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

## Decision document recording our decision-making process

| | |
|---|---|
| The Permit Number is: | EPR/AP3304SZ |
| The Applicant / Operator is: | Powerfuel Portland Limited |
| The Installation is located at: | Portland Energy Recovery Facility, Portland Port, Castletown, Portland, DT5 1PP |

## What this document is about

This is a decision document, which accompanies a permit.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the permit we are issuing to the Applicant. 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 Applicant'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/AP3304SZ/A001. We refer to the application as "the **Application**" in this document in order to be consistent.

The number we propose to give to the permit is EPR/AP3304SZ. We refer to the proposed permit as "the **Permit**" in this document.

The Application was duly made on 18th May 2021.

The Applicant is Powerfuel Portland Limited. We refer to Powerfuel Portland Limited as "the **Applicant**" in this document. Where we are talking about what would happen after the Permit is granted, we call Powerfuel Portland Limited "the **Operator**".

Powerfuel Portland Limited's proposed facility is located at Portland Energy Recovery Facility, Portland Port, Castletown, Portland, DT5 1PP. We refer to this as "the **Installation**" in this document.

# How this document is structured

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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 |
| BREF | Best Available Techniques (BAT) Reference Documents for Waste Incineration |
| BAT C | BAT conclusions |
| CEM | Continuous emissions monitor |
| CFD | Computerised fluid dynamics |
| CHP | Combined heat and power |
| COMEAP | Committee on the Medical Effects of Air Pollutants |
| CROW | Countryside and rights of way Act 2000 |
| CV | Calorific value |
| CW | Clinical waste |
| CWI | Clinical waste incinerator |
| 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 |
| ES | Environmental standard |
| EWC | European waste catalogue |
| FGC | Flue gas cleaning |
| FSA | Food Standards Agency |
| GWP | Global Warming Potential |
| HHRAP | Human Health Risk Assessment Protocol |

| | |
|---|---|
| HPA | Health Protection Agency (now PHE – Public Health England) |
| HRA | Human Rights Act 1998 |
| HW | Hazardous waste |
| HWI | Hazardous waste incinerator |
| IBA | Incinerator Bottom Ash |
| IED | Industrial Emissions Directive (2010/75/EU) |
| IPPCD | Integrated Pollution Prevention and Control Directive (2008/1/EC) – now superseded by IED |
| I-TEF | Toxic Equivalent Factors set out in Annex VI Part 2 of IED |
| I-TEQ | Toxic Equivalent Quotient calculated using I-TEF |
| LCPD | Large Combustion Plant Directive (2001/80/EC) – now superseded by IED |
| LCV | Lower calorific value – also termed net calorific value |
| LfD | Landfill Directive (1999/31/EC) |
| LADPH | Local Authority Director(s) of Public Health |
| 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 |
| RDF | Refuse derived fuel |
| RGS | Regulatory Guidance Series |

| | |
|---|---|
| SAC | Special Area of Conservation |
| SED | Solvent Emissions Directive (1999/13/EC) – now superseded by IED |
| SCR | Selective catalytic reduction |
| SGN | Sector guidance note |
| SHPI(s) | Site(s) of High Public Interest |
| 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 |
| UHV | Upper heating value –also termed gross calorific value |
| UKHSA | UK Health Security Agency |
| 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 Applicant. 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 Permit contains many conditions taken from our standard Environmental Permit template including the relevant Annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard condition appropriate. This document does, however, provide an explanation of our use of "tailor-made" or installation-specific conditions, or where our Permit template provides two or more options, an explanation of the reason(s) for choosing the option that has been specified.

# 2 How we reached our decision

## 2.1 Receipt of Application

The Application was duly made on 18th May 2021. 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 below.

The Applicant 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 carried out consultation on the Application in accordance with the EPR, our statutory PPS and our own internal guidance RGS Note 6 for Determinations involving Sites of High Public Interest. We consider that this process satisfies, and frequently goes beyond the requirements of the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, which are directly incorporated into the IED, which applies to the Installation and the Application. We have also taken into account our obligations under the Local Democracy, Economic Development and Construction Act 2009 (particularly Section 23). This requires us, where we consider it

appropriate, to take such steps as we consider appropriate to secure the involvement of representatives of interested persons in the exercise of our functions, by providing them with information, consulting them or involving them in any other way. In this case, our consultation already satisfies the Act's requirements.

We advertised the Application by a notice placed on our website, which contained all the information required by the IED, including telling people where and when they could see a copy of the Application. We placed an advertisement in the Dorset Echo on 11th June 2021. We also issued a press release notifying the public about the consultation and followed this with weekly reminders via the Environment Agency's social media channels. Due to the COVID pandemic we were not able to carry out any face-to-face consultation such as a drop in event. However, we carried out an extended consultation over a 15 week period.

We made a copy of the Application and all other documents relevant to our determination available to view on Citizen Space on our website.

We made a copy of the Application and all other documents relevant to our determination (see below) available to view on our Public Register. The Applicant also provided additional hard copies of the Application which were available to view at the public library in Weymouth and in Portland respectively.

We sent copies of the Application to the following bodies, which includes those with whom we have "Working Together Agreements":

- Dorset Council (Planning, and Environmental Health departments)
- Director of Public Health and Public Health England
- Food Standards Agency
- Health and Safety Executive
- National Grid
- Local Fire and Rescue Service
- Wessex Water
- Local Harbour and Port Authority

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly. Note under our Working Together Agreement with Natural England, we only inform Natural England of the results of our assessment of the impact of the installation on designated Habitats sites.

Written comments were also accepted by the Environment Agency beyond the formal consultation period. Further details along with a summary of consultation comments and our response to the representations we received can be found in Annex 4. We have taken all relevant representations into consideration in reaching our determination.

## 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 information notices on 04 November 2021, 09 September 2022 and 08 September 2023. A copy of each information notice and the responses were placed on our public register. They were also made available to view on the consultation citizen space page listed in section 2.2 above.

In addition to our information notices, we received additional information during the determination from Fichtner Consulting Engineers Limited on behalf of their client Powerfuel Portland Limited, as follows:

- Impact of dioxins using the TDI approach (update to Human Health Risk Assessment), received 13 May 2022
- Legal operator and IBA response, received 22 June 2023

We made a copy of this information available to the public in the same way as the responses to our information notices. They were also made available to view on the Citizen Space consultation page listed in section 2.2 above.

Having carefully considered the Application and all other relevant information, we put our draft decision before the public and other interested parties in the form of a draft Permit, together with explanatory document. We originally consulted on our draft decision from 12/07/2024 to 11/08/2024. However, we received correspondence that one of the links given a Briefing Note wasn't working correctly, this meant that some people who wanted to submit a response may not have been able to do so. We therefore took the decision to reopen the final consultation on our draft decision, this ran from 20/09/2024 to 20/10/2024. A summary of the consultation responses and how we have taken into account all relevant representations is shown in Annex 4B.

# 3 The legal framework

The Permit will be granted, under Regulation 13 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 a section 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” for EPR purposes (see below), such as air pollution control plant, and the ash storage bunker, are therefore included in the listed activity description. Incinerator bottom ash (IBA) will not be treated at the Installation. The Applicant intends to transfer IBA from the waste incineration plant to an off-site IBA processing facility for recovery/recycling.

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 and directly associated activities comprise the Installation.

### 4.1.2 The Site

The proposed installation is located at National Grid Reference SY 69607 74248 on the north eastern coast of the Isle of Portland, Dorset. The site lies within the largely industrialised Portland Port area and is not publicly accessible. Vehicular

access is from the west, through the main Portland harbour complex, via Castletown, Castel Road, Lerret Road and the A354.

The land upon which the site is located is owned by Portland Port and is an existing industrial area, currently unused, within the port, allowing waste to be transported by road or delivered by ship. We have received a significant number of concerns in response to our public consultation about the potential use of ships to transport waste to and from the site. It should be noted that the transport of waste does not form part of this Permit up to the point it enters and then leaves the installation. Therefore, the use of ships to transport waste is outside of the remit for this Permit.

The site is bordered to the south west by Incline Road, which is a private road within the port that is actively used by port traffic, and a former railway embankment. Cliffs lie to the south and southwest of the site and rise steeply to approximately 147m above ordnance datum (AOD) at their highest point. The area of the cliffs supporting grassland, scrub and woodland habitats rises to approximately 125 m AOD.

The eastern site boundary is formed by the shingle shoreline of Balaclava Bay and overland fuel pipes from Portland Bunkers, which are fuel bunkers in the nearby cliffs used for marine bunker fuel supply. Existing operational port development lies to the north and north-west of the site. In 2016/17, the main road leading to Incline Hill was realigned along the base of the hill / scree, creating the open development area on site. The land has since been cleared and is regarded as ‘brownfield’ land.

Her Majesty’s Prison (HMP) The Verne, and neighbouring residential dwellings, are approximately 430m to the southwest of the site at the top of the steep slope. The other nearest residential dwellings include homes at Amelia Close, Beel Close, Leet Close, East Weare Road and Ayton Drive, which are located approximately 630m to the west of the site.

The site is directly underlain by bedrock geology comprising mudstone of the Kimmeridge Clay formation which is classified as unproductive aquifer. Superficial geology comprising Tidal Flat Deposits are located to the north-east of the site only, along the Balaclava Bay shoreline. The site is not within a groundwater source protection zone, nor is it within a designated flood zone for planning. There are no surface water features on-site. The closest surface water is the coastal waters of Portland Harbour and Balaclava Bay.

The Applicant 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.

Further information on the site is addressed below in section 4.3.

4.1.3 What the Installation does

The Applicant has described the facility as an Energy Recovery Facility (ERF). 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 nevertheless 'incineration' because it is considered that its main purpose is the thermal treatment of waste.

The proposed facility will incinerate refuse derived fuel (RDF) produced from domestic (municipal solid waste, MSW) and commercial & industrial (C&I) non-hazardous waste. It will not take hazardous waste or clinical waste. It will operate continuously throughout the year.

The main activities associated with the Facility will be the combustion of incoming waste to raise steam and the generation of electricity in a steam turbine/generator which has been designed to generate up to 18.1 MWe. The Facility will have a parasitic load of approximately 2.9 MWe therefore approximately 15.2 MWe will be available for export to the National Grid as well as for providing ship-to-shore power to boats which dock in Portland harbour.

In addition to generating electricity, the Facility will also be configured so that heat can be exported in the form of hot water or high pressure steam to local heat users. The Application states that while several potential heat users have been identified there are currently no formal agreements in place. The Facility has therefore been designed to enable heat to be readily exported in the future.

The Facility will comprise of a single waste incineration line, incoming waste reception facilities, main thermal treatment process, turbine hall, on-site facilities for the treatment or storage of residues and waste water, flue gas treatment, stack, boilers, air cooled condenser, devices and systems for controlling operation of the waste incineration plant and recording and monitoring conditions.

In addition to the main elements described, the Facility will also include weighbridges (in and out), water, gas oil and air supply systems, site fencing and security barriers, external hardstanding areas for vehicle manoeuvring, internal access roads and car parking, transformers, grid connection compound, effluent storage and treatment facilities, offices, workshop, stores and staff welfare facilities.

The operation of the Facility is summarised as follows:

Waste could be delivered by road and/or by sea. Upon arrival at the Facility, delivery vehicles will be weighed and periodically inspected at the gatehouse before being directed to the Waste Reception Area which is a fully enclosed building maintained under slight negative pressure to prevent odour, dust or litter escaping the building. Waste will be delivered as both baled waste and 'loose' RDF, and depending on what form the incoming waste is delivered there will be separate

initial storage arrangements, i.e. either in the bale storage area, or the waste bunker, both of which are located within the Waste Reception Area.

The baled waste will be unloaded from the HGV via a dedicated crane and transferred to the bale storage area. The baled waste will be regularly transferred to the waste bunker, via the crane which will transfer the baled waste from the bale storage area to a 'de-baler'. The de-baled waste will then be conveyed to the waste bunker via a dedicated conveyor within the building.

Incoming 'loose' waste will be tipped directly into the waste bunker. The waste bunker will consist of a double bunker arrangement, with a shallow pit (referred to as the waste bunker) which will be used for the unloading of waste deliveries via road and also for the baled waste (once de-baled), before being transferred to the waste storage bunker for storage prior to processing.

The bale storage area will have the equivalent storage to a maximum of up to 30 days of storage. Therefore, the maximum period of time which waste will be retained within the bale storage area will be up to 30 days. The storage capacity of the waste storage bunker is equivalent to up to 3 days of waste processing capacity. All of the waste processing areas within the Facility, including the Waste Reception Area will be fitted with fire detection and alarms systems, and fire suppression systems including automated sprinkler/ water deluge systems. We discuss the Applicant's Fire Prevention Plan (FPP) in section 4.3.4.

The incineration of waste will take place via a single line with a nominal design capacity of approximately 183,000 tonnes per annum. The exact figure will depend on the energy content (known as calorific value) of the waste, and the number of hours which the plant is operational. The feed rate will be adjusted to ensure that the energy recovery system runs, as far as possible, at full capacity at all times. The maximum capacity of the plant will be limited by the permit to 202,000 tonnes of waste per annum, taking into account potential variations in the calorific value of the waste being combusted, and for the Facility operating for more than the predicted 8,000 hours in a particular year, up to maximum of 8,760 hours.

A grab crane will transfer waste fuel from the waste storage bunker to the feed hopper of the combustion chamber. The grab will also be used to homogenise the incoming waste. The combustion chamber will use a conventional, moving grate which will agitate the fuel bed to promote a good burnout of the waste and a uniform heat release. The fuel is moved mechanically by means of reciprocating grate elements from the feed end, through a drying zone, a main combustion zone and, finally, a burn out zone. The furnace will be designed to ensure that the exhaust gases are raised to a minimum temperature of 850°C, with a minimum of 2 seconds flue gas residence time at this temperature. Primary combustion air will be drawn from the Waste Reception Area to maintain negative pressure and fed into the combustion chamber beneath the grate. Secondary combustion air will be injected into the flame body above the grate to facilitate the combustion of waste on the grate. Emissions of nitrous oxides will be controlled by control of combustion air and by the injection of ammonia into the combustion chamber via a process known as Selective Non-Catalytic Reduction (SNCR).

Once fully combusted, the solid residue (bottom ash) is discharged to a collection system where it is quenched in a water bath. Boiler ash, i.e. the ash fraction that collects within the boiler, will also be conveyed to the collection system, and will mix with the bottom ash within the water bath to form the residue known as incinerator bottom ash (IBA). The quenched IBA is pushed upwards and out of the water bath by hydraulically driven rams and transferred to a dedicated IBA storage area. There will be regular collections of IBA from the IBA storage area for transfer off-site to a suitably licensed waste facility. IBA treatment will not take place on-site.

Hot gases from waste combustion will be passed through a boiler to raise steam. The steam will then be passed to a steam turbine to generate electricity for export to nearby users and the National Grid, with the potential to export heat to local heat users.

The hot exhaust gases from the furnace combustion stage will pass to a multi-pass water tube boiler integral with the furnace in order to recover the energy from the flue-gas. The boiler will deliver superheated steam to a high efficiency steam turbine and generator to produce electricity. The system will consist of a high efficiency multistage turbine with a generator and an air-cooled condenser (ACC). Generated electricity will be used on-site with the excess exported to the National Grid. Provision will be made for connection to a CHP scheme to provide further energy recovery by the export of heat, if any potential heat users become available in the future. Residual heat which is not recovered will be dissipated to the atmosphere by the ACC to allow the cooled water to be recirculated back to the steam/water circuit of the boiler.

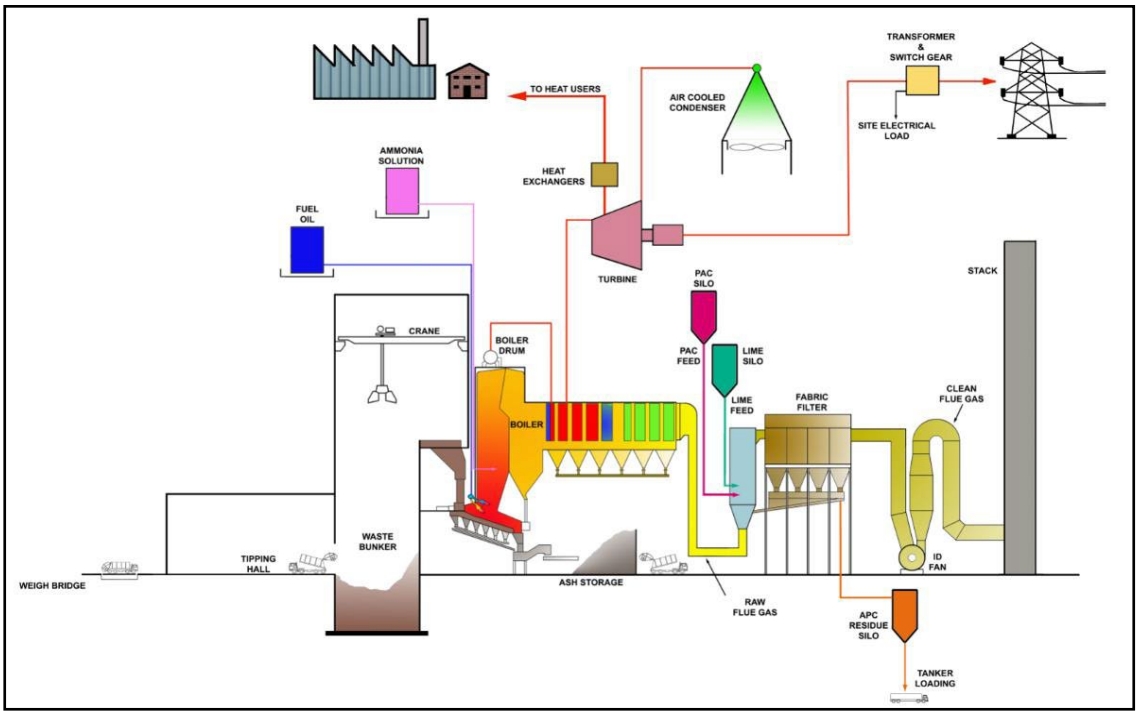
Following heat recovery, the hot flue gases are then passed to the flue gas treatment (FGT) plant where they will be cleaned before being released into the atmosphere. This will involve dosing various reagents into the flue gas, namely powdered activated carbon, primarily to control dioxin emissions, and hydrated lime to control acid gas emissions. Fabric filter bags will also be used to remove dust (particulates). The residue produced by flue gas treatment is called APCr (Air Pollution Control residue) and includes reaction products and un-reacted solids in the flue gas. APCr will accumulate on the surface of the filter bags which are then periodically cleaned by a reverse jet of air displacing the filtered solids into collection chutes beneath. The collected APCr will be held in a silo from where it will be recycled back into the flue gas stream at the top of the reaction chamber. As fresh reagents are added, an equivalent quantity of residue collected from the bag filters will be removed.

Once the flue gas has been cleaned, any remaining pollutants within the flue gas will be measured using a system of continuous emissions monitoring equipment and periodic manual sampling. Continuous monitoring of emissions to air of the flue gases from the Facility, including monitoring of oxygen, carbon monoxide, hydrogen chloride, sulphur dioxide, ammonia, nitrogen oxides, Volatile Organic Compounds (VOCs), and dust (particulates). Other pollutants will be monitored by spot measurements at regular intervals. Reporting of all emissions monitoring will be made to the Environment Agency. The cleaned flue gas will be released to atmosphere via a single stack of 80 metres in height.

An emergency diesel generator will provide sufficient power to run or safely shutdown the Facility in the event of the loss of a grid connection. Otherwise, the generator is only expected to operate for short-term periods for testing purposes. The exact size of the generator will be confirmed during detailed design works; however it is expected to be approximately 8MWth.

The operator will develop and implement a documented environmental management system (EMS) to meet the requirements of ISO 14001.

An indicative process diagram for the Facility is presented in the figure below.




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

| | | |
|---|---|---|
| Waste throughput, Tonnes/line | 183,000 te/annum nominal based on 8,000 operational hours; or 202,000 te/annum based on continual operation | 22.8 te/hour nominal |
| Waste processed | Refuse Derived Fuel | |
| Number of lines | 1 | |
| Furnace technology | Moving grate | |
| Auxiliary Fuel | Gas Oil | |
| Acid gas abatement | Dry | Lime |
| NOx abatement | SNCR | Ammonia |
| Reagent consumption | Auxiliary Fuel: 880 te/annum<br>Ammonia: 770 te/annum<br>Hydrated Lime: 3,700 te/annum<br>Activated carbon: 90 te/annum | |

| | | |
|---|---|---|
| | Process water: ~7$m^3$/hr | |
| Flue gas recirculation | No | |
| Dioxin abatement | Activated carbon | |
| Stack | Grid Reference – SY 69607, 74248 | |
| | Height, 80 m | Diameter, 1.85 m |
| Flue gas | 39.07, $Nm^3$/s | Velocity, 20 m/s |
| | 140 °C | |
| Electricity generated | 18.1 MWe | |
| Electricity exported | 15.2 MWe | |
| Steam conditions | Temperature, 400 °C | Pressure, 51 bar |
| Waste heat use | Designed to be capable of exporting approximately 11 MWth heat to local heat users in the form of either high pressure steam, or hot water | |

4.1.4 Key Issues in the Determination

The key issues arising during this determination were assessment of the impact from emissions to air, and the assessment of Best Available Techniques (BAT). We therefore describe how we determined these issues in most detail in this document.

## 4.2 The site and its protection

4.2.1 Site setting, layout and history

The site setting on the northeastern coast of the Isle of Portland, within the area of Portland Port, is described in section 4.1.2 above.

The applicant has submitted site layout plans which shows how the various buildings and operational components will be laid out.

A summary of the historical land use of the area of the installation, as provided in the application, is set out below:

| Year | Change in land use |
|---|---|
| 1864 | Several railway lines run across the site, servicing a number of buildings in the north and west of the site and a gas works to the south. A shingle beach lies within the northeast corner of the site. |
| 1901 | The gas works has been removed. ‘Admiralty Slaughter House’ occupies the south of the site. The buildings in the northwest of the site are occupied by the Royal Naval Hospital. There is a boat house in the east of the site. The area of shingle beach in the northwest of the site appears to have been infilled and now forms part of the side of the port. |
| 1903 | Timber yard occupies the northeast of the site. |

| Year | Change in land use |
|---|---|
| 1927 | The railway lines have been removed and several buildings demolished. |
| 1938 | Two new buildings in the south and north of the site. |
| 1963 | Site is occupied by several large buildings which cover a significant proportion of the site area. Labelled as a Dockyard. |
| 1973 | Canteen Road and Balaclava Road marked in east of the site and Incline Road in the west of the site. |
| 1999 | Building in northwest of site has been demolished. Rubble remains stockpiled across building footprint area. |
| 2001 | Buildings in west of site demolished. |
| 2005 | West of site divided into four open storage areas. Some stockpiled materials within. |
| 2009 | Buildings in the south have been demolished. Rubble remains stockpiled in former building footprint. Stockpiled materials in the storage areas to the west no longer present, this area appears to now be occupied by vehicles and other mechanical equipment. |
| 2014 | Storage areas and equipment to the west cleared and buildings in northeast corner demolished. |
| 2017 | One building remains in the north of the site. All other buildings demolished but some stockpiles on rubble remain. |
| 2020 | All buildings on site demolished. |

The Applicant's review of site history has identified over 150 years of port and industrial uses, with made ground having been placed across the site in several phases. While the Application does not identify any particular sources of historical contamination such as fuel tanks, it does however state that spills and contaminant releases may have occurred. Two drainage outfalls are reported to have been present on the eastern Site boundary which discharged into Balaclava Bay. The Application also states that the demolition of twentieth century buildings may have resulted in the presence of asbestos within the fill material.
The land use for the area surrounding the installation has been Port uses similar to that within the installation boundary, with the exception of a gasworks to the south west of the site which was present in the late 1800s.

Portland and its harbour were designated as HM Naval Base Portland in 1923. From 1958, Portland was home to Flag Officer Sea Training. During this time, the site was dominated by a weapons research establishment building in the south east, with other buildings dedicated to mechanical repair facilities for military vehicles. The naval base and two major weapons research establishments were closed in 1995/96 and Portland Port Ltd began the transformation of the harbour into a commercial port. The buildings on site have been demolished to create cargo storage space when they were not being used by tenants.

