion	Criteria	Delivered by
21	Measures to prevent or reduce diffuse emissions including odour	Measures described in the Application. Permit conditions 2.3.1, table S1.2, 3.3.1, 3.3.2, 3.4.1, 3.4.2. Sections 5.3, 6.4 and 7.3.4 of this decision document.
27	Techniques to reduce emissions of HCl, HF and SO_2	Measures described in the Application. Permit condition 2.3.1 and table S1.2, 3.1.1, 3.1.2 and table S3.1. Section 7.2.3 of this decision document.
28	Techniques to reduce peak emissions of HCl, HF and SO_2, optimise reagent use and BAT AELs	Measures described in the Application. Permit conditions 2.3.1, table S1.2, 3.1.1, 3.1.2 and table S3.1. Section 7.2.3 of this decision document.

Annex 2: Pre-Operational Conditions

Based on the information in the Application, we consider that we do need to impose extra pre-operational conditions in addition to those already in the existing Permit. These conditions are set out below and referred to, where applicable, in the text of the decision document. We are using these conditions to require the Operator to confirm that the details and measures proposed in the Application have been adopted or implemented prior to the operation of the Installation.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO13	Revised Odour Management Plan (OMP): Prior to commencing operations authorised in this permit, the operator shall submit to the Environment Agency for assessment and written approval a revised Odour Management Plan (OMP) which is consistent with the final design of the facility. The revised Odour Management Plan shall be in accordance with our H4 odour guidance and include, but not be limited to: • Review of sources of odour on the site. • Options available to reduce or eliminate odour from each identified source with the potential to result in significant emissions. • The odour prevention measures to be put in place. The operator shall implement the content of the approved Odour Management Plan as approved in writing by the Environment Agency.

Annex 3: Improvement Conditions

Based on the information in the Application we consider that we do not need to set extra improvement conditions other than those already in the existing Permit.