4.2.2 Proposed site design: potentially polluting substances and prevention measures

The activities undertaken at the Facility will process incoming waste, utilise a range of chemicals, and fuel, and result in residual wastes, all of which have the potential to cause pollution of ground and groundwater if not stored properly. Chemicals associated with emissions abatement and flue gas treatment include ammonia solution, hydrated lime, and powdered activated carbon. Boiler water treatment chemicals e.g. oxygen scavengers and corrosion inhibitors, and auxiliary fuel such as gas oil (diesel) are also used. In addition, potentially harmful residues result from the incineration process including IBA and APCr. The Applicant has confirmed that the following key measures will be put into place in order to prevent pollution to ground and groundwater from these substances.

- Chemicals will be supplied to standard specifications offered by different suppliers. All chemicals will be handled in accordance with Care of Substances Hazardous to Health (COSHH) Regulations as part of the quality assurance procedures and full product data sheets will be available.

- Tanker off-loading of chemicals will take place within areas where the drainage is contained with the appropriate capacity to contain a spill during delivery.

- All processing areas, loading/unloading areas, materials handling areas and roadways will be covered in concrete and/or tarmac hardstanding with contained drainage.

- Deliveries of all chemicals / fuel will be unloaded and transferred to suitable storage facilities. All areas and facilities for the storage of chemicals and liquid hazardous materials will be situated within secondary containment, and, where appropriate, tertiary containment. Secondary containment will have capacity to contain whichever is the greater of 110% of the tank capacity or 25% of the total volume of materials being stored, in case of failure of the primary storage system.

- Hydrated lime (solid calcium hydroxide) used to react with the acid gases in the flue gas and powdered activated carbon (PAC) used for the absorption of volatile heavy metals and organic components, will be stored in separate silos. These chemicals will be delivered by tanker and offloaded pneumatically by means of the onboard truck compressor into the silo. The displaced air will be vented to atmosphere through a fabric filter to retain dusts, located on the top of the silo. Cleaning of the filter will be done automatically with compressed air after the filling operation. Filters will be inspected regularly for leaks. All silos will be fitted with high level alarms.

- Ammonia solution (25%) used as a reagent in the NOx abatement system, and gas oil used as an auxiliary fuel will be off-loaded into primary storage tanks located within secondary containment bunds on areas of hardstanding with contained drainage.

- Boiler water treatment chemicals used to control water hardness, pH and scaling will be delivered in sealed containers and stored in a bunded area within the water treatment room. There will also be portable bottles of oxygen and acetylene gas stored on site for welding purposes. The gas bottles will be kept secure in a separate compound.

- In addition, various maintenance materials will be stored in an appropriate manner and used in small quantities. These include hydraulic and silicone-based oils, greases, insulants, refrigerant gases for the air conditioning plant, glycol/antifreeze for cooling, welding gases (oxyacetylene, TIG, MIG), CO2 and foam agents for fire-fighting, electrical switchgear and gas emptying and filling equipment.

- IBA and APCr will be stored within primary containment, e.g. a silo, located on areas of hardstanding with contained drainage.

- Periodic reviews of all materials used will be made in the light of new products and developments. Any significant change of material, where it may have an impact on the environment, will not be made without firstly assessing the impact and seeking approval from the Environment Agency.

- The Operator will maintain a detailed inventory of raw materials used and will have procedures for the regular review of developments in the raw materials used.

- With regard to incoming waste, the surfaces of the waste reception, handling and storage areas have been designed and will be constructed as impermeable structures. Adequate drainage infrastructure will be fitted to areas where receipt, handling and storage of waste takes place – these areas will have appropriate falls to the process wastewater drainage system.

- The integrity of areas of hardstanding will be periodically verified by visual inspection. Regular maintenance of the drainage systems will be undertaken in accordance with documented management procedures to be developed for the Facility.

- Surface water run-off from vehicle movement areas, roadways and building roofs will be collected in a surface water drainage system. The surface water drainage system will be fitted with a retention interceptor and swales, prior to the discharge point, to prevent discharge of oils and sediment collected from vehicle movement areas and roadways being released off-site. All such uncontaminated surface water run-off will be discharged, via separate discharge points, to Balaclava Bay (east) and/or Portland Harbour.

Provided the measures set out in the risk assessment (multiple layers of containment and sealed drainage system), we are satisfied that pollution of ground and groundwater from the operation of the Facility is unlikely.

Under Article 22(2) of the IED the Applicant is required to provide a baseline report containing at least the information set out in paragraphs (a) and (b) of the Article before starting operation.

The Applicant has submitted a site condition report which includes a report on the baseline conditions as required by Article 22. We have reviewed that report and consider that it does not adequately describe the condition of the soil and groundwater prior to the start of operations. We have therefore set a pre-operational condition (PO7) requiring the Operator to provide this information prior to the commencement of operations.

The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the installation and at cessation of activities at the installation.

#### 4.2.3 Closure and decommissioning

Having considered the information submitted in the Application, we are satisfied that the appropriate measures will be in place for the closure and decommissioning of the Installation, as referred to in Section 2.11 of the Supporting Information of the Application. Pre-operational condition PO1 requires the Operator to have an Environmental Management System in place before the Installation is operational, and this will include a site closure plan.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into accounts both the baseline conditions and the site's current or approved future use. To do this, the Operator will apply to us for surrender of the permit, which we will not grant unless and until we are satisfied that these requirements have been met.

### 4.3 Operation of the Installation – general issues

#### 4.3.1 Administrative issues

The Applicant is the sole Operator of the Installation.

During the consultation on the application, we received a lot of responses expressing concern over who the legal Operator of the site would be.

Our guidance 'Legal Operator and Competence Requirements: Environmental Permits' specifies that the Operator needs to have sufficient control over the facility and that they must:

- have day-to-day control of the facility or activity, including the manner and rate of operation;
- make sure that permit conditions are complied with;
- decide who holds important staff positions and have incompetent staff removed, if required;

- make investment and financial decisions that affect the facility's performance or how the activity is carried out; and
- make sure its activities are controlled in an emergency.

In addition, the above-mentioned guidance also states: "If contractors work at your site, you can still be classed as the legal operator if you have sufficient control of the activities carried out by your contractors."

The Consultant confirmed that Powerfuel Portland Ltd is a private company which has been set up for the development, management and operation of the incinerator facility. It is understood that Powerfuel Portland Ltd would plan to subcontract the day-to-day operation of the Installation to a third-party organisation through an operation and maintenance (O&M) contract. However, the Consultant also confirmed that Powerfuel Portland Ltd would retain control of the installation through the terms of the contract. Highlighting that the installation would be operated in accordance with the instructions of Powerfuel Portland Ltd and that any O&M contractor would not be able to '*make investment and financial decisions that affect the facility's performance or how the activity is carried out'*.

We are satisfied that the Applicant is the person who will have control over the operation of the Installation after the granting of the Permit; and that the Applicant will be able to operate the Installation so as to comply with the conditions included in the Permit.

### 4.3.2 Management

The Applicant has stated in the Application that they will implement an Environmental Management System (EMS) that will be certified under ISO14001. A pre-operational condition (PO1) is included requiring the Operator to provide a summary of the EMS prior to commissioning of the plant and to make available for inspection all EMS documentation. The Environment Agency recognises that certification of the EMS cannot take place until the Installation is operational. An improvement condition (IC1) is included requiring the Operator to report progress towards gaining accreditation of its EMS.

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.

### 4.3.3 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.

### 4.3.4 Accident management

The Applicant has not submitted an Accident Management Plan. However, having considered the other 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 and must be in place prior to commissioning as required by a pre-operational condition (PO1).

The Applicant submitted a Fire Prevention Plan (FPP). We requested additional information through a Schedule 5 notice dated 09/09/2022. An updated FPP was submitted in response to our request on 10/10/2022.

We are satisfied that the information contained in the updated FPP, combined with the information required through pre-operational condition PO10, will be adequate to meet our FPP guidance. Full design details, including firewater provision, containment design and quarantine area were not available at the time of permit determination and therefore a pre-operational condition requires that details and plans of these, including confirmation of how they meet the standards set out in our FPP guidance, are submitted and approved prior to commissioning.

### 4.3.5 Off-site conditions

We do not consider that any off-site conditions are necessary.

### 4.3.6 Operating techniques

We have specified that the Applicant must operate the Installation in accordance with the documents set out in table S1.2 of the permit.

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

We have also specified the following limits and controls on the use of raw materials and fuels:

| Raw Material or Fuel | Specifications | Justification |
|---|---|---|
| Gas Oil | < 0.1% sulphur content | As required by Sulphur Content of Liquid Fuels Regulations. |

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 those wastes by the European Waste Catalogue

(EWC) number, which the Applicant will accept in the waste streams entering the plant and which the plant is capable of burning in an environmentally acceptable way. We have specified the permitted waste types, descriptions and where appropriate quantities which can be accepted at the installation in Table S2.2.

We are satisfied that the Applicant can accept the wastes contained in Table S2.2 of the Permit because: -

(i) these wastes are categorised as municipal waste in the European Waste Catalogue or are non-hazardous wastes similar in character to municipal waste;
(ii) the wastes are all categorised as non-hazardous in the European Waste Catalogue and are capable of being safely burnt at the installation;
(iii) these wastes are likely to be within the design calorific value (CV) range for the plant; and
(iv) these wastes are unlikely to contain harmful components that cannot be safely processed at the Installation.

The Permit (conditions 2.3.5 and 2.3.6) restricts the receipt of separately collected fractions.

The nominal design capacity of the Installation is approximately 183,000 tonnes per year based on an average CV and 8,000 hours operation per year. The Applicant's risk assessments were based on continual operation and/or allowance for waste with a lower CV, which would equate to approximately 202,000 tonnes per year. The Permit restricts throughput to this maximum capacity.

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 is set out later in this document.

4.3.7 Energy efficiency

(i) Consideration of 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. This issue is dealt with in this section.

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*". This issue is covered in this section.

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. This aspect is covered in the BAT assessment in section 6 of this Decision Document.

4. The extent to which the Installation meets the requirement of Article 14(5) of the Energy Efficiency Directive which requires new thermal electricity generation installations with a total thermal input exceeding 20 MW to carry out a cost-benefit assessment to "*assess the cost and benefits of providing for the operation of the installation as a high-efficiency cogeneration installation*".

   **Cogeneration** means the simultaneous generation in one process of thermal energy and electrical or mechanical energy and is also known as combined heat and power (CHP)

   **High-efficiency co-generation** is cogeneration which achieves at least 10% savings in primary energy usage compared to the separate generation of heat and power – see Annex II of the Energy Efficiency Directive for detail on how to calculate this.

(ii) Use of energy within the Installation

Having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that energy is used efficiently within the Installation.

The Application details several measures that will be implemented at the Installation in order to increase its energy efficiency:

- The Facility has been designed with careful attention being paid to all normal energy efficiency design features, such as high efficiency motors, high efficiency variable speed drives, high standards of cladding and insulation.
- An energy efficiency plan would be built into the operation and maintenance procedures of the plant ensuring maximum, practical, sustainable, safe and controllable electricity generation. The plan would be reviewed regularly as part of the environmental management systems.
- The Facility will be designed to achieve a high thermal efficiency. In particular:

  (i) the boiler will be equipped with economisers and superheaters to optimise thermal cycle efficiency without prejudicing boiler tube life, having regard for the nature of the waste fuel that is combusted;
  (ii) unnecessary releases of steam and hot water will be avoided, to avoid the loss of boiler water treatment chemicals and the heat contained within the steam and water;
  (iii) low grade heat will be extracted from the turbine and used to preheat combustion air in order to improve the efficiency of the thermal cycle;
  (iv) steady operation will be maintained where necessary by using gas oil firing; and

(v) boiler heat exchange surfaces will be cleaned on a regular basis to ensure efficient heat recovery.

- During normal operation, procedures will be reviewed and amended, where necessary, to include improvements in efficiency as and when proven new equipment and operating techniques become available.

The Application states that the specific energy consumption, (referred to as *'internal power consumption'* in the Application) a measure of total energy consumed per unit of waste processed, will be 130 kWh/tonne, at a nominal design capacity of 183,000 t/a.

The BREF says that electricity consumption is typically between 60 KWh/t and 190 KWh/t depending on the LCV of the waste.

The LCV in this case is expected to be 11 MJ/kg. The specific energy consumption in the Application is in line with that set out above.

(iii) Generation of energy within the Installation - Compliance with Article 50(5) of the IED

Article 50(5) of the IED requires that *"the heat generated during the incineration and co-incineration process is recovered as far as practicable*".

Our CHP Ready Guidance - February 2013 considers that BAT for energy efficiency for Energy from Waste (EfW) plant is the use of CHP in circumstances where there are technically and economically viable opportunities for the supply of heat from the outset.

The term CHP in this context represents a plant which also provides a supply of heat from the electrical power generation process to either a district heating network or to an industrial / commercial building or process. However, it is recognised that opportunities for the supply of heat do not always exist from the outset (i.e. when a plant is first consented, constructed and commissioned).

In cases where there are no immediate opportunities for the supply of heat from the outset, the Environment Agency considers that BAT is to build the plant to be CHP Ready (CHP-R) to a degree which is dictated by the likely future opportunities which are technically viable and which may, in time, also become economically viable.

The BREF says that 0.4 – 0.8 MWh of electricity can be generated per tonne of waste.

Our technical guidance note, SGN EPR S5.01, states that where electricity only is generated, 5-9 MW of electricity should be recoverable per 100,000 tonnes/annum of waste (which equates to 0.4 – 0.72 MWh/tonne of waste).

The Installation will generate electricity only and has been specified to maximise electrical output with little or no use of waste heat. The Application shows 18.1 MW of electricity produced for an annual burn of 183,000 tonnes, which represents 9.9

MW per 100,000 tonnes/yr of waste burned (0.79 MWh/tonne of waste). The Installation is therefore at the upper end of the indicative BAT range, and also exceeds the upper end of the range stated in our technical guidance note.

The Application shows that the gross electrical efficiency will be 26% which is at the lower end of the BAT AEEL range of 25-35%, but not untypical for plants processing less than 200,000 tonnes of waste per annum (nominal design capacity is approximately 183,000 tonnes per annum).

In accordance with BAT 2 table S3.4 of the Permit requires the gross electrical efficiency to be measured by carrying out a performance test at full load.

Guidance note EPR 5.01 and Chapter IV of the IED both require that, as well as maximising the primary use of heat to generate electricity; waste heat should be recovered as far as practicable.

The location of the Installation largely determines the extent to which waste heat can be utilised, and this is a matter for the planning authority. The Applicant carried out a feasibility study (Heat Plan) and provided a CHP-R assessment as part of their application, which showed there was potential to provide district heating to several local organisations/businesses; suitable opportunities are being explored, though there are no firm agreements at this stage. There is provision within the design of the steam turbine to extract steam and / or low temperature hot water for a district heating scheme. Establishing a district heating network to supply local users would involve significant technical, financial and planning challenges such that this is not seen as a practicable proposition at present.

Our CHP-R guidance also states that opportunities to maximise the potential for heat recovery should be considered at the early planning stage, when sites are being identified for incineration facilities. In our role as a statutory consultee on the planning application, we ensured that the issue of energy utilisation was brought to the planning authority's attention.

We consider that, within the constraints of the location of the Installation explained above, the Installation will recover heat as far as practicable, and therefore that the requirements of Article 50(5) are met.

(iv) R1 Calculation

The R1 calculation does not form part of the matters relevant to our determination. It is however a general indicator that the installation is achieving a high level of energy recovery.

The Applicant did not present an R1 calculation with this application, however we received a separate application for a determination on whether the installation is a recovery or disposal facility. This was determined separately and granted on 26 February 2024.

(v) Choice of Steam Turbine

The Application showed that the steam conditions will be 400°C and 51 bar. We are satisfied that this represents BAT in terms of steam conditions to ensure efficient energy recovery.

(vi) Choice of Cooling System

The Applicant has chosen an air cooled cooling system. This was justified on the basis that it will reduce water usage (compared to water cooling systems), that it does not create a visual impact (i.e. a visible plume) unlike that from evaporative cooling, and that it can be designed and guaranteed by the technology supplier with sufficient capacity to maintain turbine efficiency during warm weather. It was stated that that the use of a direct (once-through) cooling would necessitate significant abstraction infrastructure within the harbour and would also result in a discharge of cooling water to the harbour, neither of which were reported to be feasible based on initial design work.

(vii) Compliance with Article 14(5) of the Energy Efficiency Directive

The operator has submitted a cost-benefit assessment of opportunities for high efficiency co-generation within the Isle of Portland in which they calculated net present value. If the NPV is positive (i.e. any number more than zero) it means that the investors will make a rate of return that makes the scheme commercially viable. A negative NPV means that the project will not be commercially viable. The Applicant's assessment showed a net present value of -2.44 which demonstrates that operating as a high-efficiency cogeneration installation will not be financially viable. We agree with the applicant's assessment and will not require the installation to operate as a high-efficiency cogeneration installation.

The cost-benefit assessment considered opportunities within the Isle of Portland only, rather than within 15km of the installation. Given the local geography and the difficulties this would present in connecting to the mainland we agree with this approach.

(viii) Permit conditions concerning energy efficiency

Pre-operational condition PO2 requires the Operator to carry out a comprehensive review of the available heat recovery options prior to commissioning, in order to ensure that waste heat from the plant is recovered as far as possible.

Conditions 1.2.2 and 1.2.3 have also been included in the Permit, which require the Operator to review the options available for heat recovery on an ongoing basis, and to provide and maintain the proposed steam/hot water pass-outs.

The Operator is required to report energy usage and energy generated under condition 4.2 and Schedule 5. The following parameters are required to be reported: total electrical energy generated; electrical energy exported; total energy usage and energy exported as heat (if any). Together with the total MSW burned per year, this will enable the Environment Agency to monitor energy recovery

efficiency at the Installation and take action if at any stage the energy recovery efficiency is less than proposed.

There are no site-specific considerations that require the imposition of standards beyond indicative BAT, and so the Environment Agency accepts that the Applicant's proposals represent BAT for this Installation.

4.3.8 Efficient use of raw materials

Having considered the information submitted in the Application, we are satisfied that the appropriate measures will be in place to ensure the efficient use of raw materials and water.

The Operator is required to report with respect to raw material usage under condition 4.2.2 and Schedule 4, including consumption of lime, activated carbon and ammonia used per tonne of waste burned. This will enable the Environment Agency to assess whether there have been any changes in the efficiency of the air pollution control plant, and the operation of the SNCR to abate $NO_x$. These are the most significant raw materials that will be used at the Installation, other than the waste feed itself (addressed elsewhere). The efficiency of the use of auxiliary fuel will be tracked separately as part of the energy reporting requirement under condition 4.2.2. Optimising reagent dosage for air abatement systems and minimising the use of auxiliary fuels is further considered in the section on BAT.

4.3.9 Avoidance, recovery or disposal with minimal environmental impact of wastes produced by the activities

This requirement addresses wastes produced at the Installation and does not apply to the waste being treated there. The principal waste streams the Installation will produce are bottom ash and air pollution control residues.

The first objective is to avoid producing waste at all. Waste production will be avoided by achieving a high degree of burnout of the ash in the furnace, which results in a material that is both reduced in volume and in chemical reactivity. Condition 3.1.3 and associated Table S3.5 specify limits for total organic carbon (TOC) of <3% or loss on ignition (LOI) of <5% in bottom ash. Compliance with this limit will demonstrate that good combustion control and waste burnout is being achieved in the furnaces and waste generation is being avoided where practicable.

Incinerator bottom ash (IBA) will normally be classified as non-hazardous waste. However, IBA is classified on the European List of Wastes as a "mirror entry", which means IBA is a hazardous waste if it possesses a hazardous property relating to the content of dangerous substances. Monitoring of incinerator ash will be carried out in accordance with the requirements of Article 53(3) of IED. Classification of IBA for its subsequent use or disposal is controlled by other legislation and so is not duplicated within the permit.

Air pollution control (APC) residues from flue gas treatment are hazardous waste and therefore must be sent for disposal to a landfill site permitted to accept

hazardous waste, or to an appropriately permitted facility for hazardous waste treatment. The amount of APC residues is minimised through optimising the performance of the air emissions abatement plant.

To ensure that the IBA residues are adequately characterised, pre-operational condition PO3 requires the Operator to provide a written plan for approval detailing the ash sampling protocols. Table S3.5 requires the Operator to carry out an ongoing programme of monitoring.

The Application proposes that bottom ash will be transported off-site to a suitably licensed waste treatment facility for recovery/disposal. There will be no bottom ash treatment undertaken at the installation.

Having considered the information submitted in the Application, we are satisfied that the waste hierarchy referred to in Article 4 of the WFD will be applied to the generation of waste and that any waste generated will be treated in accordance with this Article.

We are satisfied that waste from the Installation that cannot be recovered will be disposed of using a method that minimises any impact on the environment. Standard condition 1.4.1 will ensure that this position is maintained.

4.3.10 Climate change adaptation

We have assessed the climate change adaptation risk assessment.

We consider the climate change adaptation risk assessment is satisfactory.

# 5 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 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.

## 5.1 Assessment Methodology

### 5.1.1 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.

### 5.1.2 Use of Air Dispersion Modelling

For incineration applications, we normally require the Applicant 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). 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** process contribution is less than **1%** of the relevant ES; and
- the **short-term** process contribution is less than **10%** of the relevant ES.

The **long term** 1% process contribution insignificance screening 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 health and the environment.

The **short term** 10% process contribution insignificance screening 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 health and the environment.

Where an emission is screened out in this way, we would normally consider that the Applicant's proposals for the prevention and control of the emission to be 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 exceedances of the relevant ES are likely. This is done through detailed audit and review of the Applicant's air dispersion modelling taking background concentrations and modelling uncertainties into account. Where an exceedance of an AAD 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.

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 of 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.

## 5.2 Assessment of Impact on Air Quality

The Applicant's assessment of the impact on air quality in relation to emissions from the main stack (chimney) via emission point A1 is set out in Appendix D of the Application, and in Annex A of their response to our Schedule 5 Notice dated 4th November 2021. Annex B of the Schedule 5 Notice response contains the Applicant's assessment of the impact on air quality in relation to emissions from the on-site emergency diesel generator (EDG) via emission point A2.

The assessment comprises:

- Dispersion modelling of emissions to air from the operation of the incinerator.
- A study of the impact of emissions on nearby sensitive habitat / conservation sites.

The Applicant also submitted an assessment of emissions associated with the import and export of materials during the construction (traffic) and operational phases (traffic and shipping). These assessments have not been considered as these are essentially matters for the local planning authority when considering the parallel application for planning permission, and outside the scope of our determination under the Environmental Permitting Regulations.
This section of the decision document deals primarily with the dispersion modelling of emissions to air from the incinerator main stack and its impact on local air quality. The impact on conservation sites is considered in section 5.4. Section 5.7 of the decision document considers the dispersion modelling and impact assessment of emissions to air from the emergency diesel generator.

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon local conservation and habitat sites and human health. These assessments predict the potential effects on local air quality from the Installation's stack emissions using the ADMS 5.2 dispersion model, which is a commonly used computer model for regulatory dispersion modelling. The model used 5 years of data collected from the weather station at Portland meteorological recording station located approximately 5km to the south-west of the installation (at the National Coastwatch site), between 2014 and 2018. The Application states that alternative weather data from closer

monitoring stations at Portland harbour were considered but that these datasets lacked all the variables needed for modelling purposes. The Applicant therefore considered Portland meteorological recording station to be the closest and most representative station available. We believe this is an appropriate location based on the predominant south westerly winds influenced by the sea, and that the data used by the Applicant is likely to be reasonably representative of the region. However, in addition to this meteorological data, in reviewing the Applicant's assessment we also considered data from Portland Heliport located approximately 1.5km north-west of the installation. We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. We consider that these are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants. This did not materially affect the predictions and we are satisfied that the Applicant's conclusions can be used for permit determination.

The impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling. This is considered further in Section 5.2.4.

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

- First, they assumed that the ELVs in the Permit would be the maximum permitted by Article 15(3), Article 46(2) and Annex VI of the IED. These substances are:
    - Oxides of nitrogen ($NO_x$), expressed as $NO_2$
    - Total dust
    - Carbon monoxide (CO)
    - Sulphur dioxide ($SO_2$)
    - Hydrogen chloride (HCl)
    - Hydrogen fluoride (HF)
    - Metals (Cadmium, Thallium, Mercury, Antimony, Arsenic, Lead, Chromium, Cobalt, Copper, Manganese, Nickel and Vanadium)
    - Polychlorinated dibenzo-para-dioxins and polychlorinated dibenzo furans (referred to as dioxins and furans)
    - Gaseous and vaporous organic substances, expressed as Total Organic Carbon (TOC)
    - Ammonia ($NH_3$)

- Second, they assumed that the Installation operates continuously at the relevant long-term or short-term ELVs, i.e. the maximum permitted emission rate.

- Metals were considered in more detail as summarised in section 5.2.3 of this decision document.

- Third, the model also considered emissions of pollutants not covered by Annex VI of IED, specifically, polycyclic aromatic hydrocarbons (PAH) and Polychlorinated biphenyls (PCBs). Emission rates used in the modelling have been taken from the Environment Agency public register where the highest recorded emission concentration of Benzo(a)pyrene (PAH) was used, and from

the Waste Incineration BREF for PCBs. Both are considered further in section 5.2.5.

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

Background pollutant levels were based on local and national air quality monitoring data and national modelled background concentrations.

As well as calculating the peak ground level concentration, the Applicant has modelled 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's modelling specialists to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further 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. We have also audited the air quality and human health impact assessment and similarly agree that the conclusions drawn in the reports were acceptable.

The Applicant's modelling predictions are summarised in the following sections.

### 5.2.1 Assessment of Air Dispersion Modelling Outputs

The Applicant's modelling predictions are summarised in the tables below.

The Applicant's modelling predicted peak ground level exposure to pollutants in ambient air and at discrete receptors. In the tables below we have conservatively assumed that the maximum concentrations occur at the location of receptors.

As part of our checks, we carry out sensitivity analysis of the data provided and conduct our own check modelling to ensure that the applicant's modelling predictions are reliable.

Whilst we have used the Applicant's modelling predictions in the table below, we have made our own simple verification calculation of the percentage process contribution and predicted environmental concentration. These are the numbers shown in the tables below and so may be very slightly different to those shown in the Application. Any such minor discrepancies do not materially impact on our conclusions.

In 2021 New Environmental Assessment Levels (EALs) were published in our guidance for arsenic (changing from 3 to 6 ng/Nm$^3$ as annual averages) and chromium VI (changing from 0.0002 to 0.00025 µg/m$^3$ as annual averages), Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk).

The Applicant assessed emissions of these pollutants against the old standards. As the new EALs are higher than the previous ones, the predicted impact will be lower than indicated in the Application. Therefore, the Applicant elected not to re-consider these. For these pollutants we have shown the Applicant's modelled PC but compared it with the new environmental standards. These are the numbers shown in the tables below and while they may differ slightly from those shown in the Application these differences do not materially impact on our conclusions.

The Applicant also considered the higher (now superseded) ES for PM2.5 of 25 (now 20). We have considered the lower EAL in our assessment. A new EAL has also been published for benzene (changing from 195 µg/m$^3$ hourly to 30 µg/m$^3$ daily). The Applicant used the hourly EAL, however we have considered the daily EAL in our assessment. This is shown in the table below.

Also, during determination new EALs were implemented for a number of pollutants including some metals. The values were updated on the GOV.UK risk assessment page on 20 November 2023, Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk).These updated EALs are not shown in the tables below, however, we checked the Applicant's modelling against these new EALs and carried out our own screening checks. We have assessed the normal operations of the facility at the BAT-AELs. The conclusions of our assessment can be found in Sections 5.2.2 and 5.2.3 below.

There are also slight discrepancies in the ESs used by the applicant for PCBs (annual) and PAH (annual). For these pollutants we have shown the Applicant's modelled PC but compared it with the published environmental standards. The numbers may differ slightly from those shown in the Application, but these differences do not impact on our conclusions.

| **Pollutant (Non-metals)** | **Environmental Standard (ES)** | | **Back-ground** | **Process Contribution (PC)** | | **Predicted Environmental Concentration (PEC)** | |
|---|---|---|---|---|---|---|---|
| | **µg/m$^3$** | **Reference period** | **µg/m$^3$** | **µg/m$^3$** | **% of EAL** | **µg/m$^3$** | **% of EAL** |
| $NO_2$ | 40 | Annual Mean | 22.02 | 0.77 | 1.93 | 22.79 | 56.98 |
| | 200 | 99.79th %ile of 1-hour means | 44.04 | 79.84 | 39.92 | 123.88 | 61.94 |
| $PM_{10}$ | 40 | Annual Mean | 14.74 | 0.05 | 0.13 | 14.79 | 36.98 |
| | 50 | 90.41st %ile of 24-hour means | 29.48 | 0.14 | 0.28 | 29.62 | 59.24 |

| Pollutant (Non-metals) | Environmental Standard (ES) | | Back-ground | Process Contribution (PC) | | Predicted Environmental Concentration (PEC) | |
|---|---|---|---|---|---|---|---|
| | µg/m$^3$ | Reference period | µg/m$^3$ | µg/m$^3$ | % of EAL | µg/m$^3$ | % of EAL |
| $PM_{2.5}$ | 20 | Annual Mean | 8.68 | 0.05 | 0.25 | 8.73 | 43.65 |
| $SO_2$ | 266 | 99.9th %ile of 15-min means | 6.64 | 49.16 | 18.48 | 55.80 | 20.98 |
| | 350 | 99.73rd %ile of 1-hour means | 6.64 | 39.53 | 11.29 | 46.17 | 13.19 |
| | 125 | 99.18th %ile of 24-hour means | 6.64 | 2.38 | 1.90 | 9.02 | 7.22 |
| HCl | 750 | 1-hour average | 1.42 | 17.53 | 2.34 | 18.95 | 2.53 |
| HF | 16 | Monthly average | 2.35 | 0.01 | 0.06 | 2.36 | 14.75 |
| | 160 | 1-hour average | 4.7 | 1.17 | 0.73 | 5.87 | 3.67 |
| CO | 10000 | Maximum daily running 8-hour mean | 418 | 26.97 | 0.27 | 444.97 | 4.45 |
| | 30000 | 1-hour average | 418 | 43.82 | 0.15 | 461.82 | 1.54 |
| TOC Note 1 | 2.25 | Annual Mean | 0.09 | 0.09 | 4.00 | 0.18 | 8.00 |
| | 30 | 24-hour average | 0.54 | 5.84 | 19.47 | 6.38 | 21.27 |
| PAH Note 2 | 0.00025 | Annual Mean | 0.00098 | 0.00000096 | 0.38 | 0.0010 | 392.38 |
| $NH_3$ | 180 | Annual Mean | 0.82 | 0.07 | 0.04 | 0.89 | 0.49 |
| | 2500 | 1-hour average | 1.64 | 2.34 | 0.09 | 3.98 | 0.16 |

| Pollutant (Non-metals) | Environmental Standard (ES) | | Back-ground | Process Contribution (PC) | | Predicted Environmental Concentration (PEC) | |
|---|---|---|---|---|---|---|---|
| | µg/m$^3$ | Reference period | µg/m$^3$ | µg/m$^3$ | % of EAL | µg/m$^3$ | % of EAL |
| PCBs | 0.2 | Annual Mean | 0.00013 | 0.00005 | 0.03 | 0.0002 | 0.09 |
| | 6 | 1-hour average | 0.00026 | 0.00146 | 0.02 | 0.00172 | 0.03 |

1. TOC as 1,3 butadiene for long term and benzene for short term
2. PAH as benzo[a]pyrene

| Pollutant (Metals) | Environmental Standard (ES) | | Back-ground | Process Contribution (PC) Note 1 | | Predicted Environmental Concentration (PEC)r | |
|---|---|---|---|---|---|---|---|
| | ng/m$^3$ | Reference period | ng/m$^3$ | ng/m$^3$ | % of EAL | ng/m$^3$ | % of EAL |
| Cd | 5 | Annual mean | 0.57 | 0.18 | 3.60 | 0.75 | 15.00 |
| Hg | 250 | Annual mean | 2.8 | 0.18 | 0.07 | 2.98 | 1.19 |
| | 7500 | 1-hour average | 5.6 | 10.22 | 0.14 | 15.82 | 0.21 |
| Sb | 5000 | Annual mean | - | 2.75 | 0.06 | - | - |
| | 150000 | 1-hour average | - | 104.54 | 0.07 | - | - |
| Pb | 250 | Annual mean | 9.8 | 2.75 | 1.10 | 12.55 | 5.02 |
| Cu | 10000 | Annual mean | 33 | 2.75 | 0.03 | 35.75 | 0.36 |
| | 200000 | 1-hour average | 66 | 104.54 | 0.05 | 170.54 | 0.09 |
| Mn | 150 | Annual mean | 36 | 2.75 | 1.83 | 38.75 | 25.83 |
| | 1500000 | 1-hour average | 72 | 104.54 | 0.01 | 176.54 | 0.01 |
| V | 5000 | Annual mean | 1.70 | 2.75 | 0.06 | 4.45 | 0.09 |
| | 1000 | 24-hr average | 3.4 | 104.54 | 10.45 | 107.94 | 10.79 |

| Pollutant (Metals) | Environmental Standard (ES) | | Back-ground | Process Contribution (PC) Note 1 | | Predicted Environmental Concentration (PEC)r | |
|---|---|---|---|---|---|---|---|
| | ng/m$^3$ | Reference period | ng/m$^3$ | ng/m$^3$ | % of EAL | ng/m$^3$ | % of EAL |
| As | 6 | Annual mean | 1.1 | 2.75 | 45.83 | 3.85 | 64.17 |
| Cr (II)(III) | 5000 | Annual mean | 39 | 2.75 | 0.06 | 41.75 | 0.84 |
| | 150000 | 1-hour average | 78 | 104.54 | 0.07 | 182.54 | 0.05 |
| Cr (VI) | 0.25 | Annual mean | 7.80 | 2.75 | 1100.00 | 10.55 | 4220.0 |
| Ni | 20 | Annual mean | 2.7 | 2.75 | 13.75 | 5.45 | 27.25 |
| Note 1: Where short term PC is given as 104.54 and/or long term PC given as 104.54 modelling has been based on the assumption that metals are emitted at combined metal limit. | | | | | | | |

During our assessment we noted an error in the Applicant's figures for the calculated PEC for short term impacts where the PC of 104.54 had been used. We have substituted our own figures in the table above (calculated using the background and PC figures provided by the Applicant). These differences do not impact on our conclusions.

(i) Screening out emissions which are insignificant

From the tables above the following emissions can be screened out as insignificant in that the process contribution is < 1% of the long term ES and <10% of the short term ES. These are:

- $PM_{10}$, $PM_{2.5}$, HCl, HF, CO, PAH, $NH_3$, PCB's, Hg, Sb, Cu, and Cr (II)(III)

Although the PC for PAH screens out, in that it is <1% of the long term ES, we note that the PEC exceeds 100% of the short term ES. It is considered further in section 5.2.2.

Therefore, we consider the Applicant's proposals for preventing and minimising the emissions of these substances to be BAT for the Installation subject to the detailed audit referred to below.

(ii) Emissions unlikely to give rise to significant pollution

Also, from the tables above the following emissions (which were not screened out as insignificant) have been assessed as being unlikely to give rise to significant pollution in that the predicted environmental concentration is less than 100% (taking expected modelling uncertainties into account) of both the long term and short term ES.

- $NO_2$, $SO_2$, TOC, Cd, Pb, Mn, V, As, and Ni

For these emissions, we have carefully scrutinised the Applicant's proposals to ensure that they are applying the Best Available Techniques to prevent and minimise emissions of these substances. This is reported in section 6 of this document.

(iii) Emissions requiring further assessment

Finally, from the tables above the following emissions are considered to have the potential to give rise to pollution in that the Predicted Environmental Concentration exceeds 100% of the long term or short term ES.

- Cr (VI)

This substance is considered further in section 5.2.3.

5.2.2 Consideration of key pollutants

(i) Nitrogen dioxide ($NO_2$)

The impact on air quality from $NO_2$ emissions has been assessed against the ES of 40 $\mu g/m^3$ as a long term annual average and a short term hourly average of 200 $\mu g/m^3$. The model assumes a 70% $NO_X$ to $NO_2$ conversion for the long term and 35% for the short term assessment in line with Environment Agency guidance on the use of air dispersion modelling.

The above tables show that the peak long term PC is greater than 1% of the ES and therefore cannot be screened out as insignificant. Even so, from the table above, the emission is not expected to result in the ES being exceeded. The peak short term PC is less than 10% of the ES and so can be screened out as insignificant.

(ii) Particulate matter $PM_{10}$ and $PM_{2.5}$

The impact on air quality from particulate emissions has been assessed against the ES for $PM_{10}$ (particles of 10 microns and smaller) and $PM_{2.5}$ (particles of 2.5 microns and smaller). For $PM_{10}$, the ES are a long term annual average of 40 $\mu g/m^3$ and a short term daily average of 50 $\mu g/m^3$. For $PM_{2.5}$ the ES of 20 $\mu g/m^3$ as a long-term annual average was used, having changed from 25 $\mu g/m^3$ in 2020.

The Applicant's predicted impact of the Installation against these ESs is shown in the tables above. The assessment assumes that **all** particulate emissions are present as $PM_{10}$ for the $PM_{10}$ assessment and that **all** particulate emissions are present as $PM_{2.5}$ for the $PM_{2.5}$ assessment.

The above assessment is considered to represent a worst case assessment in that: -

- It assumes that the plant emits particulates continuously at the IED Annex VI limit for total dust, whereas actual emissions from similar plant are normally lower.
- It assumes all particulates emitted are below either 10 microns ($PM_{10}$) or 2.5 microns ($PM_{2.5}$), when some are expected to be larger.

We have reviewed the Applicant's particulate matter impact assessment and are satisfied in the robustness of the Applicant's conclusions.

The above assessment shows that the predicted process contribution for emissions of $PM_{10}$ is below 1% of the long term ES and below 10% of the short term ES and so can be screened out as insignificant. Therefore, we consider the Applicant's proposals for preventing and minimising the emissions of particulates to be BAT for the Installation.

The above assessment also shows that the predicted process contribution for emissions of $PM_{2.5}$ is also below 1% of the ES. Therefore the Environment Agency concludes that particulate emissions from the installation, including emissions of $PM_{10}$ or $PM_{2.5}$, will not give rise to significant pollution.

There is currently no emission limit prescribed nor any continuous emissions monitor for particulate matter specifically in the $PM_{10}$ or $PM_{2.5}$ fraction. Whilst the Environment Agency is confident that current monitoring techniques will capture the fine particle fraction ($PM_{2.5}$) for inclusion in the measurement of total particulate matter, an improvement condition (IC2) has been included that will require a full analysis of particle size distribution in the flue gas, and hence determine the ratio of fine to coarse particles. In the light of current knowledge and available data however the Environment Agency is satisfied that the health of the public would not be put at risk by such emissions, as explained in section 5.3.3.

(iii) Acid gases, $SO_2$, HCl and HF

From the tables above, emissions of HCl and HF can be screened out as insignificant in that the process contribution is <10% of the short term ES. There is no long term ES for HCl. HF has 2 assessment criteria – a 1-hr ES and a monthly EAL – the process contribution is <1% of the monthly EAL and so the emission screens out as insignificant if the monthly ES is interpreted as representing a long term ES.

There is no long term EAL for $SO_2$ for the protection of human health. Protection of ecological receptors from $SO_2$ for which there is a long term ES is considered in section 5.4. There are three short term ES, hourly of 350 $\mu g/m^3$, 15–minute of 266 $\mu g/m^3$ and daily of 125 $\mu g/m^3$.

From the above table, whilst $SO_2$ emissions cannot be screened out as insignificant, the Applicant's modelling shows that the Installation is unlikely to result in a breach of the ES. The Applicant is required to prevent, minimise and control $SO_2$ emissions using BAT, this is considered further in Section 6. We are satisfied that $SO_2$ emissions will not result in significant pollution.

(iv) Emissions to Air of CO, VOCs, PAHs, PCBs, Dioxins and $NH_3$

The above tables show that for CO emissions, the peak short term PC is less than 10% of the ES and so can be screened out as insignificant. Therefore, we consider the Applicant's proposals for preventing and minimising the emissions of this substance to be BAT for the Installation.

The above tables show that for VOC emissions, the peak long term PC is greater than 1% of the ES and therefore cannot be screened out as insignificant. Even so, from the table above, the emission is not expected to result in the ES being exceeded. The Applicant has used the ES for 1,3 butadiene for their assessment of the impact of long term emissions of VOC. This is based on 1,3 butadiene having the lowest ES of organic species likely to be present in VOC (other than PAH, PCBs, dioxins and furans). This is a conservative assessment with the actual impact likely to be lower. New EALs for 1,3 butadiene were published on GOV.uk in November 2023. We checked the Applicants modelling against these new EALs and carried out our own screening checks. We are satisfied that the new EALs do not change the conclusions of our audit.

The above tables show that for PCB emissions, the maximum long term PC is less than 1% of the ES and the maximum short term PC is less than 10% of the ES for PCBs and so can be screened out as insignificant. Therefore, we consider the Applicant's proposals for preventing and minimising the emissions of these substances to be BAT for the Installation.

The above tables show that for PAH emissions, the maximum long term PC is less than 1% of the ES and therefore can be screened out as insignificant. However, from the table above, the PEC exceeds 100% of the short term ES. The contribution from the Installation is negligible and the background is already above the ES. The Applicant is required to prevent, minimise and control emissions using the best available techniques; this is considered further in Section 6.

The impact from VOCs was based on the emission limit set in the permit for total organic carbon. The Applicant has also used the ES for benzo[a]pyrene (BaP) for their assessment of the impact of PAH. We agree that the use of the BaP ES is sufficiently precautionary.

There is no ES for dioxins and furans as the principal exposure route for these substances is by ingestion and the risk to human health is through the accumulation of these substances in the body over an extended period of time. This issue is considered in more detail in section 5.3.

From the tables above all the other emissions can be screened out as insignificant in that the process contribution is < 1% of the long term ES and <10% of the short term ES.

The ammonia emission is based on a release concentration of 8 $mg/m^3$. We are satisfied that this level of emission is consistent with the operation of a well controlled SNCR $NO_x$ abatement system. This limit was proposed by the Applicant and is tighter than the BREF limit of 10 $mg/m^3$.

(V) Summary

For the above emissions to air, for those emissions that do not screen out, we have carefully scrutinised the Applicant's proposals to ensure that they are applying the BAT to prevent and minimise emissions of these substances. This is reported in section 6 of this document. Therefore, we consider the Applicant's proposals for preventing and minimising emissions to be BAT for the Installation. Dioxins and furans are considered further in section 5.3.2.

5.2.3 Assessment of Emission of Metals

The Applicant has assessed the impact of metal emissions to air, as previously described.

There are three sets of BAT AELs for metal emissions:

- An emission limit value of 0.02 mg/m$^3$ for mercury and its compounds (formerly WID group 1 metals).
- An aggregate emission limit value of 0.02 mg/m$^3$ for cadmium and thallium and their compounds (formerly WID group 2 metals).
- An aggregate emission limit of 0.3 mg/m$^3$ for antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel and vanadium and their compounds (formerly WID group 3 metals).

In addition, the UK is a Party to the Heavy Metals Protocol within the framework of the UN-ECE Convention on long-range trans-boundary air pollution. Compliance with the IED Annex VI emission limits for metals along with the Application of BAT also ensures that these requirements are met.

In section 5.2.1 above, the following emissions of metals were screened out as insignificant:

- Hg, Sb, Cu, and Cr (II)(III)

Also in section 5.2.1, the following emissions of metals whilst not screened out as insignificant were assessed as being unlikely to give rise to significant pollution:

- Cd, Pb, Mn, V, As, and Ni

This left emissions of Cr (VI) requiring further assessment. For all other metals, the Applicant has concluded that exceedances of the EAL for all metals are not likely to occur.

Where the BREF sets an aggregate limit, the Applicant's assessment assumes that each metal is emitted individually at the relevant aggregate emission limit value. This is a something which can never actually occur in practice as it would inevitably result in a breach of the said limit, and so represents a very much worst-case scenario.

For Cr (VI) the Applicant used representative emissions data from other municipal waste incinerators using our guidance note. Please refer to "Guidance to Applicants on Impact Assessment for Group 3 Metals Stack Releases – version 4". Measurement of Chromium (VI) at the levels anticipated at the stack emission points is expected to be difficult, with the likely levels being below the level of detection by the most advanced methods. Data for Cr (VI) was based on total Cr emissions measurements and the proportion of total Cr to Cr (VI) in APC residues.

Based on the above, the following emissions of metals were screened out as insignificant:

- Cr(VI)

During determination new EALs were implemented for a number of pollutants including some metals (Cd, Cr (III), Cu, Hg and Ni). The values were updated on the GOV.UK risk assessment page on 20 November 2023. We have re-assessed the process contributions (PCs) against the updated EALs and carried out our own screening checks. We are satisfied that the new EALs do not change the conclusions of our audit. Assessment of PCs for long-term Cr (III), Cu and Hg, and short-term Hg against the revised EALs show that the PCs screen out as insignificant. Normal operation long-term and short-term PCs for Cd and Ni are likely to be not insignificant against the revised EALs. However, when taking the background concentrations into consideration, the predicted environmental concentrations (PECs) are well below the updated EALs.

The installation has been assessed as meeting BAT for control of metal emissions to air. See section 6 of this document.

Improvement Condition IC6 has been set for the Applicant to confirm this assessment with monitoring data from the Installation.

### 5.2.4 Consideration of Local Factors

#### (i) Impact on Air Quality Management Areas (AQMAs)

No Air Quality Management Areas (AQMAs) have been declared within an area likely to be affected by emissions from the incinerator.

#### (ii) Topography

The site is bordered to the south west by Incline Road, which is a private road within the port that is actively used by port traffic, and a former railway embankment. Cliffs lie to the south and southwest of the site and rise steeply to approximately 147m above ordnance datum (AOD) at their highest point. The area of the cliffs supporting grassland, scrub and woodland habitats rises to approximately 125 m AOD. The site is located at approximately sea level with an 80 m stack height. Inland terrain features are above 1 in 10. Software algorithms will treat this situation differently depending on approximations to atmospheric conditions and whether the plume would have enough momentum to move upwards in its entirety, partially or downwards.

Using AERMOD, our audit results indicated potential exceedances of the environmental standards for observed meteorological data with relatively more frequent north easterly winds. Therefore, we requested the Applicant to provide further evidence, including sensitivity to alternative modelling software and evaluation of the uncertainty to further evidence their conclusions. This was addressed in Annex A of their response to our Schedule 5 Notice dated 4th November 2021. The Applicant presented sensitivity analysis to various input parameters to evaluate uncertainty. They concluded that, except for the choice of modelling software, these do not have a significant effect on the predicted results and the conclusions would be the same if different input parameters were used. The Applicant's sensitivity analysis considered an evaluation of reasonable worst-case predictions based on the ADMS model. We consider that the Applicant's submitted evidence, supporting the ADMS model performance in this specific situation is reasonable. We are satisfied that predicted exceedances based on the AERMOD model (as used in our screening checks) are likely to be unrealistic worst-cases.

As a result of our evaluation and review of the evidence, we found no grounds to disagree with the Applicant's conclusion in this particular situation and are satisfied that the Applicant's conclusions, based on the ADMS model, can be used for permit determination.

(iii) Local weather conditions

During the consultation on the application we received a lot of responses expressing concern over local weather conditions including temperature inversions and whether this would trap emissions leading to increased impacts.

Temperature inversions develop when the air temperature increases with altitude, rather than decreasing as it typically does. They typically occur on clear nights with calm winds. They develop during the night and typically break up a few hours after sunrise. They can also occur in coastal areas where cooler air from the sea can be trapped under a layer of warmer air from the land. The Applicant's ADMS model considered the impact under stable condition type temperature inversions.

Cloud cover affects the boundary layer height, this is considered in the meteorological model treatments. The boundary layer is defined as the part of the atmosphere that directly feels the effect of the earth's surface. Its depth is dependent on the local meteorology. The meteorological data used in both the Applicant's assessment and our audit of the Applicant's dispersion modelling included cloud cover data. Therefore, any influence it will have on dispersion was considered in the assessment.

As a result of our audit, we were satisfied that the Applicant's predictions represented a reasonable worst case and could be used for permit determination. We are still satisfied that there will not be a significant impact on air quality or health when taking into account local weather conditions and the costal location in proximity to the steep incline.

We also received a lot of responses about the suitability of the meteorological data used in the Applicant's modelling and whether it was representative of the conditions at the installation.

The model used 5 years of data collected from the weather station at Portland meteorological recording station located approximately 5km to the south-west of the installation (at the National Coastwatch site), between 2014 and 2018. The Application states that alternative weather data from closer monitoring stations at Portland harbour were considered but that these datasets lacked all the variables needed for modelling purposes. The Applicant therefore considered Portland meteorological recording station to be the closest and most representative station available. We believe this is an appropriate location based on the predominant south westerly winds influenced by the sea, and that the data used by the Applicant is likely to be reasonably representative of the region. However, in addition to this meteorological data, in reviewing the Applicant's assessment we also tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. We consider that these are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants. This did not materially affect the predictions and we are satisfied that the Applicant's conclusions can be used for permit determination.

(iv) Additional sensitive receptor considered: Bibby Stockholm

The Bibby Stockholm ("the barge") left Portland at the end of January 2025; however, it was considered a sensitive receptor during our Permit determination process. We have retained the details of our assessment for this receptor in the Decision Document as a record of that assessment.

The barge was moored within 500 metres of the installation. The barge was considered to be an additional sensitive receptor and as such it needed to be taken into consideration during determination.

Once the location of the Bibby Stockholm was known, we reviewed the Applicant's Air Quality Assessment, and undertook screening checks to confirm if our conclusions could still apply to the location of the barge or if additional modelling was required. The location of the barge is within the domain already modelled by the Applicant's Air Quality Assessment, which was submitted with the application.

We considered that predictions from the Applicant's existing modelling could be used for assessment of potential impacts at the barge and that no additional modelling of emissions to air was required for this receptor. Based on this we concluded that exceedances were unlikely for all pollutants against the environmental standards at the location of the barge.

### 5.2.5 Consideration of Additional Measures to Control Emissions

In the BREF, BAT is regarded as installing Selective Non Catalytic Reduction (SNCR), to control oxides of nitrogen (NOx) emissions, with the corresponding

ELV for ammonia as 10 mg/m$^3$. However, due to the efficiency of the applicant's unit, a limit lower than the BREF is achievable. The applicant has proposed a limit for ammonia which is tighter than the BREF incineration emission limit (8 mg/m$^3$ rather than 10 mg/m$^3$) and this has been used in the assessment, and permit conditions reflect this tighter emission limit.

## 5.3 Human health risk assessment

5.3.1 Our role in preventing harm to human health

The Environment Agency has a statutory role to protect the environment and human health from all processes and activities it regulates. We assessed the effects on human health for this application in the following ways:

### i) Applying Statutory Controls

The plant will be regulated under EPR. These regulations include the requirements of relevant EU Directives, notably, the industrial emissions directive (IED), the waste framework directive (WFD), and ambient air directive (AAD).

The main conditions in an EfW permit are based on the requirements of the IED. Specific conditions have been introduced to specifically ensure compliance with the requirements of Chapter IV. The aim of the IED is to prevent or, where that is not practicable, to reduce emissions to air, water and land and prevent the generation of waste, in order to achieve a high level of protection of the environment taken as a whole. IED achieves this aim by setting operational conditions, technical requirements and emission limit values to meet the requirements set out in Articles 11 and 18 of the IED. These requirements may in some circumstances dictate tighter emission limits and controls than those set out in the BAT conclusions or Chapter IV of IED on waste incineration and co-incineration plants. The assessment of BAT for this installation is detailed in section 6 of this document.

### ii) Environmental Impact Assessment

Industrial activities can give rise to odour, noise and vibration, accidents, fugitive emissions to air and water, releases to air (including the impact on Photochemical Ozone Creation Potential (POCP)), discharges to ground or groundwater, global warming potential and generation of waste. For an installation of this kind, the principal environmental effects are through emissions to air, although we also consider all of the other impacts listed. Section 5.1 and 5.2 above 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 any measures we are requiring to ensure a high level of protection.

### iii) Expert Scientific Opinion

There is a significant amount of literature on whether there are links between operation of incineration plants and effects on health. We have not referenced them here, but we have included information on one of the most recent studies that was

commissioned by the UK Health Security Agency (UKHSA), previously Public Health England (PHE). The overall weight of the evidence is that there is not a significant impact on human health.

UKHSA review research undertaken to examine suggested links between emissions from municipal waste incinerators and effects on health. UKHSA's risk assessment is that modern, well run and regulated municipal waste incinerators are not a significant risk to public health. While it is not possible to rule out adverse health effects from these incinerators completely, any potential effect for people living close by is likely to be very small.

UKHSA keep literature on health effects under review and would inform us if there were any changes to the above position. Similarly, we would consult UKHSA if new evidence was provided to us.

In 2012 the UK Small Area Health Statistics Unit (SAHSU) at Imperial College was commissioned by PHE to carry out a study to extend the evidence base and to provide further information to the public about any potential reproductive and infant health risks from municipal waste incineration (MWIs).

A number of papers have been published by SAHSU since 2012 which show no effect on birth outcomes. One paper in the study looked at exposure to emissions from MWIs in the UK and concluded that exposure was low. Subsequent papers found no increased risk of a range of birth outcomes (including stillbirth and infant mortality) in relation to exposure to $PM_{10}$ emissions and proximity to MWIs, and no association with MWIs opening on changes in risks of infant mortality or sex ratio.

The final part of the study, published on 21/06/19, found no evidence of increased risk of congenital anomalies from exposure to MWI chimney emissions, but a small potential increase in risk of congenital anomalies for children born within ten kilometres of MWIs. The paper does not demonstrate a causal effect, and it acknowledges that the observed results may well be down to not fully adjusting the study for factors such as other sources of pollution around MWIs or deprivation.

UKHSA have stated that 'While the conclusions of the study state that a causal effect cannot be excluded, the study does not demonstrate a causal association and makes clear that the results may well reflect incomplete control for confounding i.e. insufficiently accounting for other factors that can cause congenital anomalies, including other sources of local pollution. This possible explanation is supported by the fact no increased risk of congenital anomalies was observed as a result of exposure to emissions from an incinerator.'

Following this study, UKHSA have further stated that their position remains that modern, well run and regulated municipal waste incinerators are not a significant risk to public health.

We agree with the view stated by the UKHSA. We ensure that permits contain conditions which require the installation to be well-run and regulate the installation to ensure compliance with such permit conditions.

## iv) Health Risk Models

Comparing the results of air dispersion modelling as part of the Environmental Impact assessment against European and national air quality standards effectively makes a health risk assessment for those pollutants for which a standard has been derived. These air quality standards have been developed primarily to protect human health via known intake mechanisms, such as inhalation and ingestion. Some pollutants, such as dioxins, furans and dioxin like PCBs, have human health impacts at lower ingestion levels than lend themselves to setting an air quality standard to control against. For these pollutants, a different human health risk model is required which better reflects the level of dioxin intake.

Models are available to predict the dioxin, furan and dioxin like PCBs intake for comparison with the Tolerable Daily Intake (TDI) recommended by the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment, known as COT. These include the HHRAP model.

HHRAP has been developed by the US EPA to calculate the human body intake of a range of carcinogenic pollutants and to determine the mathematical quantitative risk in probabilistic terms. In the UK, in common with other European countries, we consider a threshold dose below which the likelihood of an adverse effect is regarded as being very low or effectively zero.

The TDI is the amount of a substance that can be ingested daily over a lifetime without appreciable health risk. It is expressed in relation to bodyweight to allow for different body size, such as for adults and children of different ages. In the UK, the COT has set a TDI for dioxins, furans and dioxin like PCBs of 2 picograms WHO-TEQ/kg-body weight/day (a picogram is a millionth of a millionth ($10^{-12}$) of a gram).

In addition to an assessment of risk from dioxins, furans and dioxin like PCBs, the HHRAP model enables a risk assessment from human intake of a range of heavy metals. In principle, the respective ES for these metals are protective of human health. It is not therefore necessary to model the human body intake.

The Committee on the Medical Effects of Air Pollution (COMEAP) developed a methodology based on the results of time series epidemiological studies which allows calculation of the public health impact of exposure to the classical air pollutants ($NO_2$, $SO_2$ and particulates) in terms of the numbers of “deaths brought forward” and the “number of hospital admissions for respiratory disease brought forward or additional”. Defra reviewed this methodology and concluded that the use of the COMEAP methodology is not generally recommended for modelling the human health impacts of individual installations.

Our recommended approach is therefore the use of the methodology set out in our guidance for comparison for most pollutants (including metals) and dioxin intake modelling using the HHRAP model as described above for dioxins, furans and dioxin like PCBs. Where an alternative approach is adopted for dioxins, we check the predictions ourselves.

## v) Consultations

As part of our normal procedures for the determination of a permit application, we consult with Local Authorities, Local Authority Directors of Public Health, FSA and UK Health Security Agency (previously PHE). We also consult the local communities who may raise health related issues. All issues raised by these consultations are considered in determining the application as described in Annex 4 of this document.

5.3.2 Assessment of Intake of Dioxins, Furans and Dioxin like PCBs

For dioxins, furans and dioxin like PCBs, the principal exposure route is through ingestion, usually through the food chain, and the main risk to health is through accumulation in the body over a period of time.

The human health risk assessment calculates the dose of dioxins and furans that would be received by local receptors if their food and water were sourced from the locality where the deposition of dioxins, furans and dioxin like PCBs is predicted to be the highest. This is then assessed against the Tolerable Daily Intake (TDI) levels established by the COT of 2 picograms I-TEQ / Kg bodyweight/ day.

The results of the Applicant's assessment showed that the predicted daily intake of dioxins, furans and dioxin like PCBs at all receptors, resulting from emissions from the proposed facility, were significantly below the recommended TDI levels. The Applicant's assessment presented intake values as a ratio, when considered as a percentage they were below the 10% UKHSA threshold criteria when compared against the UK COT TDI.

The Applicant's assessment reports PCs at the most impacted sensitive receptor. During our audit, we also considered intake from all pathways at the maximum at the grid, assuming that food is grown and sourced locally at the maximum predicted point of impact within the modelling domain. We have assumed that food is grown and sourced locally from the maximum predicted point of impact within the modelling domain for a conservative assessment.

As part of the consultation process on the planning application for the Portland Energy Recovery Facility, the former Public Health England (PHE) requested the assessment of impacts of dioxins, furans and dioxins-like-PCBs against the tolerable daily intake (TDI). As a result, the consultant undertook an assessment to supplement the original Human Health Risk Assessment (HHRA). This supplementary assessment was submitted to the Environment Agency on 13 May 2022. We have evaluated whether the complementary submission would affect our audit conclusions. The Applicant compares intakes against the UK Committee on Toxicity (COT) TDI of 2 pg WHO-TEQ/kg(BW)/day. The Applicant's values presented at the most impacted sensitive receptor are below the 10% threshold criteria (i.e., a maximum of 0.18% of the TDI). In the previous HHRA submitted with the application, intake values were presented as a ratio and were also below the 10% threshold criteria when compared against the UK COT TDI as a percentage. Our checks indicate that the supplementary assessment does not change our previous conclusion regarding impacts from dioxins, furans and dioxin-like PCBs. Although we do not necessarily agree with their exact numerical

predictions, we agree with consultant's conclusions. The results of the Applicant's assessment of dioxin intake are detailed in the table below (worst – case results for each category are shown).

| Receptor type | adult | child |
|---|---|---|
| Agricultural | 0.0409 | 0.1007 |
| Residential | 0.0089 | 0.0310 |

Calculated daily intake of dioxins (maximum at a receptor) resulting from the operation of the proposed facility as % of TDI

The FSA has reported that dietary studies have shown that estimated total dietary intakes of dioxins and dioxin-like PCBs from all sources by all age groups fell by around 50% between 1997 and 2001 and are expected to continue to fall. A report in 2012 showed that Dioxin and PCB levels in food have fallen slightly since 2001. In 2001, the average daily intake by adults in the UK from diet was 0.9 pg WHO-TEQ/kg bodyweight. The additional daily intake predicted by the modelling as shown in the table above is substantially below this figure.

In 2010, FSA studied the levels of chlorinated, brominated and mixed (chlorinated-brominated) dioxins and dioxin-like PCBs in fish, shellfish, meat and eggs consumed in UK. It asked COT to consider the results and to advise on whether the measured levels of these PXDDs, PXDFs and PXBs indicated a health concern ('X' means a halogen). COT issued a statement in December 2010 and concluded that "The major contribution to the total dioxin toxic activity in the foods measured came from chlorinated compounds. Brominated compounds made a much smaller contribution, and mixed halogenated compounds contributed even less (1% or less of TDI). Measured levels of PXDDs, PXDFs and dioxin-like PXBs do not indicate a health concern". COT recognised the lack of quantified TEFs for these compounds but said that "even if the TEFs for PXDDs, PXDFs and dioxin-like PXBs were up to four-fold higher than assumed, their contribution to the total TEQ in the diet would still be small. Thus, further research on PXDDs, PXDFs and dioxin-like PXBs is not considered a priority."

In the light of this statement, we assess the impact of chlorinated compounds as representing the impact of all chlorinated, brominated and mixed dioxins / furans and dioxin like PCBs.

### 5.3.3 Particulates smaller than 2.5 microns

The Operator will be required to monitor particulate emissions using the method set out in Table S3.1 of Schedule 3 of the Permit. This method requires that the filter efficiency must be at least 99.5 % on a test aerosol with a mean particle diameter of 0.3 µm, at the maximum flow rate anticipated. The filter efficiency for larger particles will be at least as high as this. This means that particulate monitoring data effectively captures everything above 0.3 µm and much of what is smaller. It is not expected that particles smaller than 0.3 µm will contribute significantly to the mass release rate / concentration of particulates because of their very small mass, even if present. This means that emissions monitoring data can be relied upon to measure the true mass emission rate of particulates.

Nano-particles are considered to refer to those particulates less than 0.1 µm in diameter ($PM_{0.1}$). Questions are often raised about the effect of nano-particles on human health, in particular on children's health, because of their high surface to volume ratio, making them more reactive, and their very small size, giving them the potential to penetrate cell walls of living organisms. The small size also means there will be a larger number of small particles for a given mass concentration. However the HPA statement (referenced below) says that due to the small effects of incinerators on local concentration of particles, it is highly unlikely that there will be detectable effects of any particular incinerator on local infant mortality.

The HPA (now UKHSA) addresses the issue of the health effects of particulates in their September 2009 statement 'The Impact on Health of Emissions to Air from Municipal Incinerators'. It refers to the coefficients linking $PM_{10}$ and $PM_{2.5}$ with effects on health derived by COMEAP and goes on to say that if these coefficients are applied to small increases in concentrations produced, locally, by incinerators; the estimated effects on health are likely to be small. PHE note that the coefficients that allow the use of number concentrations in impact calculations have not yet been defined because the national experts have not judged that the evidence is sufficient to do so. This is an area being kept under review by COMEAP.

In December 2010, COMEAP published a report on The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom. It says that "a policy which aims to reduce the annual average concentration of $PM_{2.5}$ by 1 µg/m$^3$ would result in an increase in life expectancy of 20 days for people born in 2008." However, "The Committee stresses the need for careful interpretation of these metrics to avoid incorrect inferences being drawn – they are valid representations of population aggregate or average effects, but they can be misleading when interpreted as reflecting the experience of individuals."

UKHSA also point out that in 2007 incinerators contributed 0.02% to ambient ground level $PM_{10}$ levels compared with 18% for road traffic and 22% for industry in general. PHE noted that in a sample collected in a day at a typical urban area the proportion of $PM_{0.1}$ is around 5-10% of $PM_{10}$. It goes on to say that $PM_{10}$ includes and exceeds $PM_{2.5}$ which in turn includes and exceeds $PM_{0.1}$. The National Atmospheric Emissions Inventory (NAEI) figures show that in 2016 municipal waste incineration contributed 0.03% to ambient ground level $PM_{10}$ levels and 0.05% to ambient ground level PM2.5 levels. The 2016 data also shows that road traffic contributed to 5.35% of PM10 and 4.96% of PM2.5 and that domestic wood burning contributed 22.4% to PM10 and 34.3% of PM2.5 levels.

This is consistent with the assessment of this application which shows emissions of $PM_{10}$ to air to be insignificant.

A 2016 paper by Jones and Harrison concluded that 'ultrafine particles (<100nm) in flue gases from incinerators are broadly similar to those in urban air and that after dispersion with ambient air ultrafine particle concentrations are typically indistinguishable from those that would occur in the absence of the incinerator.

We take the view, based on the foregoing evidence, that techniques which control the release of particulates to levels which will not cause harm to human health will

also control the release of fine particulate matter to a level which will not cause harm to human health.

5.3.4 Assessment of Health Effects from the Installation

Our assessment of health impacts is summarised below

i. We have applied the relevant requirements of the Environmental legislation in imposing the permit conditions. We are satisfied that compliance with these conditions will ensure protection of the environment and human health.

ii. In carrying out air dispersion modelling as part of the environmental impact assessment and comparing the PC and PEC with the ES, the Applicant has effectively made a health risk assessment for many pollutants. The ES have been developed primarily to protect human health. The Applicant's assessment of the impact from $PM_{10}$, $PM_{2.5}$, $SO_2$, HCl, HF, CO, PAH, $NH_3$, PCB's, Hg, Sb, Cu, Cr (II)(III) and Cr (VI) have all indicated that the Installation emissions screen out as insignificant; where the impact of emissions of $NO_2$, TOC, Cd, Pb, Mn, V, As, and Ni have not been screened out as insignificant, the assessment still shows that the PEC are well within the ES.

iii. We have assessed the health effects from the operation of this installation in relation to the above (sections 5.3.1 to 5.3.3).

iv. We have reviewed the methodology employed by the Applicant to carry out the health impact assessment.

The Environment Agency has reviewed the methodology employed by the Applicant to carry out the health impact assessment. We are satisfied with the Applicant's conclusions that there will not be a significant impact on health.

Overall, taking into account the conservative nature of the impact assessment (i.e. that it is based upon an individual exposed for a life-time to the effects of the highest predicted relevant airborne concentrations and consuming mostly locally grown food), it was concluded that the operation of the proposed facility will not pose a significant risk to human health.

v. We agree with the conclusion reached by UKHSA that modern, well run and regulated municipal waste incinerators are not a significant risk to public health. While it is not possible to rule out adverse health effects from these incinerators completely, any potential effect for people living close by is likely to be very small.

vi. UKHSA and the Local Authority Director of Public Health were consulted on the Application. They concluded that they had no significant concerns regarding the risk to the health of humans from the installation. The Food

Standards Agency was also consulted during the permit determination process and did not provide a response to our consultation. Details of the responses provided by UKHSA, the Local Authority Director of Public Health and the FSA to the consultation on this Application can be found in Annex 4.

We are therefore satisfied that the Applicant's conclusions presented above are reliable and we conclude that the potential emissions of pollutants including dioxins, furans and metals from the proposed facility are unlikely to have a significant impact on human health.

## 5.4 Impact on protected conservation areas (SPAs, SACs, Ramsar sites and SSSIs and local nature sites)

5.4.1 Sites Considered

The following Habitats sites (i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar) are located within 10Km of the Installation:

- Studland to Portland SAC
- Isle of Portland to Studland Cliffs SAC
- Crookhill Brick Pit SAC
- Chesil & The Fleet SAC
- Chesil Beach & The Fleet SPA and Ramsar

The following Sites of Special Scientific Interest (SSSI) are located within 2Km of the Installation:

- Chesil & The Fleet SSSI
- Isle of Portland SSSI
- Nicodemus Heights SSSI

The Installation is also located within 2km of Chesil Beach and Stennis Ledges Marine Conservation Zone (MCZ).

The following non-statutory local wildlife sites (LWS) are located within 2km of the Installation:

- Portland Heights LWS
- Verne Yeates LWS
- Verne to Grove LWS
- Grove Quarry LWS
- East Weare Camp LWS
- Osprey Quay Bunds LWS
- East Weare Rifle Range LWS

5.4.2 Habitats Assessment

(i) Background levels

The Air Pollution Information System (APIS) confirmed that there had been a mapping error in the ammonia data, also translating to an error in the total nitrogen deposition. Once background levels had been corrected, some sites (including ammonia at the Isle of Portland to Studland Cliffs SAC) now show as exceeding the relevant environmental standards.

We have used the most up-to-date background values as found on the APIS website (2019 data). For consistency, we have taken this approach for all pollutants, including those not affected by the APIS mapping error. Therefore, predicted environmental concentration (PEC) figures may vary from those presented in the Applicant's assessment.

(ii) Consideration of the Studland to Portland and Crookhill Brick Pit SACs

The Applicant did not identify Studland to Portland SAC in their assessment. The SAC lies off the south coast of England, entirely in UK territorial waters. The site is designated to protect reef habitat. It is not anticipated that emissions to air from the installation will significantly impact the marine ecosystem. Any pollutants from emissions of atmospheric gases from the installation will be regularly removed by tidal action and it is considered unlikely that there would be an adverse impact from nitrogen deposition or toxic contamination. Specifically for this site, APIS confirms that the designated feature is not sensitive to NOx, ammonia (NH3), SO2, eutrophication (from nutrient deposition), or acidification. We have therefore concluded that it is not sensitive to air pollution from the installation and have not considered it further in our assessment.

The Crookhill Brick Pit SAC is located approximately 7.5km from the installation. It has been identified as a site providing habitat for great crested newts. The listed broad habitat type is described as 'standing open water and canals'. Critical levels/loads are applicable to habitats and flora only. However, if damage to supporting habitats could not be ruled out there could be a consequential effect on dependent fauna.

Although no specific process contributions are given for this SAC within the Applicant's modelling, their assessment confirms that Crookhill Brick Pit SAC is located within an area where process contributions are less than 1% of the long term and 10% of the short-term Critical Levels. APIS does not provide critical loads for this site. See 5.4.2(iii) for further explanation of Critical Loads and Critical levels.

The closest designated site, which has been included in the modelled domain, is the Chesil and The Fleet SAC, SPA and Ramsar. When taking the background into account there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely. The predicted process contribution, plus the background concentration (i.e. PEC) is less than 70% of the environmental

standard. Due to the increased distance and subsequent increased dispersion, we would expect process contributions at the Crookhill Brick Pit SAC to be lower than the maximum process contributions considered for the Chesil Beach and the Fleet sites. Therefore, we conclude 'no likely significant effect' the Crookhill Brick Pit SAC.

Natural England agree with our conclusions for both the Studland to Portland and Crookhill Brick Pit SACs.

(iii) Assessment of emissions from the main stack

The Applicant's Habitats assessment was reviewed by the Environment Agency's technical specialists for modelling, air quality, conservation and ecology technical services, who agreed with the assessment's conclusions, that there would be no likely significant effect on the interest features of the protected sites.

*Consideration of Critical Levels*

Critical Levels are defined as gaseous concentrations of pollutants in the atmosphere, above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge.

| **Site** | **Pollutant** | **Reference period** | **Critical Level ($CL_e$) ($\mu g/m^3$)** | **PC ($\mu g/m^3$) Note 1** | **PC as % $CL_e$** | **Back-ground ($\mu g/m^3$)** | **PEC ($\mu g/m^3$)** | **PEC as % $CL_e$** |
|---|---|---|---|---|---|---|---|---|
| Isle of Portland to Studland Cliffs SAC | $NO_x$ | Annual | 30 | 0.38 | 1.27 | 10.1 | 11.37 | 34.93 |
| | | Daily | 75 | 11.47 | 15.29 | 20.2 | 31.67 | **42.23** |
| | $SO_2$ | Annual | 10 (Note 2) | 0.09 | 0.9 | - | - | - |
| | HF | Weekly | 0.5 | 0.02 | 4 | - | - | - |
| | | Daily | 5 | 0.1 | 2 | - | - | - |
| | $NH_3$ | Annual | 1 (1) | 0.03 | 3 | 1.18 | 1.21 | **121** |
| Chesil / Chesil Beach & The Fleet SAC / SPA / Ramsar | $NO_x$ | Annual | 30 | 0.16 | 0.53 | - | - | - |
| | | Daily | 75 | 4.02 | 5.36 | - | - | - |
| | $SO_2$ | Annual | 20 (Note 3) | 0.09 | 0.45 | - | - | - |
| | HF | Weekly | 0.5 | 0.02 | 4 | - | - | - |
| | | Daily | 5 | 0.03 | 0.6 | - | - | - |
| | $NH_3$ | Annual | 3 (2) | 0.01 | 0.33 | - | - | - |

Note 1: Maximum predicted Process Contribution (PC) within each habitat site.

Note 2: The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have been assigned for this assessment as the presence of these features has been recorded in the Site Management Plan for at least one of the sections of the site.

Note 3: The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have not been assigned for this assessment as the presence of these features has not been recorded.

*Consideration of Critical Loads*

Critical Load relates to the quantity of pollutant deposited from air to the ground. It is defined as a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on sensitive elements of the environment do not occur according to present knowledge.

| **Site** | **Pollutant** | **Critical Load ($CL_o$)** | **PC** Note 1 | **PC as % of $CL_o$** | **Back-ground** | **PEC** | **PEC as % of $CL_o$** |
|---|---|---|---|---|---|---|---|
| Isle of Portland to Studland Cliffs SAC | Nitrogen deposition (kg N/ha/yr) | 15-25 | 0.169 | 1.12 | 11 | 11.168 | **74.45** |
| | Acid deposition (Keq/ha/yr) | $CL_{min}$ N: 0.856<br>$CL_{max}$ N: 4.856<br>$CL_{max}$ S: 4.0 | 0.061 | 1.26 | 1.429 | 1.489 | 30.66 |
| Chesil / Chesil Beach & The Fleet SAC / SPA / Ramsar | Nitrogen deposition (kg N/ha/yr) | 8-10 | 0.073 | 0.91 | - | - | - |
| | Acid deposition (Keq/ha/yr) | $CL_{min}$ N: 0.223<br>$CL_{max}$ N: 2.018<br>$CL_{max}$ S: 1.58 | 0.026 | 1.29 | 1.036 | 1.062 | 52.63 |
| Note 1: Maximum predicted Process Contribution (PC) within each habitat site. | | | | | | | |

In line with our guidance, agreed with Natural England, we concluded no likely significant effect alone or in-combination where:

- The PC is <1% of long term standards and <10% of short term standards; and
- Where the PC >1% of long term standards, the PEC is < 70%

From the tables above we have concluded no likely significant effect alone or in-combination for all pollutants, with the exception of the following at the Isle of Portland to Studland Cliffs SAC:

- short term (daily) NOx
- ammonia
- nutrient nitrogen deposition

We have therefore conservatively concluded there may be a likely significant effect from the above emissions at the Portland to Studland Cliffs SAC and assessed the impacts in further detail.

Daily average nitrogen oxides

The short-term NOx PC is 11.47 µg/m$^3$, which is 15.29% of the daily NOx critical level of 75 µg/m$^3$. The PC is greater than 10% of the critical level. Where the PC is greater than the screening thresholds, the assessment must continue to determine the impact by considering the predicted environmental concentration (PEC). The PEC is the combination of the PC substance to air and the background concentration of the substance which is already present in the environment.

The PECs can be considered as having 'no adverse effect' on the integrity of the site if the assessment has shown that both the following apply:

- proposed emissions comply with associated emission levels (AELs) or the equivalent requirements where there is no AEL; and
- the resulting PECs won't exceed 100% of the environmental standards.

In the absence of monitoring, background concentrations have been obtained using mapped data available via the APIS website. The 1km$^2$ tile which covers the proposed installation, port and part of the Isle of Portland to Studland Cliffs SAC (and Isle of Portland SSSI) already exceeds the environmental criterion (i.e. at 31.3 µg/m$^3$, according to 2019 APIS data).

The Applicant's contour plots can be used to estimate NOx process contributions in this area and the areas of maximum impact for use in the assessment. The modelling shows that in the area with the highest background (i.e. the area already exceeding the environmental criterion) predicted process contributions from the main stack are below the relevant significance screening thresholds for critical levels (<1% of the long term and <10% of the short term). Where the background concentration is currently exceeding the appropriate environmental criterion and the new process contribution will cause an additional small increase, regarded as not significant relative to the background concentration, it is still possible to conclude 'no likely significant effect'. We consider that the small increase in the overall PEC attributed to the PC from the installation is unlikely to have a significant impact.

Areas where the contour plots show the process contributions are likely to exceed the screening thresholds are located in the 1 km$^2$ tiles where NOx backgrounds indicate sufficient headroom. Therefore, exceedances are unlikely. The PEC is 31.67µg/m$^3$ (PC plus twice long-term background), this is 42.23% of the critical level. When taking the background into account there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely. The PEC is below the critical level.

Based on the above, it can be concluded that there will be no likely significant effect in respect of short-term NOx emissions from the main stack. Natural England agrees with our conclusions.

Ammonia

The Applicant's modelling showed that the PC for ammonia is above the 1% insignificance screening threshold level and the background already exceeds the critical level. We have therefore conservatively concluded there may be a likely significant effect due to toxic contamination from ammonia emissions and assessed the impacts in further detail.

The maximum PC for ammonia at the Isle of Portland to Studland Cliffs SAC from the proposed project on its own is calculated as being up to 3% of the relevant critical level. It is noted that the highest PC is predicted over only a relatively small area of the Habitats site (as shown by the Applicant's process contribution contour plots), and at a maximum of 3% of the critical level. We regard this as a small contribution, suggesting that the effect may be low. Where the PC is greater than the thresholds, the assessment must continue to determine the impact by considering the predicted environmental concentration (PEC). The PEC is the combination of the PC substance to air and the background concentration of the substance which is already present in the environment. If the background concentration is currently exceeding the appropriate environmental criterion and the new process contribution will cause an additional small increase regarded as not significant relative to the background concentration it is still possible to conclude 'no likely significant effect'. In the area where the PC is exceeding the 1% screening threshold, the maximum ammonia background concentration for this SAC is 1.18 $\mu g/m^3$ (source APIS 2019 data). Therefore, the background value already exceeds the relevant environmental standard (1 $\mu g/m^3$) by 18%. The background concentration is predicted to exceed the appropriate environmental criterion and the installation process contribution will cause an additional small increase. The predicted PEC for ammonia is 1.21 $\mu g/m^3$. Which is 21% above the critical level. The PC accounts for 2.48% of the total PEC, meaning 97.52% is the background. We consider that the small increase in the overall PEC attributed to the PC from the installation is unlikely to have a significant impact. The scale of the contribution from the installation (concentration and area/size of impact) is limited. Therefore, we concluded that the emissions from the installation will not have an adverse effect on the integrity of the Isle of Portland to Studland Cliffs SAC. Natural England agreed with our assessment and conclusions.

Nutrient Nitrogen Deposition

The PEC is above 70% of the critical load we therefore concluded a likely significant effect. However, the critical load is not exceeded and there remains reasonable headroom. At 74.46%, the PEC is below the nutrient-nitrogen critical load, and it can be concluded that there will be no adverse effect in respect of nutrient nitrogen deposition.

(iv) Assessment of emissions from the emergency diesel generator (EDG)

The installation will also include an EDG. The applicant has not considered the impact of the EDG operation in relation to the annual mean assessment levels.

They conclude that the contribution to annual mean impacts would not be significant due to the limited period of operation. Based on the operating conditions (testing up to 26 hours per year, up to 30 minutes every time, between 8am and 5pm and emergency operation being infrequent), we agree that annual impacts are not likely to be significant.

The modelling has shown that impacts from the EDG occur close to the site. Its impact has therefore been considered on the designated sites closest to the proposed plant (Isle of Portland to Studland Cliffs SAC (and Isle of Portland SSSI)). The contribution from the main stack in this area is minimal as the taller stack height means that the emissions travel further and avoid significant building downwash effects. As a result, the emissions from the EDG and main stack have been considered separately by the applicant. We agree with and have followed this approach in our assessment.

The tables below present the maximum predicted impact at any grid point within the Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI (worst case from the 5 years of meteorological data considered). Both have been considered here as they are primarily overlapping designations. However, impacts have been presented for each site individually because the extents of the designations are slightly different where the greatest impacts from the EDG occur, with the SSSI being slightly closer to the PPP than the SAC

The reference period is daily, we consider that the annual background level is both representative and conservative and therefore appropriate for use in the assessment.

Testing of the EDG would occur at the same time as the operation of the EfW plant. However, it is highly unlikely that a significant contribution from the EfW plant would coincide with the operation of the EDG, or that the conditions which result in the greatest ground level contributions would occur in the same hour due to the significantly different stack heights.

The Applicant's Habitats assessment was reviewed by the Environment Agency's technical specialists for modelling, air quality, conservation and ecology technical services, who agreed with the assessment's conclusions, that there would be no likely significant effect on the interest features of the protected sites. Natural England agrees with our conclusions.

*Consideration of Critical Levels*

Critical Levels are defined as gaseous concentrations of pollutants in the atmosphere, above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge.

The table below presents the maximum predicted impact at any grid point within the Isle of Portland to Studland Cliffs SAC.

| Operation | Pollutant | Reference period | Critical Level ($CL_e$) ($\mu g/m^3$) | PC ($\mu g/m^3$) | PC as % $CL_e$ | Back-ground ($\mu g/m^3$) | PEC ($\mu g/m^3$) | PEC as % $CL_e$ |
|---|---|---|---|---|---|---|---|---|
| Testing | $NO_x$ | Daily | 75 | 32.6 | **43.5** | 34 | 66.6 | 88.9 |
| Emergency | $NO_x$ | Daily | 75 | 78.1 | **104.1** | 34 | 112 | **149.4** |

The table below presents the maximum predicted impact at any grid point within the Isle of Portland to Studland Cliffs SSSI.

| Operation | Pollutant | Reference period | Critical Level ($CL_e$) ($\mu g/m^3$) | PC ($\mu g/m^3$) | PC as % $CL_e$ | Back-ground ($\mu g/m^3$) | PEC ($\mu g/m^3$) | PEC as % $CL_e$ |
|---|---|---|---|---|---|---|---|---|
| Testing | $NO_x$ | Daily | 75 | 38.4 | 51.2 | 34 | 72.40 | 96.5 |
| Emergency | $NO_x$ | Daily | 75 | 113.9 | **151.9** | 34 | 147.9 | **197.2** |

*Consideration of Critical Loads*

The Applicant has not considered the impact of testing and emergency operation for the EDG in relation to the annual mean assessment levels, this includes Critical Loads. They conclude that the contribution to annual mean impacts would not be significant due to the limited period of operation. Based on the operating conditions (testing up to 26 hours per year, up to 30 minutes every time, from 8am to 5pm and emergency operation remains infrequent), we agree that annual impacts are not likely to be significant.

In line with our guidance, agreed with Natural England, we conclude no likely significant effect alone or in-combination where:

- The PC is <1% of long term standards and <10% of short term standards; and
- Where the PC >1% of long term standards, the PEC is < 70%

We have therefore conservatively concluded there may be a likely significant effect for short term NOx emissions and will consider this pollutant further for both operating scenarios.

Testing:

As shown in the table above, for testing operations, The PEC is not predicted to be exceeded at any point in the habitat sites. We can therefore conclude that there will be no adverse effect on site integrity. However, our assessment has highlighted an area of higher uncertainty due to building downwash effects, referred to as the 'cavity region' (see Figure 01). Airflow around buildings is often complex and may create zones of strong turbulence and downward mixing on the lee side, an effect known as building downwash. We have lower confidence in the applicant's predictions for this area and so further consideration is given below. We consider that exceedances of the daily NOx Critical level at the SAC and SSSI are unlikely at locations beyond the cavity region of the site buildings.

Figure 01 shows the approximate location of the proposed buildings, the proposed generator and the 'cavity region'. It also shows the locations of the SAC and SSSI.

Figure 01


Due to these higher uncertainties, we have little confidence in short-term (daily) NOx predictions in the area of the SSSI/SAC located within the 'cavity region' of the buildings. We therefore cannot rule out exceedances of the daily NOx Critical Level of 75µg/m$^3$ in this area. There is limited evidence to quantify uncertainties in modelling predictions in regions of such turbulent flow regimes and, therefore, predictions are highly uncertain. This does not mean that we consider that there will be an exceedance, but that the level of uncertainty in this area is too great to rule out the possibility.

It should be noted that the worst-case impacts in this area would only occur when the wind was coming from the north-east quadrant, and this is infrequent and is against the prevailing wind direction. The emissions from the EDG would need to rise, be taken over the 41m building and then drop into the building cavity region on the other side of the building.

We sought advice from Natural England on the characteristics of this area and whether there were any features present which could be sensitive to short term NOx. Natural England advised the following:

> *In the location you have indicated the SAC and SSSI habitats consist of dense scrub which is a supporting habitat rather than a feature for which the site is designated. In addition this area, which has been scrub for many years, is not an area where Natural England would seek to secure restoration to calcareous grassland (a SAC feature) hence the proposal is not preventing a restoration objective. The applicant has provided information on the location of sensitive lichens and bryophytes and none are recorded from this area of the SAC.*
>
> *Therefore, Natural England can advise the EA that, whilst AQ thresholds are exceeded, there would not be an adverse effect on the SAC either on existing features or compromising the restoration of features in the future.*

Based on the modelling undertaken by the applicant and the further information received from Natural England we are satisfied that it is possible to conclude no likely significant effect/damage on the integrity of the Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI. Natural England agrees with our conclusion.

Emergency operation:

In the event of loss of grid connection, the EDG would run to maintain operation of the abatement and control systems. This would enable a safe shutdown of the incinerator. It is assumed that the typical run time in this scenario would be no more than 4 hours for any one event.

As shown in the above table the maximum 24-hour impact is predicted to exceed the Critical Level of 75 µg/m$^3$. However, this conservatively assumes that the EDG is required for emergency usage during the worst-case weather conditions. The probability of this occurring has been calculated as follows:

1. The dispersion model has been used to determine how many times the contribution from the operation of the EDG during an emergency event is more than the headroom – i.e. more than the critical level of 75 µg/m$^3$ minus the background concentration.
2. There are 8757 hours during the year in which an event could have started and lasted for four hours during the year.

3. The chance of an event occurring which could have led to an exceedance is calculated as (1) divided by (2), assuming that one event occurs per year.

The probability of the PEC exceeding the daily mean Critical Level in an emergency scenario in an average year is 1.41% in the SSSI and 0.21% in the SAC. This is based on the maximum number of PEC exceedances of the Critical Level at any point using 5 years of weather data. This is conservative, as there have only been three grid outages over the past six years. Therefore, an exceedance of the daily mean Critical Level is unlikely.

The Environment Agency's "guidance for air quality assessments for specified generators" is designed to assess the situation where a generator only operates occasionally, but in every year, hence a 5% probability of an exceedance of the daily mean Critical Level in any one year leads to a likely exceedance over a 20 year period (5% x 20 years = 100%).

The average probability of the PEC exceeding the daily mean Critical Level in the SSSI is 1.41% meaning that the EDG would need to operate for approximately 70 years for the probability of the PEC exceeding the Critical Level in the SSSI to exceed 100% (100% / 1.41% = 70 years), or approximately 470 years for the SAC. Under the Environment Agency guidance the probability of an exceedance at the SAC can be described as 'highly unlikely'.

As part of our assessment, we have also taken into account the likelihood of the source/pathway/receptor mechanism and screened out the environmental risk of operating scenarios that we consider highly unlikely. The emergency generator is designed and configured so that in the event of a mains failure, it will fire up to meet the load demand at the site and allow the safe shutdown of the incinerator. This scenario will not be permitted as a normal operation, it is an emergency operation allowed to happen only in the unlikely event of failure of electrical supply from the grid. Measures will be in place to prevent and manage/mitigate the occurrence of this emergency operation.

The primary prevention measure relied upon to avoid this emergency scenario is the highly reliable design of the electrical grid and of the site connections to it. Based on the information in the application, we agree that this feature of the installation is compliant with the best available techniques (BAT) and that the requirement to run the back-up generator in an emergency is therefore minimised as far as possible. These preventative, management and mitigation measures are not specifically implemented or specified to prevent and mitigate impacts at the conservation sites under assessment, instead they have been specified as part of the BAT compliance and structural set up of the installation.

The short-term NOx process contributions for the emergency operations of the site are above the insignificance screening threshold set in our guidance, however the structural preventative measures taken to avoid the occurrence of this emergency scenario make the source/pathway/receptor mechanism very

unlikely. For the EDG, we consider that the only reasonably likely source/pathway/receptor mechanism would consist of periodic testing operations.

Based on the modelling and statistical analysis undertaken by the applicant, together with the unlikely occurrence of the emergency operational scenario, we are satisfied that it is possible to conclude no likely significant effect/damage on the integrity of the Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI.

(v) In combination assessment

'Alone' effects were considered above. It was concluded that there was no likely significant effect to the Isle of Portland to Studland Cliffs SAC. But effects were not completely avoided, therefore we also undertook an assessment of 'in combination effects' in line with our guidance.

The applicant has not identified information on any relevant future projects. We have considered existing developments identified by our screening as being within 10km of the closest point of the habitat site to the installation in line with our guidance. Two relevant permitted sites, with emissions to air, were identified:

Sunseeker International Limited – Approximately 1.5km to the west of the installation. The facility comprises of one biomass boiler burning untreated waste wood chips with a thermal rated input of 1.1 MWth. The permit was granted in 2021, therefore emissions from the site are not included with the background used in the assessment. Detailed air quality modelling assessed during the permit determination of the Environmental Permit for this site showed the effects of NOx were limited to a small area in relatively close proximity to the emission point. The biomass boiler will not release any ammonia, hydrogen fluoride, or sulphur-based pollutants. The determination of the environmental permit for this site concluded that emissions will not affect any sites of nature conservation or habitats identified. Modelling demonstrated that the biomass boiler would have an insignificant impact at the nearest sensitive ecological habitats. We therefore consider that emissions from the biomass boiler are not likely to have a significant effect in combination with the installation. We conclude no adverse effect on the integrity of the SAC in combination with the installation.

Chickerell Generation - Approximately 7.5km to the north-west of the installation. This is a permitted large combustion plant (open cycle gas turbine). The permit was granted in 1997, therefore any emissions from the site are already included with the background. In addition, we consider that there is unlikely to be a significant effect in combination due to distance from the installation and the location of Chickerell Generation not being in the prevailing wind direction. We conclude no adverse effect on the integrity of the SAC in combination with the installation.

### 5.4.3 SSSI Assessment

The Applicant's assessment of SSSIs was reviewed by the Environment Agency's technical specialists for modelling, air quality, conservation and ecology technical services, who agreed with the assessment's conclusions, that the proposal does not damage the special features of the SSSI(s).

(i) Assessment of emissions from the main stack

*Consideration of Critical Levels*

| Site | Pollutant | Reference period | Critical Level ($CL_e$) ($\mu g/m^3$) | PC ($\mu g/m^3$) | PC as % $CL_e$ | Back-ground ($\mu g/m^3$) | PEC ($\mu g/m^3$) | PEC as % $CL_e$ |
|---|---|---|---|---|---|---|---|---|
| Isle of Portland SSSI | $NO_x$ | Annual | 30 | 0.38 | **1.27** | 10.1 | 10.48 | 34.93 |
| | | Daily | 75 | 11.47 | **15.3** | 20.2 | 31.67 | 42.23 |
| | $SO_2$ | Annual | 10 (1) | 0.04 | 0.4 | - | - | - |
| | HF | Weekly | 0.5 | 0.01 | 2 | - | - | - |
| | | Daily | 5 | 0.03 | 0.6 | - | - | - |
| | $NH_3$ | Annual | 1 (1) | 0.03 | **3** | 1.18 | 1.21 | **121** |
| Chesil & The Fleet SSSI | $NO_x$ | Annual | 30 | 0.16 | 0.53 | - | - | - |
| | | Daily | 75 | 4.02 | 5.36 | - | - | - |
| | $SO_2$ | Annual | 20 | 0.09 | 0.45 | - | - | - |
| | HF | Weekly | 0.5 | 0.02 | 4 | - | - | - |
| | | Daily | 5 | 0.03 | 0.6 | - | - | - |
| | $NH_3$ | Annual | 3 | 0.01 | 0.33 | - | - | - |
| Nicodemus Heights SSSI | $NO_x$ | Annual | 30 | 0.17 | 0.57 | - | - | - |
| | | Daily | 75 | 6.33 | 8.44 | - | - | - |
| | $SO_2$ | Annual | 10 (1) | 0.04 | 0.4 | - | - | - |
| | HF | Weekly | 0.5 | 0.02 | 4 | - | - | - |
| | | Daily | 5 | 0.05 | 1 | - | - | - |
| | $NH_3$ | Annual | 1 (1) | 0.01 | **1.1** | 1.13 | 1.141 | **114.1** |

(1) The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have been assigned for this assessment as the presence of these features has been recorded in the Site Management Plan for at least one of the sections of the site.
(2) The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have not been assigned for this assessment as the presence of these features has not been recorded

*Consideration of Critical Loads*

| Site | Pollutant | Critical Load ($CL_o$) | PC | PC as % of $CL_o$ | Back-ground | PEC | PEC as % of $CL_o$ |
|---|---|---|---|---|---|---|---|
| Isle of Portland SSSI | Nitrogen deposition (woodland) (kg N/ha/yr) | 10-20 | 0.272 | **2.72** | 11.03 | 11.03 | **113.02** |
| | Nitrogen deposition (grassland) (kg N/ha/yr) | 15-25 | 0.169 | **1.13** | 11.03 | 11.12 | **74.66** |
| | Acid deposition (Keq/ha/yr) | $CL_{min}$ N: 0.856<br>$CL_{max}$ N: 4.856<br>$CL_{max}$ S: 4 | 0.061 | **1.26** | 0.797 | 0.858 | 17.67 |
| Chesil & The Fleet SSSI | Nitrogen deposition (kg N/ha/yr) | 8-10 | 0.073 | 0.91 | - | - | - |
| | Acid deposition (Keq/ha/yr) | $CL_{min}$ N: 0.223<br>$CL_{max}$ N: 2.018<br>$CL_{max}$ S: 1.58 | 0.027 | **1.34** | 1.036 | 1.063 | 52.67 |
| Nicodemus Heights SSSI | Nitrogen deposition (kg N/ha/yr) | 15-25 | 0.075 | 0.5 | - | - | - |
| | Acid deposition (Keq/ha/yr) | $CL_{min}$ N: 0.856<br>$CL_{max}$ N: 4.856<br>$CL_{max}$ S: 4 | 0.028 | 0.58 | - | - | - |

In line with our guidance, agreed with Natural England, we concluded no likely significant effect alone or in-combination where:

- The PC is <1% of long term standards and <10% of short term standards; and
- Where the PC >1% of long term standards, the PEC is < 70%

Isle of Portland SSSI:

The predicted PC of long-term NOx is >1% (1.27%) of the long-term $CL_e$. The PEC is 10.48 µg/m³, which is 34.93% of the critical level. The PEC is less than 70% of critical level, so there is sufficient headroom to conclude that an exceedance is unlikely.

Predicted PC of short-term NOx is >10% (15.3%) of the short-term Critical Level. The process contribution plus background concentration (i.e. PEC) is less than 100% of the appropriate environmental criterion. When taking the background into account, there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely.

The maximum ammonia background concentration for this SSSI is 1.18 µg/$m^3$ (source APIS 2019 data). Therefore, the background value already exceeds the relevant environmental standard by up to 18%. The background concentration is predicted to exceed the appropriate environmental criterion and the process contribution will cause an additional small increase. The predicted PEC for ammonia is 1.21 µg/m3. Which is 21% above the critical level. The PC accounts for 2.48% of the total PEC, meaning 97.52% is the background. We consider that the small increase in the overall PEC attributed to the PC from the installation is unlikely to have a significant impact. The scale of the contribution from the installation (concentration and area/size of impact) is limited. The maximum PC for ammonia at the Isle of Portland SSSI from the installation on its own is calculated as being up to 3% of the relevant critical level. It is noted that the highest PC is predicted over only a relatively small area of the SSSI, as shown by the Applicant's process contribution contour plots. We regard this as a small contribution, suggesting that the effect may be low. The PC over the rest of the SSSI is below the 1% screening threshold. Therefore, we can conclude that ammonia emissions are not likely to damage the SSSI.

For this SSSI, the maximum annual mean process contribution of nitrogen oxides, as nutrient nitrogen, predicted by the applicant is 0.272 kg N/ha/yr (woodland). This is above the significance screening threshold of 1% of the nutrient-nitrogen critical load (2.72%). The PEC is 11.3 kg N/ha/yr (based on 2019 background data, Source: APIS), which is 113.02% of the nutrient-nitrogen critical load for the most sensitive feature and therefore has the potential to cause not insignificant impacts at some locations within the SSSI. However, the background concentration is currently exceeding the appropriate environmental criterion and the new process contribution only will cause an additional small increase. PC as a percentage of the PEC is

2.41%, meaning the current background accounts for 97.59% of the PEC. We consider that the small increase in the overall PEC attributed to the PC from the installation is unlikely to have a significant impact. The scale of the contribution from the installation (both concentration and area/size of impact) is limited.

The critical load range for the grassland features is higher than the woodland features assessed above (15-25 kg N/ha/yr). For the grassland features, the maximum annual mean process contribution of nitrogen oxides, as nutrient nitrogen, predicted by the applicant is 0.169 kg N/ha/yr (1.13% of the critical load). The PEC is 11.12 kg N/ha/yr, which is 74.66% of the critical load. Therefore, when taking the background into account, there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely. We can conclude that the contribution of nitrogen oxides, as nutrient nitrogen, is not likely to damage special features of the SSSI.

For this SSSI, the maximum annual mean process contribution of pollutants responsible for acidification, predicted by the applicant is 0.061 keq/ha/yr, which is above the significance screening threshold of 1% of the acid critical load function (1.26%).

The PEC is 0.858 Keq/ha/yr, which is 17.67% of the acid critical load function. The PEC is less than 70% of the critical load therefore, when taking the background into account, there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely.

Based on the above assessment for emissions from the main stack we can conclude that the operation is not likely to damage special features of the SSSI. Natural England agrees with our conclusions.

Nicodemus Heights SSSI:

With the exception of ammonia, all process contributions screen out as insignificant.

The maximum PC for ammonia at the Nicodemus Heights SSSI from the proposed project on its own is calculated as being up to 1.1% of the relevant critical level. It is noted that the highest PC is predicted over only a relatively small area of the SSSI (as shown by the Applicant's process contribution contour plots) and at a maximum of 1.1% of the critical level. We regard this as a small contribution, suggesting that the effect may be low. The PC over the rest of the SSSI is below the 1% screening threshold.

The maximum ammonia background concentration for this SSSI is 1.13 $\mu g/m^3$ (source APIS 2019 data). Therefore, the background value already exceeds the relevant environmental standard by up to 13%. The new process contribution will only cause an additional small increase, which is not regarded as significant relative

to the background concentration. The predicted PEC for ammonia is 1.141 µg/m3. Which is 14.1% above the critical level. The PC accounts for 0.88% of the total PEC, meaning 99.12% is the background.

We consider that the small increase in the overall PEC attributed to the PC from the installation is unlikely to have a significant impact. The scale of the contribution from the installation (concentration and area/size of impact) is limited. Therefore, we can conclude that the operation is not likely to damage special features of the SSSI. Natural England agrees with our conclusions.

(ii) Assessment of emissions from the emergency diesel generator (EDG)

The modelling has shown that impacts from the EDG occur close to the site. Its impact has therefore been considered on the designated sites closest to the proposed plant (Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI). These are primarily overlapping designations. Therefore, our assessment of the emissions from the EDG to the SSSI is considered together with our assessment of the SAC in Section 5.4.2 (iv) of this Decision Document.

### 5.4.4 Assessment of other conservation sites

Conservation sites are protected in law by legislation. The Habitats Directive provides the highest level of protection for SACs and SPAs, domestic legislation provides a lower but important level of protection for SSSIs. Finally the Environment Act provides more generalised protection for flora and fauna rather than for specifically named conservation designations. It is under the Environment Act that we assess other sites (such as local wildlife sites) which prevents us from permitting something that will result in significant pollution; and which offers levels of protection proportionate with other European and national legislation. However, it should not be assumed that because levels of protection are less stringent for these other sites, that they are not of considerable importance. Local sites link and support EU and national nature conservation sites together and hence help to maintain the UK's biodiversity resilience.

For SACs SPAs, Ramsars and SSSIs we consider the contribution PC and the background levels in making an assessment of impact. In assessing these other sites under the Environment Act we look at the impact from the Installation alone in order to determine whether it would cause significant pollution. This is a proportionate approach, in line with the levels of protection offered by the conservation legislation to protect these other sites (which are generally more numerous than Natura 2000 or SSSIs) whilst ensuring that we do not restrict development.

Critical levels and loads are set to protect the most vulnerable habitat types. Thresholds change in accordance with the levels of protection afforded by the legislation. Therefore, the thresholds for SAC, SPA and SSSI features are more stringent than those for other nature conservation sites.

Therefore, we would generally conclude that the Installation is not causing significant pollution at these other sites if the PC is less than the relevant critical level or critical load, provided that the Applicant is using BAT to control emissions.

The Applicant's assessment showed that the PCs are below the critical levels or loads. We are satisfied that the Installation will not cause significant pollution at the sites. The Applicant is required to prevent, minimise and control emissions using BAT, this is considered further in Section 6.

5.4.5 Assessment of other habitats and species

As part of our assessment, we check on protected sites, habitats and species which have the potential to be impacted by the activity being proposed. This is done using our own internal screening tools to generate a list of sites and species. We also had a large number of consultation responses expressing concern over impacts on nearby sites and species.

The list of species we identified did not match those listed in the public consultation; our list is of those species and habitats that could be directly impacted by emissions from the Installation. However, where these species have been encountered by members of the public, we believe that the nearby local wildlife sites and wider protected habitats are likely to be the main areas frequented by such species even though the species are not recorded as being integral to them. These sites and habitats are protected during our determination (see sections 5.4.2 - 5.4.4 above) as part of our general duties to protect the wider environment and to not allow any significant pollution, and as such we believe that protecting these supporting habitats will inherently protect the associated species noted within the public consultation.

## 5.5 Impact of abnormal operations

Article 50(4)(c) of IED requires that waste incineration and co-incineration plants shall operate an automatic system to prevent waste feed whenever any of the continuous emission monitors show that an emission limit value (ELV) is exceeded due to disturbances or failures of the purification devices. Notwithstanding this, Article 46(6) allows for the continued incineration and co-incineration of waste under such conditions provided that this period does not (in any circumstances) exceed 4 hours uninterrupted continuous operation or the cumulative period of operation does not exceed 60 hours in a calendar year. This is a recognition that the emissions during transient states (e.g. start-up and shut-down) are higher than during steady-state operation, and the overall environmental impact of continued operation with a limited exceedance of an ELV may be less than that of a partial shut-down and re-start.

For incineration plant, IED sets backstop limits for particulates, CO and TOC which must continue to be met at all times. The CO and TOC limits are the same as for normal operation, and are intended to ensure that good combustion conditions are maintained. The backstop limit for particulates is 150 mg/m$^3$ (as a half hourly average) which is five times the limit in normal operation.

Article 45(1)(f) requires that the permit shall specify the maximum permissible period of any technically unavoidable stoppages, disturbances, or failures of the purification devices or the measurement devices, during which the concentrations in the discharges into the air may exceed the prescribed emission limit values. In this case we have decided to set the time limit at 4 hours, which is the maximum period prescribed by Article 46(6) of the IED.

These abnormal operations are limited to no more than a period of 4 hours continuous operation and no more than 60 hour aggregated operation in any calendar year. This is less than 1% of total operating hours and so abnormal operating conditions are not expected to have any significant long term environmental impact unless the background conditions were already close to, or exceeding, an ES. For the most part therefore consideration of abnormal operations is limited to consideration of its impact on short term ESs.

In making an assessment of abnormal operations the following worst case scenario has been assumed:

- Dioxin emissions of 6 ng/$m^3$ (100 x normal)
- Mercury emissions are 100 times those of normal operation
- $NO_x$ emissions of 500 mg/$m^3$ (1.25 x normal)
- Particulate emissions of 150 mg/$m^3$ (5 x normal)
- Metal emissions other than mercury are 30 times those of expected (based on Environment Agency guidance note) normal emissions
- $SO_2$ emissions of 450 mg/$m^3$ (2.25 x normal)
- HCl emissions of 900 mg/$m^3$ (15 x normal)
- HF emissions of 20 mg/$m^3$ (5 x normal)
- PCBs (100 x normal)

This is a worst case scenario in that these abnormal conditions include a number of different equipment failures not all of which will necessarily result in an adverse impact on the environment (e.g. a failure of a monitoring instrument does not necessarily mean that the incinerator or abatement plant is malfunctioning). This analysis assumes that any failure of any equipment results in all the negative impacts set out above occurring simultaneously.

The result on the Applicant's short-term environmental impact is summarised in the table below.

| **Pollutant** | **Environmental Standard** | | **Back-ground** | **Process Contribution (PC)** | | **Predicted Environmental Concentration (PEC)** | |
|---|---|---|---|---|---|---|---|
| | **µg/$m^3$** | | **µg/$m^3$** | **µg/$m^3$** | **% of EAL** | **µg/$m^3$** | **% of EAL** |
| $NO_2$ | 200 | 99.79th %ile of 1-hour means | 44.04 | 34.93 | 17.5 | 78.97 | 39.5 |

| Pollutant | Environmental Standard | | Back-ground | Process Contribution (PC) | | Predicted Environmental Concentration (PEC) | |
|---|---|---|---|---|---|---|---|
| | µg/m³ | | µg/m³ | µg/m³ | % of EAL | µg/m³ | % of EAL |
| $PM_{10}$ | 50 | 90.41st %ile of 24-hour means | - | 4.22 | 8.44 | - | - |
| $SO_2$ | 266 | 99.9th ile of 15-min means | 6.64 | 110.6 | 41.6 | 117.24 | 44.1 |
| | 350 | 99.9th ile of 15-min means | 6.64 | 88.9 | 25.40 | 95.54 | 27.3 |
| | 125 | 99.18th %ile of 24-hour means | 6.64 | 35.76 | 28.61 | 42.4 | 33.9 |
| HCl | 750 | 1-hr average | 1.42 | 262.9 | 35.05 | 264.3 | 35.24 |
| HF | 160 | 1-hr average | - | 5.8 | 3.625 | - | - |
| Hg | 7500 | 1-hr average | - | 584.24 | 7.79 | - | - |
| Sb | 150000 | 1-hr average | - | 100.78 | 0.07 | - | - |
| Cu | 200000 | 1-hr average | - | 254.14 | 0.13 | - | - |
| Mn | 1500000 | 1-hr average | - | 525.82 | 0.04 | - | - |
| PCBs | 6000 | 1-hr average | - | 146.06 | 2.43 | - | - |
| Cr (II)(III) | 150000 | 1-hr average | - | 806.25 | 0.54 | - | - |

From the table above, emissions can still be considered insignificant, in that the PC is still <10% of the short-term ES, or where not screened out as insignificant, have been assessed as being unlikely to give rise to significant pollution in that the predicted environmental concentration is less than 100% of short-term ES. Metals were also insignificant when also precautionarily assumed that these metals could be 30 times above the ELV.

During determination new EALs were implemented for a number of pollutants including some metals. Some of these new EALs are applicable to the assessment for the impact of abnormal operations. The values were updated on the GOV.UK risk assessment page on 20 November 2023.These updated EALs are not shown in the table above, however we checked the Applicant's modelling against these new EALs and carried out our own screening checks. We have used our own reasonable worst-case emissions scenarios for abnormal operations to conduct these additional checks. We are satisfied that the new EALs do not change the conclusions of our audit. Under abnormal operating conditions, the 1,3-butadiene, mercury, cadmium and nickel PCs are likely to be not insignificant. However, when taking the background concentrations into consideration, the predicted environmental concentrations (PECs) are well below the updated EALs.

We are therefore satisfied that it is not necessary to further constrain the conditions and duration of the periods of abnormal operation beyond those permitted under Chapter IV of the IED.

We have not assessed the impact of abnormal operations against long term ESs for the reasons set out above. Except that if dioxin emissions were at 6 ng/m$^3$ for the maximum period of abnormal operation, this would result in an increase of approximately 70% in the TDI reported in section 5.3.2. In these circumstances the intake would be 0.17% of the TDI, based on impact at the most impacted receptor. At this level, emissions of dioxins will still not pose a risk to human health.

## 5.6 Impact of emissions from the Emergency Diesel Generator

The installation will also include an Emergency Diesel Generator (EDG). This will be required to safely shutdown the main plant in the event of a loss of grid connection to maintain operation of the abatement control systems. This event would typically occur for no more than 4 hours. In this operating scenario, the EDG would need to operate at 100% load following the initial loss of grid connection. However, as the shutdown sequence progressed the abatement and control systems would be reduced in operation so that the EDG could operate at a reduced load. Power for the start-up being provided by the grid connection, once restored, not the EDG.

The applicant has not considered the impact of the EDG operation in relation to the annual mean assessment levels. They conclude that the contribution to annual mean impacts would not be significant due to the limited period of operation. Based on the operating conditions (testing up to 26 hours per year, up to 30 minutes every time,

between 8am and 5pm and emergency operation being infrequent), we agree that annual impacts are not likely to be significant.

The modelling has shown that impacts from the EDG occur close to the site. The contribution from the main stack in this area is minimal as the taller stack height means that the emissions travel further and avoid significant building downwash effects. As a result, the emissions from the EDG and main stack have been considered separately by the applicant. We have followed this approach in our assessment. Testing of the EDG would occur at the same time as the operation of the EfW plant. However, it is highly unlikely that a significant contribution from the EfW plant would coincide with the operation of the EDG, or that the conditions which result in the greatest ground level contributions would occur in the same hour due to the significantly different stack heights.

The 1-hour AQAL for nitrogen dioxide of 200 µg/m$^3$, which can be exceeded 18 times per year. The table below shows the maximum predicted impact at any grid point during testing and an emergency event, it shows the worst case from the 5 years of meteorological data considered in the modelling. The 1-hour AQAL does not apply where public would not be expected to have regular access. Therefore, whilst this analysis has considered the point of maximum impact the AQAL does not necessarily apply at this point. It is therefore considered to be conservative.

| **Operation** | **Pollutant** | **Reference period** | **AQAL (µg/m$^3$)** | **PC as % AQAL** |
|---|---|---|---|---|
| Testing | $NO_x$ | 1 hour | 200 | **246** |
| Emergency | $NO_x$ | 1 hour | 200 | **361** |

Testing:

As shown, the maximum 1-hour nitrogen dioxide process contribution is predicted to exceed the AQAL. However, this conservatively assumes that testing occurs during the worst-case weather conditions for dispersion in the hours of 08:00 and 18:00 (i.e. 3650 hours in each year). Testing would occur on a 2-week basis and as such would only occur about 26 times in a year.

Therefore, it is necessary to assess how likely it is that the testing period would coincide with the worst-case weather years. To do this, a cumulative hypergeometric distribution calculation has been carried out in line with the EA's guidance for specified generators, which is designed to assess the situation where a generator only operates occasionally.

The 1-hour AQAL for nitrogen dioxide is 200 ug/m$^3$ is not to be exceeded more than 18 times a year. As a conservative assumption, the Applicant has also assumed that

an emergency event would occur each year, which would last for 4 hours, and cause 4 exceedance hours. Therefore, the probability has been calculated as randomly selecting 15 or more exceedance hours in the sample size.

This has shown that the probability of the PEC exceeding the AQAL (allowing for the tolerable exceedances and emergency operation) is less than 0.1%, indicating that short term exceedances are highly unlikely.

Emergency operation:

As shown in the above table, the maximum 1-hour nitrogen dioxide process contribution is predicted to exceed the AQAL. As with the testing, this conservatively assumes that the emergency event occurs during the worst-case weather conditions for dispersion.

As part of our assessment, we have also taken into account the likelihood of the source/pathway/receptor mechanism and screened out the environmental risk of operating scenarios that we consider highly unlikely. The emergency generator is designed and configured so that in the event of a mains failure, it will fire up to meet the load demand at the site. This scenario will not be permitted as a normal operation, it is an emergency operation allowed to happen only in the unlikely event of failure of electrical supply from the grid. Measures will be in place to prevent and manage/mitigate the occurrence of this emergency operation.

The primary prevention measure relied upon to avoid this emergency scenario is the highly reliable design of the electrical grid and of the site connections to it. Based on the information in the application, we agree that this feature of the installation is compliant with the best available techniques (BAT) and that the requirement to run the back-up generator in an emergency is therefore minimised as far as possible.

The short-term NOx process contributions for the emergency operations of the site are above the insignificance screening threshold set in our guidance, however the structural preventative measures taken to avoid the occurrence of this emergency scenario make the source/pathway/receptor mechanism very unlikely. For the EDG, we consider that the reasonably likely source/pathway/receptor mechanism would consist of periodic testing operations.

Our assessment of the impact on ecological sites from the EDG is considered in Section 5.4.2 (iv) of this Decision Document.

# 6 Application of Best Available Techniques

## 6.1 Scope of Consideration

In this section, we explain how we have determined whether the Applicant’s proposals are the Best Available Techniques for this Installation.

- The first issue we address is the fundamental choice of incineration technology. There are a number of alternatives, and the Applicant has explained why it has chosen one particular kind for this Installation.

- We then consider in particular control measures for the emissions which were not screened out as insignificant in the previous section on minimising the installation's environmental impact.

- We also have to consider the combustion efficiency and energy utilisation of different design options for the Installation, which are relevant considerations in the determination of BAT for the Installation, including the Global Warming Potential of the different options.

- Finally, the prevention and minimisation of Persistent Organic Pollutants (POPs) must be considered, as we explain below.

Chapter IV of the IED specifies a set of maximum ELV. Although these limits are designed to be stringent, and to provide a high level of environmental protection, they do not necessarily reflect what can be achieved by new plant. Article 14(3) of the IED says that BAT-C shall be the reference for setting the permit conditions. The BAT-C were published on 03/12/2019 and set BAT AELs for various substances mainly as daily average values which are in many cases lower than the chapter IV limits.

Operational controls complement the ELV and should generally result in emissions below the maximum allowed; whilst the limits themselves provide headroom to allow for unavoidable process fluctuations. Actual emissions are therefore almost certain to be below emission limits in practice, because any Operator that sought to operate its installation continually at the maximum permitted limits would almost inevitably breach those limits regularly, simply by virtue of normal fluctuations in plant performance, resulting in enforcement action (including potentially prosecution, suspension or revocation) being taken. Assessments based on BAT AELs or Chapter IV limits are therefore "worst-case" scenarios.

We are satisfied that emissions at the permitted limits would ensure a high level of protection for human health and the environment in any event.

### 6.1.1 Consideration of Furnace Type

The prime function of the furnace is to achieve maximum combustion of the waste. Chapter IV of the IED requires that the plant (furnace in this context) should be designed to deliver its requirements. The main requirements of Chapter IV in relation to the choice of a furnace are compliance with air emission limits for CO and TOC and achieving a low TOC/LOI level in the bottom ash.

The BREF states that Municipal Waste can be incinerated in traveling grates, rotary kilns and fluidised bed technology. Fluidised bed technology requires MSW to be of a certain particle size range, which usually requires some degree of pre-treatment even when the waste is collected separately. The BREF describes other process such as gasification and pyrolysis. The BREF notes that some of the processes have encountered technical and economic problems when scaled up to commercial,

industrial sizes. Some are used on a commercial basis in Japan and are being tested in demonstration plants in Europe but still only have a small share of overall capacity.

Section 4.3 of the BREF provides a comparison of combustion and thermal treatment technologies, used in Europe and factors affecting their applicability and operational suitability for various waste types. There is also some information on the comparative costs. The table below has been extracted from the BREF tables. This table is also in line with the Guidance Note "The Incineration of Waste (EPR 5.01)). However, it should not be taken as an exhaustive list nor that all technologies listed have found equal application across Europe.

Overall, any of the furnace technologies listed below would be considered as BAT provided the Applicant has justified it in terms of:

- nature/physical state of the waste and its variability
- proposed plant throughput which may affect the number of incineration lines
- preference and experience of chosen technology including plant availability
- nature and quantity/quality of residues produced.
- emissions to air – usually NOx as the furnace choice could have an effect on the amount of unabated NOx produced
- energy consumption – whole plant, waste preparation, effect on GWP
- Need, if any, for further processing of residues to comply with TOC
- Costs

**Summary comparison of thermal treatment technologies (reproduced from the Waste Incineration BREF)**

| Technique | Key waste characteristics and suitability | Throughput per line | Advantages | Disadvantages / Limitations of use | Bottom Ash Quality | Cost |
|---|---|---|---|---|---|---|
| Moving grate (air-cooled) | • Low to medium heat values (LCV 5 – 16.5 GJ/t)<br>• Municipal and other<br>• heterogeneous solid wastes<br>• Can accept a proportion of sewage sludge and/or medical waste with municipal waste<br>• Applied at most modern<br>• MSW installations | • 1 to 50 t/h with most projects 5 to 30 t/h.<br>• Most industrial applications not below 2.5 or 3 t/h. | • Widely proven at large scales.<br>• Robust<br>• Low maintenance cost<br>• Long operational history<br>• Can take heterogeneous wastes without special<br>• preparation | • Generally not suited to powders, liquids or materials that melt through the grate | TOC 0.5% to 3% | High capacity reduces specific cost per tonne of waste |
| Moving grate (liquid Cooled) | Same as air-cooled grates except:<br><br>LCV 10 – 20 GJ/t | Same as air-cooled grates | As air-cooled grates but:<br>• higher heat value waste is treatable<br>• Better combustion control possible. | As air-cooled grates but:<br>• risk of grate damage/ leaks<br>• higher complexity | TOC 0.5% to 3% | Slightly higher capital cost than air-cooled |
| Rotary Kiln | Can accept liquids and pastes as well as gases<br><br>Solid feeds more limited than grate (due to refractory damage)<br><br>often applied to hazardous Wastes | <16 t/h | • Very well proven<br>• Broad range of wastes<br>• Good burn out even of HW | Throughputs lower than grates | TOC <3 % | Higher specific cost due to reduced capacity |

| Technique | Key waste characteristics and suitability | Throughput per line | Advantages | Disadvantages / Limitations of use | Bottom Ash Quality | Cost |
|---|---|---|---|---|---|---|
| Fluid bed - bubbling | • Wide range of CV (5-25 MJ/kg)<br>• Only finely divided<br>• consistent wastes.<br>• Limited use for raw MSW<br>• Often applied to sludges co fired with RDF, shredded MSW, sludges, poultry manure | Up to 25 t/h | • Good mixing<br>• Fly ashes of good leaching quality | • Careful operation required to avoid clogging bed.<br>• Higher fly ash quantities. | TOC <1% | FGT cost may be lower.<br><br>Costs of waste preparation |
| Fluid bed - circulating | • Wide range of CV (6-25 MJ/kg)<br>• Only finely divided consistent wastes.<br>• Limited use for raw MSW<br>• Often applied to sludges co-fired with RDF, coal, wood waste | Up 70 t/h | • Good mixing<br>• High steam parameters up to 500oC<br>• Greater fuel flexibility than BFB<br>• Fly ashes of good leaching quality | • Cyclone required to conserve bed material<br>• Higher fly ash quantities | TOC <1% | • FGT cost may be lower.<br>• Costs of waste preparation |
| Spreader - stoker combustor | • RDF and other particle feeds<br>• Poultry manure<br>• Wood wastes | No information | • Simple grate construction<br>• Less sensitive to particle size than FB | Only for well defined mono-streams | No information | No information |
| Gasification - fixed bed | • Mixed plastic wastes<br>• Other similar consistent streams<br>• Gasification less widely used/proven than incineration | Up to 20 t/h | • Low leaching residue<br>• Good burnout if oxygen blown<br>• Syngas available<br>• Reduced oxidation of recyclable metals | • Limited waste feed<br>• Not full combustion<br>• High skill level<br>• Tar in raw gas<br>• Less widely proven | • Low leaching bottom ash<br>• Good burnout with oxygen | High operating/ maintenance costs |

| Technique | Key waste characteristics and suitability | Throughput per line | Advantages | Disadvantages / Limitations of use | Bottom Ash Quality | Cost |
|---|---|---|---|---|---|---|
| Gasification - entrained flow | • Mixed plastic wastes<br>• Other similar consistent streams<br>• Not suited to untreated MSW<br>• Gasification less widely used/proven than incineration | Up to 10 t/h | • Low leaching slag<br>• Reduced oxidation of recyclable metals | • Limited waste feed<br>• Not full combustion<br>• High skill level<br>• Less widely proven | low leaching slag | • High operation/ maintenance costs<br>• High pre-treatment costs |
| Gasification - fluidised bed | • Mixed plastic wastes<br>• Shredded MSW<br>• Shredder residues<br>• Sludges<br>• Metal rich wastes<br>• Other similar consistent streams<br>• Gasification less widely used/proven than incineration | 5 – 20 t/h | • Can use low reactor temperatures e.g. for Al recovery<br>• Separation of main non combustibles<br>• Can be combined with ash melting<br>• Reduced oxidation of recyclable metals | • Limited waste size (<30cm)<br>• Tar in raw gas<br>• Higher UHV raw gas<br>• Less widely proven | If combined with ash melting chamber ash is vitrified | Lower than other gasifiers |
| Pyrolysis | • Pre-treated MSW<br>• High metal inert streams<br>• Shredder residues/plastics<br>• Pyrolysis is less widely used/proven than incineration | ~ 5 t/h (short drum)<br>5 – 10 t/h (medium drum) | • No oxidation of metals<br>• No combustion energy for metals/inert<br>• In reactor acid neutralisation possible<br>• Syngas available | • Limited wastes<br>• Process control and engineering critical<br>• High skill level<br>• Not widely proven<br>• Need market for syngas | • Dependent on process temperature<br>• Residue produced requires further processing and sometimes combustion | High pre-treatment, operation and capital costs |

The Applicant has carried out a review of the following candidate furnace types:

- Moving Grate Furnace
- Fixed Hearth
- Pulsed Hearth
- Rotary and Oscillating Kilns
- Fluidised Bed
- Pyrolysis / Gasification

Fixed hearth, pulsed hearth, rotary and oscillating kiln and pyrolysis/gasification were discounted for the following reasons:

- Fixed hearth - not suitable for large volumes of waste
- Pulsed hearth - burnout of waste not reliable
- Oscillating Kilns – lower energy conversion, suitable for lower throughputs
- Pyrolysis / Gasification – limited experience in the UK for waste. Difficulty in obtaining investment for this technology.

Moving grate, rotary kiln and fluidised bed were considered further in a more detailed BAT assessment. The Applicant concluded that moving grate was BAT primarily because of its robustness insofar as it can cope with large quantities of heterogeneous fuel whereas rotary kilns and fluidised beds are suited to more homogeneous pre-treated fuel.

The Applicant has proposed to use a furnace technology comprising a moving grate furnace which is identified in the table above as being considered BAT in the BREF or TGN for this type of waste feed.

The Applicant proposes to use gasoil as support fuel for start-up, shut down and for the auxiliary burners. The Applicant also considered using liquified gas (LPG) and natural gas as support fuel, however their choice of gasoil is based on the lack of an available high pressure gas main within the Installation Boundary or near to the site, and on the risk of explosion inherent with the pressurised storage of liquified gas (LPG) in the event of an on-site fire.

<u>Boiler Design</u>

In accordance with BAT 30 of the BAT C and our Technical Guidance Note, EPR 5.01, the Applicant has confirmed that the boiler design will include the following features to minimise the potential for reformation of dioxins within the de-novo synthesis range:

- ensuring that the steam/metal heat transfer surface temperature is a minimum where the exhaust gases are within the de-novo synthesis range;
- design of the boilers using CFD to ensure no pockets of stagnant or low velocity gas;
- boiler passes are progressively decreased in volume so that the gas velocity increases through the boiler; and
- Design of boiler surfaces to prevent boundary layers of slow moving gas.

Any of the options listed in the BREF and summarised in the table above can be BAT. The Applicant has chosen a furnace technique that is listed in the BREF and we are

satisfied that the Applicant has provided sufficient justification to show that their technique is BAT. This is not to say that the other techniques could not also be BAT, but that the Applicant has shown that their chosen technique is at least comparable with the other BAT options. We believe that, based on the information gathered by the BREF process, the chosen technology will achieve the requirements of Chapter IV of the IED for the air emission of TOC/CO and the TOC on bottom ash.

## 6.2 BAT and emissions control

The prime function of flue gas treatment is to reduce the concentration of pollutants in the exhaust gas as far as practicable. The techniques which are described as BAT individually are targeted to remove specific pollutants, but the BREF notes that there is benefit from considering the Flue Gas Cleaning System (FGC) system as a whole unit. Individual units often interact, providing a primary abatement for some pollutants and an additional effect on others.

The BREF lists the general factors requiring consideration when selecting flue-gas treatment (FGC) systems as:

- type of waste, its composition and variation
- type of combustion process, and its size
- flue-gas flow and temperature
- flue-gas content, including magnitude and rate of composition fluctuations
- target emission limit values
- restrictions on discharge of aqueous effluents
- plume visibility requirements
- land and space availability
- availability and cost of outlets for residues accumulated/recovered
- compatibility with any existing process components (existing plants)
- availability and cost of water and other reagents
- energy supply possibilities (e.g. supply of heat from condensing scrubbers)
- reduction of emissions by primary methods
- noise
- arrangement of different flue-gas cleaning devices if possible with decreasing flue-gas temperatures from boiler to stack

Taking these factors into account the Technical Guidance Note points to a range of technologies being BAT subject to circumstances of the Installation.

### 6.2.1 Particulate Matter

| **Particulate matter** | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Bag / Fabric filters (BF)** | Reliable abatement of particulate | Max temp 250°C | Multiple compartments | Most plants |

| | | | | |
|---|---|---|---|---|
| | matter to below 5mg/$m^3$ | Higher energy use than ESP<br>Sensitive to condensation and corrosion | Bag burst detectors | |
| **Wet scrubbing** | May reduce acid gases simultaneously. | Not normally BAT.<br><br>Liquid effluent produced | Require reheat to prevent visible plume and dew point problems. | Where scrubbing required for other pollutants |
| **Ceramic filters** | High temperature applications<br><br>Smaller plant. | May "blind" more than fabric filters | | Small plant.<br><br>High temperature gas cleaning required. |
| **Electrostatic precipitators (ESP)** | Low pressure gradient. Use with BF may reduce the energy consumption of the induced draft fan. | Not normally BAT by itself<br>Risk of dioxin formation if used in 200-400ºC range | | When used with other particulate abatement plant |

The Applicant proposes to use fabric filters for the abatement of particulate matter. Fabric filters provide reliable abatement of particulate matter to below 5 mg/$m^3$ and are BAT for most installations. The Applicant proposes to use multiple compartment filters with burst bag detection to minimise the risk of increased particulate emissions in the event of bag rupture.

Emissions of particulate matter have been previously screened out as insignificant, and so the Environment Agency agrees that the Applicant's proposed technique is BAT for the installation.

### 6.2.2 Oxides of Nitrogen

| **Oxides of Nitrogen : Primary Measures** | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Low NOx burners** | Reduces NOx at source | | Start-up, supplementary firing. | Where auxiliary burners required. |
| **Starved air systems** | Reduce CO simultaneously. | | | Pyrolysis, Gasification systems. |
| **Optimise primary and secondary air injection** | | | | All plant. |
| **Flue Gas Recirculation (FGR)** | Reduces the consumption of reagents used for secondary NOx control.<br><br>May increase overall energy recovery | Some applications experience corrosion problems.<br><br>Can result in elevated CO and other products of incomplete combustion | | Justify if not used |

| **Oxides of Nitrogen : Secondary Measures (BAT is to apply Primary Measures first)** | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Selective catalytic reduction (SCR)** | NOx emissions 40-150mg/ $m^3$<br><br>Reduces CO, VOC, dioxins | Expensive.<br><br>Re-heat required – reduces plant efficiency | | All plant |
| **SCR by catalytic filter bags** | 50-120 mg/$m^3$ | | | Applicable to new and existing plants with or without existing SNCR.<br><br>Can be used with $NH_3$ as slip catalyst with SNCR |

| | | | | |
|---|---|---|---|---|
| **Selective non-catalytic reduction (SNCR)** | NOx emissions 80 -180 mg/m$^3$<br>Lower energy consumption than SCR<br>Lower costs than SCR | Relies on an optimum temperature around 900 °C, and sufficient retention time for reduction<br><br>May lead to Ammonia slip | Port injection locations | All plant unless lower NOx release required for local environmental protection. |
| **Reagent Type: Ammonia** | Likely to be BAT | More difficult to handle<br><br>Lower nitrous oxide formation<br><br>Narrower temperature window | | All plant |
| **Reagent Type: Urea** | Likely to be BAT | Higher $N_2O$ emissions than ammonia, optimisation particularly important | | All plant |

The Applicant proposes to implement the following primary measures:

- Low $NO_x$ burners – this technique reduces $NO_x$ at source and is defined as BAT where auxiliary burners are required.
- Optimise primary and secondary air injection – this technique is BAT for all plant.

Flue gas recirculation is not proposed. The Applicant stated that where furnaces have been designed to operate with FGR these will benefit from reduced NOx generation from the use of FGR, whereas if FGR is not designed in from the start, with reduction in NOx generation being controlled by primary and secondary air and the grate design, then FGR will give little benefit. We agree with that assessment and in addition FGR can result in corrosion issues and reduced energy efficiency.

There are three recognised techniques for secondary measures to reduce $NO_x$. These are Selective Catalytic Reduction (SCR), SCR by catalytic filter bags and Selective Non-Catalytic Reduction (SNCR) with or without catalytic filter bags. For each technique, there is a choice of urea or ammonia reagent.

SCR can reduce $NO_x$ levels to below 50 mg/m$^3$ and can be applied to all plant, it is generally more expensive than SNCR and requires reheating of the waste gas stream which reduces energy efficiency, periodic replacement of the catalysts also produces a hazardous waste. The use of SCR by catalytic filter bags can reduce emissions to 50 -120 mg/m$^3$ with low investment costs. SNCR can typically reduce $NO_x$ levels to between 80 and 180 mg/m$^3$, it relies on an optimum temperature of around 900$^o$C and sufficient retention time for reduction. SNCR is more likely to have higher levels of

ammonia slip. The technique can be applied to all plant unless lower $NO_x$ releases are required for local environmental protection. Urea or ammonia can be used as the reagent with either technique, urea is somewhat easier to handle than ammonia and has a wider operating temperature window, but tends to result in higher emissions of $N_2O$. Both reagents are BAT, and the use of one over the other is not normally significant in environmental terms.

The Applicant proposes to use SNCR with ammonia as the reagent.

They have also indicated that it may be necessary for a layer of catalyst to be installed in the flue from the bag filters and prior to release from the stack to act as a 'polisher'. For the purposes of their BAT assessment they assumed that the proposed system be classified as an SNCR system with an SCR polisher, rather than an SCR system. The Environment Agency agrees with this assumption.

Emissions of $NO_x$ cannot be screened out as insignificant. Therefore, the Applicant has carried out a cost / benefit study of the alternative techniques. The cost per tonne of $NO_x$ abated over the projected life of the plant has been calculated and compared with the environmental impact as shown in the table below.

| | Cost of $NO_x$ removal / tonne of NOx abated (£) | PC (long term) (µg/m3) | PEC (long term) (µg/m3) |
|---|---|---|---|
| SCR | 3,460 | 0.51 | 22.53 |
| SNCR | 910 | 0.77 | 22.79 |

Based on the figures above the Applicant considers that the additional cost of SCR over SNCR is not justified by the reduction in environmental impact. Thus, SCR is not BAT in this case, and SNCR is BAT for the Installation. The Applicant has justified the use of ammonia as the reagent due to the lower nitrous oxide formation. The Environment Agency agrees with this assessment.

The amount of ammonia used for NOx abatement will need to be optimised to maximise NOx reduction and minimise $NH^3$ slip. Improvement condition IC5 requires the Operator to report to the Environment Agency on optimising the performance of the NOx abatement system. A limit lower than the BAT AEL for ammonia has been set. The Applicant has proposed a limit for ammonia of 8 $mg/m^3$ rather than 10 $mg/m^3$. The Operator is also required to monitor and report on $N_2O$ emissions every quarter.

6.2.3 Acid Gases, $SO_x$, HCl and HF

| **Acid gases and halogens : Primary Measures** | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Low sulphur fuel, (< 0.1%S gasoil or natural gas)** | Reduces SOx at source | | Start-up, supplementary firing. | Where auxiliary fuel required. |

| | | | | |
|---|---|---|---|---|
| **Management of waste streams** | Disperses sources of acid gases (e.g. PVC) through feed. | Requires closer control of waste management | | All plant with heterogeneous waste feed |

| **Acid gases and halogens: Secondary Measures (BAT is to apply Primary Measures first)** | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Wet** | High reaction rates<br><br>Low solid residues production<br><br>Reagent delivery may be optimised by concentration and flow rate | Large effluent disposal and water consumption if not fully treated for re-cycle<br><br>Effluent treatment plant required<br><br>May result in wet plume<br><br>Energy required for effluent treatment and plume reheat | | Used for wide range of waste types<br><br>Can be used as polishing step after other techniques where emissions are high or variable |
| **Dry** | Low water use<br><br>Higher reagent consumption to achieve emissions of other FGC techniques but may be reduced by recycling in plant<br><br>Lower energy use<br><br>Higher reliability<br><br>Lowest visible plume potential | Higher solid residue production<br><br>Reagent consumption controlled only by input rate | | All plant |
| **Semi-dry (also described as** | Medium reaction rates | Higher solid waste residues | | All plant |

| | | | | |
|---|---|---|---|---|
| **semi-wet in the Bref)** | Reagent delivery may be varied by concentration and input rate | than wet but lower than dry system | | |
| **Direct injection into boiler** | Reduced acid loading to subsequent cleaning stages.<br>Reduced peak emissions and reduced reagent usage | | | Generally applicable to grate and rotary kiln plants. |
| **Direction desulphurisation** | Reduced boiler corrosion | Does not improve overall performance.<br>Can affect bottom ash quality.<br>Corrosion problems in flue gas cleaning system. | | Partial abatement upstream of other techniques in fluidised beds |
| **Reagent Type: Sodium Hydroxide** | Highest removal rates<br><br>Low solid waste production | Corrosive material<br><br>ETP sludge for disposal | | HWIs |
| **Reagent Type: Lime** | Very good removal rates<br><br>Low leaching solid residue<br><br>Temperature of reaction well suited to use with bag filters | Corrosive material<br><br>May give greater residue volume if no in-plant recycle | Wide range of uses | MWIs, CWIs |
| **Reagent Type: Sodium Bicarbonate** | Good removal rates<br><br>Easiest to handle<br><br>Dry recycle systems proven | Efficient temperature range may be at upper end for use with bag filters<br><br>Leachable solid residues<br><br>Bicarbonate more expensive | Not proven at large plant | CWIs |

The Applicant proposes to implement the following primary measures:

- Use of low sulphur fuels for start up and auxiliary burners – gas should be used if available, where fuel oil is used, this will be low sulphur (i.e. <0.1%), this will reduce $SO_x$ at source. The Applicant has justified its choice of gasoil as the support fuel on the basis of that previously described in section 6.1.1 above and we agree with that assessment.
- Management of heterogeneous wastes – this will disperse problem wastes such as PVC by ensuring a homogeneous waste feed.

There are five recognised techniques for secondary measures to reduce acid gases, all of which can be BAT. These are wet, dry, semi-dry, boiler sorbent injection and direct desulphurisation. Wet scrubbing produces an effluent for treatment and disposal in compliance with Article 46(3) of IED. It will also require reheat of the exhaust to avoid a visible plume. Wet scrubbing is unlikely to be BAT except where there are high acid gas and metal components in the exhaust gas as may be the case for some hazardous waste incinerators. In this case, the Applicant does not propose using wet scrubbing, and the Environment Agency agrees that wet scrubbing is not appropriate in this case.

The Applicant has considered dry and semi-dry methods of secondary measures for acid gas abatement. Any of these methods can be BAT for this type of facility.

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 materials are either lime or sodium bicarbonate. Both are effective at reducing acid gases, and dosing rates can be controlled from continuously monitoring acid gas emissions. The decision on which reagent to use is normally economic. Lime produces a lower leaching solid residue in the APC residues than sodium bicarbonate and the reaction temperature is well suited to bag filters, it tends to be lower cost, but it is a corrosive material and can generate a greater volume of solid waste residues than sodium bicarbonate. Both reagents are BAT, and the use of one over the other is not significant in environmental terms in this case.

Direct boiler injection is applicable for all plants and can improve overall performance of the acid gas abatement system as well as reducing reagent usage.

Reagent will be recirculated and optimised in order to reduce reagent consumption. Improvement condition IC5 requires the Operator to submit a report on optimisation.

In this case, the Applicant proposes to use a dry system with lime as the reagent. The Environment Agency is satisfied that this is BAT.

### 6.2.4 Carbon monoxide and volatile organic compounds (VOCs)

The prevention and minimisation of emissions of carbon monoxide and volatile organic compounds is through the optimisation of combustion controls, where all measures will increase the oxidation of these species.

| Carbon monoxide and volatile organic compounds (VOCs) | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Optimise combustion control** | All measures will increase oxidation of these species. | | Covered in section on furnace selection | All plants |

### 6.2.5 Dioxins and furans (and Other POPs)

| Dioxins and furans | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Optimise combustion control** | All measures will increase oxidation of these species. | | Covered in section on furnace selection | All plants |
| **Avoid *de novo* synthesis** | | | Covered in boiler design | All plant |
| **Effective Particulate matter removal** | | | Covered in section on particulate matter | All plant |
| **Activated Carbon injection** | Can be combined with acid gas absorber or fed separately. Metallic mercury is also absorbed. | Combined feed rate usually controlled by acid gas content. | | All plant.<br><br>Separate feed normally BAT unless feed is constant and acid gas control also controls dioxin release. |
| **Catalytic filter bags** | High destruction efficiency | Does not remove mercury. Higher cost than non-catalytic filter bags | | |

The prevention and minimisation of emissions of dioxins and furans is achieved through:

- optimisation of combustion control including the maintenance of permit conditions on combustion temperature and residence time, which has been considered in 6.1.1 above;

- avoidance of de novo synthesis, which has been covered in the consideration of boiler design;
- the effective removal of particulate matter, which has been considered in 6.2.1 above;
- injection of activated carbon. This can be combined with the acid gas reagent or dosed separately. Where the feed is combined, the combined feed rate will be controlled by the acid gas concentration in the exhaust. Therefore, separate feed of activated carbon would normally be considered BAT unless the feed was relatively constant. Effective control of acid gas emissions also assists in the control of dioxin releases.
- Use of catalytic filter bags. These can achieve low levels of emissions but mercury is not removed.

In this case the Applicant proposes separate feed of activated carbon and we are satisfied their proposals are BAT.

6.2.6 Metals

| **Metals** | | | | |
|---|---|---|---|---|
| **Technique** | **Advantages** | **Disadvantages** | **Optimisation** | **Defined as BAT in BREF or TGN for:** |
| **Effective Particulate matter removal** | | | Covered in section on particulate matter | All plant |
| **Activated Carbon injection for mercury recovery** | Can be combined with acid gas absorber or fed separately.<br><br>Can be impregnated with bromine or sulphur to enhance reactivity, for use during peak emissions. | Combined feed rate usually controlled by acid gas content. | | All plant.<br><br>Separate feed normally BAT unless feed is constant and acid gas control also controls dioxin release. |
| **Fixed or moving bed adsorption** | Mainly for mercury and other metals, as well as organic compounds | | | Limited applicability due to pressure drop |
| **Boiler bromine injection** | Injection during mercury peaks. Oxidation of mercury leading to improved | Consumption of aqueous bromine. Can lead to formation of polybrominated | | Not suitable for pyrolysis or gasification. Can deal with mercury peaks. |

| | | | | |
|---|---|---|---|---|
| | removal in downstream removal method. | dioxins. Can damage bag filter. Effects can be limited use is restricted to dealing with peak emissions | | |

The prevention and minimisation of metal emissions is achieved through the effective removal of particulate matter, and this has been considered in 6.2.1 above.

Unlike other metals however, mercury if present will be in the vapour phase. BAT for mercury removal is one or a combination of the techniques listed above. The Applicant has proposed dosing of activated carbon into the exhaust gas stream. This can be combined with the acid gas reagent or dosed separately. Where the feed is combined, the combined feed rate will be controlled by the acid gas concentration in the exhaust. Therefore, separate feed of activated carbon would normally be considered BAT unless the feed was relatively constant.

In this case the Applicant proposes separate feed of activated carbon and we are satisfied their proposals are BAT.

## 6.3 BAT and global warming potential

This section summarises the assessment of greenhouse gas impacts which has been made in the determination of this Permit. Emissions of carbon dioxide ($CO_2$) and other greenhouse gases differ from those of other pollutants in that, except at gross levels, they have no localised environmental impact. Their impact is at a global level and in terms of climate change. Nonetheless, $CO_2$ is clearly a pollutant for IED purposes.

The principal greenhouse gas emitted is $CO_2$, but the plant also emits small amounts of $N_2O$ arising from the operation of secondary $NO_x$ abatement. $N_2O$ has a global warming potential 310 times that of $CO_2$. The Applicant will therefore be required to optimise the performance of the secondary $NO_x$ abatement system to ensure its GWP impact is minimised.

The major source of greenhouse gas emissions from the installation is however $CO_2$ from the combustion of waste. There will also be $CO_2$ emissions from the burning of support fuels at start up, shut down and should it be necessary to maintain combustion temperatures. BAT for greenhouse gas emissions is to maximise energy recovery and efficiency.

The electricity that is generated by the Installation will displace emissions of $CO_2$ elsewhere in the UK, as virgin fossil fuels will not be burnt to create the same electricity.

The Installation is not subject to the Greenhouse Gas Emissions Trading Scheme Regulations 2012 therefore it is a requirement of IED to investigate how emissions of greenhouse gases emitted from the installation might be prevented or minimised.

Factors influencing GWP and $CO_2$ emissions from the Installation are:

On the debit side

- $CO_2$ emissions from the burning of the waste;
- $CO_2$ emissions from burning auxiliary or supplementary fuels;
- $CO_2$ emissions associated with electrical energy used;
- $N_2O$ from the de-NOx process.

On the credit side

- $CO_2$ saved from the export of electricity to the public supply by displacement of burning of virgin fuels;

The GWP of the plant will be dominated by the emissions of carbon dioxide that are released as a result of waste combustion. This will be constant for all options considered in the BAT assessment. Any differences in the GWP of the options in the BAT appraisal will therefore arise from small differences in energy recovery and in the amount of $N_2O$ emitted.

The Applicant considered energy efficiency and BAT for the de-NOx process in its BAT assessment. This is set out in sections 4.3.7 and 6.2.2 of this decision document.

Note: avoidance of methane which would be formed if the waste was landfilled has not been included in this assessment. If it were included due to its avoidance it would be included on the credit side. Ammonia has no direct GWP effect.

Taking all these factors into account, the Operator's assessment shows their preferred option is best in terms of GWP.

The Environment Agency agrees with this assessment and that the chosen option is BAT for the installation.

## 6.4 BAT and POPs

International action on Persistent Organic pollutants (POPs) is required under the UN's Stockholm Convention, which entered into force in 2004. The EU implemented the Convention through the POPs Regulation (2019/1021), which is directly applicable in UK law. The Environment Agency is required by national POPs Regulations (SI 2007 No 3106) to give effect to Article 6(3) of the EC POPs Regulation when determining applications for environmental Permits.

However, it needs to be borne in mind that this application is for a particular type of installation, namely a waste incinerator. The Stockholm Convention distinguishes between intentionally-produced and unintentionally-produced POPs. Intentionally-produced POPs are those used deliberately (mainly in the past) in agriculture (primarily as pesticides) and industry. Those intentionally-produced POPs are not relevant where waste incineration is concerned, as in fact high-temperature incineration is one of the prescribed methods for destroying POPs.

The unintentionally-produced POPs addressed by the Convention are:

- dioxins and furans;
- HCB (hexachlorobenzene)

- PCBs (polychlorobiphenyls) and
- PeCB (pentachlorobenzene)

The UK's national implementation plan for the Stockholm Convention, published in 2007, makes explicit that the relevant controls for unintentionally-produced POPs, such as might be produced by waste incineration, are delivered through the requirements of IED. That would include an examination of BAT, including potential alternative techniques, with a view to preventing or minimising harmful emissions. These have been applied as explained in this document, which explicitly addresses alternative techniques and BAT for the minimisation of emissions of dioxins.

Our legal obligation, under regulation 4(b) of the POPs Regulations, is, when considering an application for an environmental permit, to comply with article 6(3) of the POPs Regulation:

> "Member States shall, when considering proposals to construct new facilities or to significantly modify existing facilities using processes that release chemicals listed in Annex III, give priority consideration to alternative processes, techniques or practices that have similar usefulness but which avoid the formation and release of substances listed in Annex III, without prejudice to Directive 2010/75/EU of the European Parliament and of the Council"

The 1998 Protocol to the Convention recommended that unintentionally produced POPs should be controlled by imposing emission limits (e.g 0.1 ng/$m^3$ for MWIs) and using BAT for incineration. UN Economic Commission for Europe (Executive Body for the Convention) (ECE-EB) produced BAT guidance for the parties to the Convention in 2009. This document considers various control techniques and concludes that primary measures involving management of feed material by reducing halogenated substances are not technically effective. This is not surprising because halogenated wastes still need to be disposed of and because POPs can be generated from relatively low concentrations of halogens. In summary, the successful control techniques for waste incinerators listed in the ECE-EB BAT are:

- maintaining furnace temperature of 850$^o$C and a combustion gas residence time of at least 2 seconds
- rapid cooling of flue gases to avoid the *de novo* reformation temperature range of 250-450$^o$C
- use of bag filters and the injection of activated carbon or coke to adsorb residual POPs components.

Using the methods listed above, the UN-ECE BAT document concludes that incinerators can achieve an emission concentration of 0.1 ng TEQ/$m^3$.

We believe that the Permit ensures that the formation and release of POPs will be prevented or minimised. As we explain above, high-temperature incineration is one of the prescribed methods for destroying POPs. Permit conditions are based on the use of BAT and Chapter IV of IED and incorporate all the above requirements of the UN-ECE BAT guidance and deliver the requirements of the Stockholm Convention in relation to unintentionally produced POPs.

The release of **dioxins and furans** to air is required by the IED to be assessed against the I-TEQ (International Toxic Equivalence) limit of 0.1 ng/m$^3$. Further development of the understanding of the harm caused by dioxins has resulted in the World Health Organisation (WHO) producing updated factors to calculate the WHO-TEQ value. Certain **PCBs** have structures which make them behave like dioxins (dioxin-like PCBs), and these also have toxic equivalence factors defined by WHO to make them capable of being considered together with dioxins. The UK's independent health advisory committee, the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) has adopted WHO-TEQ values for both dioxins and dioxin-like PCBs in their review of Tolerable Daily Intake (TDI) criteria. The Permit requires that, in addition to the requirements of the IED, the WHO-TEQ values for both dioxins and dioxin-like PCBs should be monitored for reporting purposes, to enable evaluation of exposure to dioxins and dioxin-like PCBs to be made using the revised TDI recommended by COT. The release of dioxin-like PCBs and PAHs is expected to be low where measures have been taken to control dioxin releases. The Permit also requires monitoring of a range of PAHs and dioxin-like PCBs at the same frequency as dioxins are monitored. We have included a requirement to monitor and report against these WHO-TEQ values for dioxins and dioxin-like PCBs and the range of PAHs as listed in the Permit. We are confident that the measures taken to control the release of dioxins will also control the releases of dioxin-like PCBs and PAHs. Section 5.2.1 of this document details the assessment of emissions to air, which includes dioxins and concludes that there will be no adverse effect on human health from either normal or abnormal operation.

**Hexachlorobenzene** (HCB) is released into the atmosphere as an accidental product from the combustion of coal, waste incineration and certain metal processes. It has also been used as a fungicide, especially for seed treatment although this use has been banned in the UK since 1975. Natural fires and volcanoes may serve as natural sources. Releases of (HCB) are addressed by the European Environment Agency (EEA), which advises that:

> "*due to comparatively low levels in emissions from most (combustion) processes special measures for HCB control are usually not proposed. HCB emissions can be controlled generally like other chlorinated organic compounds in emissions, for instance dioxins/furans and PCBs: regulation of time of combustion, combustion temperature, temperature in cleaning devices, sorbents application for waste gases cleaning etc*." [reference http://www.eea.europa.eu/publications/EMEPCORINAIR4/sources_of_HCB.pdf]

**Pentachlorobenzene** (PeCB) is another of the POPs list to be considered under incineration. PeCB has been used as a fungicide or flame retardant, there is no data available however on production, recent or past, outside the UN-ECE region. PeCBs can be emitted from the same sources as for PCDD/F: waste incineration, thermal metallurgic processes and combustion plants providing energy. As discussed above, the control techniques described in the UN-ECE BAT guidance and included in the permit, are effective in controlling the emissions of all relevant POPs including PeCB.

We have assessed the control techniques proposed for dioxins by the Applicant and have concluded that they are appropriate for dioxin control. We are confident that

these controls are in line with the UN-ECE BAT guidance and will minimise the release of HCB, PCB and PeCB.

We are therefore satisfied that the substantive requirements of the Convention and the POPs Regulation have been addressed and complied with.

## 6.5 Other Emissions to the Environment

### 6.5.1 Emissions to water

Surface water run-off from vehicle movement areas, roadways and building roofs will be collected in a surface water drainage system. The surface water drainage system will be fitted with a retention interceptor and swales, prior to the discharge point, to prevent discharge of oils and sediment collected from vehicle movement areas and roadways being released off-site. All surface water run-off will be discharged, via separate discharge points, to Balaclava Bay (east) via emission point W1, and/or Portland Harbour via emission point W2.

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.

### 6.5.2 Emissions to sewer

Process wastewaters from the installation will normally be re-used/ recycled within the process, for example in the ash quench system. If excess wastewaters are produced, for example during boiler draining, this will be discharged to foul sewer via emission point S1 in accordance with a Trade Effluent Consent secured from the local sewerage undertaker prior to commencement of operations.

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.

### 6.5.3 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 of Article 46(5) must be arranged.

The Applicant has proposed the following key measures:

- Raw material storage facilities, such as tanks and silos, will back-vent to the tanker during silo loading operations
- Silo vents will be fitted with bag filter protection
- APCr silo will back-vent into the tanker during silo unloading operations
- Waste handling will take place within an indoor waste reception building kept under negative pressure

- Good housekeeping within waste reception building
- Chemicals stored with suitably designed secondary and tertiary containment measures in place, designed in accordance with recognised industry good practice
- Bunded chemical storage tanks used as appropriate
- Tanker off-loading of chemicals will take place in areas with contained drainage
- Storage areas provided with contained drainage
- Adequate quantities of spillage absorbent materials will be made available at easily accessible location(s), where chemicals are stored
- Spillages with the potential to cause environmental harm, or to leave the installation will be reported to the site management and recorded in accordance with inspection, audit and reporting procedures
- Effectiveness of site emergency response procedures will be subject to management review and will be revised and updated as appropriate following any major spillages
- In the event of a fire, contaminated fire water will be collected through the surface water drainage system which will be fitted with an isolation valve to prevent the discharge of water from the drainage system in the event of a fire.

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

6.5.4 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. The unloading and bulk storage of waste will only occur indoors within the waste reception building. The main access doors to the reception building are fast closing roller shutters and will be kept closed (except during vehicles coming in and leaving) to maintain odour control.

In order to prevent odours and airborne particulates from leaving the waste reception building it will be maintained at negative pressure and air from the bale storage area and waste storage bunker will be extracted to be used as combustion air within the waste incineration plant.

Bunker management procedures (mixing and periodic emptying and cleaning) will be developed as part of the sites management system and implemented to avoid the development of anaerobic conditions in the waste storage bunker, which could generate odorous emissions.

During normal operation, daily inspections will be undertaken to monitor for odour including the waste reception area, and external boundary.

During shutdown periods odour will be controlled by minimising the amount of waste in storage. Waste will be run-down prior to periods of planned maintenance and bunker management procedures would not normally be implemented during this time to avoid the generation of odorous emissions especially when waste volumes within the bunker are low.

Where possible, negative pressure will be maintained by using the Induced Draft fan to draw air from above the waste bunker into the boiler and release from the stack to aid dispersion of potential pollutants.

In the event of an extended unplanned shutdown, if unacceptable levels of odour are identified at the installation boundary, waste would be unloaded from the waste storage bunker, or the bale storage area, for transfer off-site to a suitably licensed waste management facility.

During shutdown the frequency of the site inspections would be extended, including monitoring combustion air flow if the induced draft fan operation can be maintained, for instance during periods of maintenance. Daily sniff tests will be implemented at the site boundary. In addition, doors to the waste reception building will be kept shut during periods of shutdown.

The operation of the installation will not give rise to odorous liquid wastes. Therefore, the requirement to store liquid wastes in tanks under controlled pressure and duct the tank vents to the combustion air feed or other suitable abatement system will not apply to the Facility.

Odour condition 3.4.2 will require the implementation of an odour management plan if deemed necessary by the Environment Agency. If required this could ultimately require changes to be made on site if it is deemed that improvements are necessary.

### 6.5.5 Noise and vibration

The Application contained an assessment of the potential noise impact during operation of the installation. However, due to additional noise sensitive receptors (The Bibby Stockholm (“the barge”)) being introduced during determination of the permit application we requested additional information through a Schedule 5 notice dated 08/09/2023. The Applicant provided a revised noise impact (NIA) assessment to address the Schedule 5 requests, undertaking the following:

- Measured baseline sound survey data at the barge receptor.
- Measured additional baseline sound survey data at other receptors which were assessed previously, to account for potential changes to the underlying sound climate since 2021.
- Measured operational sound levels for operational generators present at the barge receptor and undertaking noise modelling to demonstrate whether the generators could have affected the baseline sound survey at other receptors (excluding the barge itself).

- Updated their BS 4142 impact assessment at nearest noise sensitive receptors based on the new background sound data.
- Proposed mitigation measures for the stack and turbine hall to reduce the predicted BS 4142 impacts, and revised noise modelling to account for the proposed measures.

The revised NIA supersedes the NIA submitted with the application. Our assessment, summarised below, is therefore based on the revised NIA.

The barge left Portland at the end of January 2025; however, it was considered a sensitive receptor during our Permit determination process. We have retained the details of our assessment for this receptor in the Decision Document as a record of that assessment.

The NIA is based on the modelling software package SoundPlan which is a commonly used computer model for regulatory noise modelling. As the site is proposed to operate on a 24/7 basis the Applicant assessed potential impacts during both daytime and night time periods. The assessment was carried out in accordance with the methodology contained within British Standard BS4142:2014+A1:2019, 'Methods for rating and assessing industrial and commercial sound.'

The significance of industrial/commercial sound depends on the difference between the "rating level" (which is the predicted sound output of the industrial/commercial premises, corrected to account for tonality, impulsivity, intermittency or other applicable sound characteristics) and the background sound level. Typically, the greater the difference, the greater the magnitude of the impact. A difference of around +10dB or more is likely to be an indication of a significant adverse impact, while a difference of around +5dB is likely to be an indication of an adverse impact. The lower the rating is, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. If the rating level does not exceed the background sound level, this is an indication of a low impact. BS4142:2014 requires that the assessment of potential impact takes into account the 'context' in which the sound occurs. This entails having a sufficient understanding of the situation to be rated and assessed, and placing the sound being assessed in context when making conclusions.

The Applicant's noise impact assessment identified local noise sensitive receptors (NSR's), and potential sources of noise at the proposed installation. While the majority of sound sources at the installation will be located indoors, external sound emissions will arise from the flue stack, air cooled condensers (ACCs) and HGV movements around the site.

The modelling software was used to calculate rating levels at nearby noise sensitive receptors (NSR's) including HMP The Verne to the south-west and the Bibby Stockholm to the west north-west which we consider to be the closest NSRs, and residential properties located due west of the installation at East Weare Road, Leet Close and Beel Close. We are satisfied that the Applicant identified the nearest NSRs to the installation and that these receptors are also protective of other NSRs.

In order to establish background sound levels, measurements of the prevailing ambient noise levels were taken at several locations close to the NSRs for 5 days (including a

weekend period) during April 2021 and again for 9 days (including a weekend period) during September 2023. Generally we considered that the baseline survey was appropriate and in accordance with the BS4142 methodology.

The way in which the Applicant has used the noise model, the selection of input data, use of background data and the assumptions made have been reviewed by the Environment Agency's modelling specialists to establish the robustness of the Applicant's noise impact assessment. Our view is that the methodology used by the Applicant is acceptable.

We carried out sensitivity analysis and check modelling of the Applicant's BS4142 assessment, based on the model input data that they used. Their assessment indicated low and below adverse impacts during daytime and night-time hours at the nearest noise sensitive receptors, when considering context.

As per the previous NIA, the consultant has not presented a BS4142 impact assessment for receptors at HMP The Verne. It is not clear why this receptor has been omitted from the impact assessment, as background sound levels and rating sound levels are presented in Table 1 and Table 4 of the NIA respectively which can facilitate a BS4142 impact assessment. We have considered this NSR as part of our sensitivity analysis and check modelling.

Having reviewed the Applicant's BS4142 assessment and carried out our own check modelling and sensitivity analysis we consider that the worst-case rating levels at NSR's (including HMP The Verne) may be marginally higher than those presented by the Applicant, and without mitigation, we cannot rule out adverse impacts day and night at Top of Verne Common Road and HMP The Verne. For other NSRs, including The Bibby Stockholm, our checks indicate below adverse impacts day and night.

The Applicant has proposed the following additional mitigation measures to reduce their predicted BS4142 impacts:

- Stack: 5dB attenuation at source, achieved by locating in-line attenuators after the induced draft (ID) fans and just prior to the stack, with a suitably designed splitter configuration to attenuate across broadband frequencies but also designed to mitigate the blade passage frequency.
- Boiler room western façade: cladding panel with sound insulation of $R_w$ 30 dB.
- Turbine Hall northern façade: cladding panel with sound insulation of $R_w$ 30 dB.
- Turbine Hall louvre: 600mm acoustic louvre with sound insulation of $R_w$ 24 dB.

The Applicant has revised their noise modelling to incorporate these measures and concludes that with the mitigation in place, the BS4142 impacts would be low at all receptors during day and night periods. Having reviewed the Applicant's revised BS4142 assessment including the proposed mitigation and carried out our own check modelling and sensitivity analysis we consider that the worst-case rating levels at NSR's (including HMP The Verne) may be marginally higher than those presented by the Applicant. However, we consider that with the proposed mitigation measures in place, the likely impacts at the most impacted receptors will be below adverse impacts day and night.

We consider that the mitigation measures proposed by the Applicant should be incorporated into the final design. We have set improvement condition (IC12) requiring the Applicant to confirm and implement the proposed mitigation measures to minimise the noise impacts identified from the stack, boiler room and turbine hall. The improvement condition also requires the Applicant to undertake a further Noise Impact Assessment during commissioning to validate the post mitigation noise impacts.

Based upon the information in the Application and updated Noise Impact Assessment combined with the information required through improvement condition (IC12) 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.

## 6.6 Setting ELVs and other Permit conditions

### 6.6.1 Translating BAT into Permit conditions

Article 14(3) of IED states that BAT conclusions 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 best available techniques as laid down in the decisions on BAT conclusions.

BAT conclusions for waste incineration or co-incineration were published on 3rd December 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 Applicant's proposals are BAT, and that there is no justification to reduce ELVs below the BAT AELs and Chapter IV limits.

In the BREF, BAT is regarded as installing Selective Non Catalytic Reduction (SNCR), to control oxides of nitrogen (NOx) emissions, with the corresponding ELV for ammonia as 10 mg/m$^3$. However, due to the efficiency of the applicant's unit, a limit lower than the BREF is achievable. The applicant has proposed a limit for ammonia which is tighter than the BREF incineration emission limit (8 mg/m$^3$ rather than 10 mg/m$^3$). This has been used in the assessment and permit conditions reflect this tighter emission limit.

Below we consider whether, for those emission 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 (Article 18).

(i) Local factors

We have considered the location in assessing BAT. However, no measures beyond BAT were required. We are satisfied that the measures described above as BAT will ensure a high level of protection for the environment as a whole at this location.

(ii) National and European ESs

We are satisfied that the Installation will not result in an exceedance of any National or European ES.

(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 emission limit value 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 IED, which lists the main polluting substances that are to be considered when setting emission limit values (ELVs) in Permits.

We have therefore considered setting equivalent parameters or technical measures for $CO_2$. However, provided energy is recovered efficiently (see section 4.3.7 above), 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 destruction of 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

Before the plant can become fully operational it will be necessary for it to be commissioned. Before commissioning can commence the Operator is required by pre-operational condition PO4 to submit a commissioning plan to the Environment Agency for approval. Commissioning can only begin and be carried out in accordance with the approved proposals in the plan. Pre-operational condition PO4 will ensure that measures to protect the environment during commissioning are agreed with the Environment Agency.

The Operator will also be required to submit a written report to the Environment Agency on the commissioning of the installation within 4 months of completion of commissioning, in accordance with Improvement Condition IC3. In the report they will be required to summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report will also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions and confirm that the Environmental Management System (EMS) has been updated accordingly.

## 6.7 Monitoring

### 6.7.1 Monitoring during normal operations

We have decided that monitoring should be carried out for the parameters listed in Schedule 3 using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with emission limit values and to enable correction of measured concentration of substances to the appropriate reference conditions; to gather information about the performance of the SNCR system; to establish data on the release of dioxin-like PCBs and PAHs from the incineration process and to deliver the requirements of Chapter IV of IED for monitoring of residues and temperature in the combustion chamber.

For emissions to air, the methods for continuous and periodic monitoring are in accordance with the Environment Agency's Guidance M2 for monitoring of stack emissions to air.

Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the Operator's techniques, personnel and equipment will have either MCERTS certification or MCERTS accreditation as appropriate.

### 6.7.2 Monitoring under abnormal operations arising from the failure of the installed CEMs

The Operator has stated that they will provide back-up CEMS working in parallel to the operating CEMS. These will be switched into full operation immediately in the event that there is any failure in the regular monitoring equipment. The back-up CEMS measure the same parameters as the operating CEMS. In the unlikely event that the back-up CEMS also fail Condition 2.3.12 of the permit requires that the abnormal operating conditions apply.

### 6.7.3 Continuous emissions monitoring for dioxins and heavy metals

The BAT conclusions specify either manual extractive monitoring or long term monitoring for dioxins. For mercury either continuous or long term monitoring is specified, manual extractive monitoring is specified for other metals.

For dioxins long term monitoring does not apply if emissions are stable, and for mercury long term monitoring can be used instead of continuous if the mercury content of the waste is low and stable.

Based on the waste types and control measures proposed in the Application we expect that emissions of dioxins will be stable and that the mercury content of the waste will be low and stable. We have therefore set manual extractive monitoring in the Permit. However, the Permit requires the stable and low criteria to be demonstrated through Improvement conditions IC9 and IC10 and we can require long term monitoring for dioxins and continuous monitoring for mercury if required.

## 6.8 Reporting

We have specified the reporting requirements in Schedule 4 of the Permit either to meet the reporting requirements set out in the IED, or to ensure data is reported to enable timely review by the Environment Agency to ensure compliance with permit conditions and to monitor the efficiency of material use and energy recovery at the installation.

# 7 Other legal requirements

In this section we explain how we have addressed other relevant legal requirements, to the extent that we have not addressed them elsewhere in this document.

## 7.1 The EPR 2016 and related Directives

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

### 7.1.1 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.

In determining the Application we have considered the following documents: -

- The Environmental Statement submitted with the planning application (which also formed part of the Environmental Permit Application).
- The decision of Dorset Council to refuse planning permission on 24 March 2023.
- The report and decision notice of the local planning authority accompanying the refusal of planning permission.
- The response of the Environment Agency to the local planning authority in its role as consultee to the planning process.

We have reviewed the reasons given for the refusal of planning permission and specifically whether this conclusion is based on information given in the Environmental

Statement. We are satisfied that these matters are entirely matters of planning policy and not relevant to our determination. The pollution control and planning regimes are intended to be complementary and should avoid duplication.

From our consideration of all the documents above, the Environment Agency considers that no additional or different conditions are necessary.

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.

7.1.2 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:

- the types and quantities of waste that may be treated;
- for each type of operation permitted, the technical and any other requirements relevant to the site concerned;
- the safety and precautionary measures to be taken;
- the method to be used for each type of operation;
- such monitoring and control operations as may be necessary;
- 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.

#### 7.1.3 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.

#### 7.1.4 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 being consulted upon in line with this statement, as well as with our guidance RGS6 on Sites of High Public Interest, which addresses specifically extended consultation arrangements for determinations where public interest is particularly high. This satisfies the requirements of the Public Participation Directive.

Our decision in this case has been reached following a programme of extended public consultation, on the original application. The way in which this has been done is set out in Section 2. A summary of the responses received to our consultations and our consideration of them is set out in Annex 4.

### 7.2 National primary legislation

#### 7.2.1 **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.

(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 applicant 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.

(viii) National Emissions Ceiling Regulations 2018

We have had regard to the National Air Pollution Control Programme 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

### 7.2.2 **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.

### 7.2.3 **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 applicant to comply and grow, so that burdens have only been imposed where they are necessary and proportionate.

### 7.2.4 **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.

### 7.2.5 **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).

During the consultation on the application, we received a lot of responses expressing concern over potential impacts on the AONB. However, visual impacts are not within our remit and are covered by the planning process. The installation is outside of the boundaries of the Dorset AONB. It is located approximately 7km due south of the Dorset AONB, the coastal portion of which stretches from Lyme Regis to the west, across to Poole and Swanage to the east.

In assessing the application, we have taken into account our duty under the Act and consider that no different or additional conditions in the Permit are required.

### 7.2.6 **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.

We assessed the Application and concluded that the Installation will not damage the special features of any SSSI. This was recorded on a CROW Appendix 4 form. Due to some of the SSSIs overlapping the sites which have been considered in our HRA, the CROW Appendix 4 assessment was sent to Natural England for completeness.

The CROW assessment is summarised in greater detail in section 5.4 of this document. A copy of the full Appendix 4 Assessment can be found on the public register.

### 7.2.7 **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 of the general biodiversity objective, which is to further the conservation and enhancement of biodiversity through the exercise of our functions. We have 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.

### 7.2.8 **Marine and Coastal Access Act 2009**

Section 58 of this Act requires us to act in accordance with appropriate marine policy documents, unless relevant considerations indicate otherwise.

Section 125 of this Act requires that, so far as is consistent with their proper exercise, we exercise our functions in a manner that we consider best furthers the conservation objectives stated for Marine Conservation Zone(s) (MCZs) certain features of which are capable of being affected by our determination (to more than an insignificant

degree) or else, where this is not possible, which least hinders the achievement of those objectives.

Section 126 of this Act requires that, before granting a Permit for an Installation capable of affecting certain features of a MCZ(s) (to more than an insignificant degree), we consult with Natural England and that we are satisfied that there is no significant risk of the operation of the Installation hindering the achievement of the conservation objectives stated for any relevant MCZ(s).

### 7.2.9 **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.

### 7.2.10 **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.

### 7.2.11 **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.

## 7.3 National secondary legislation

### 7.3.1 **Conservation of Habitats and Species Regulations 2017**

We assessed the Application in accordance with our guidance and concluded that for the purposes of the Habitats Regulations there will be likely significant effects on any

European Site and undertook an Appropriate Assessment (Habitats Regulations Assessment Stage 2) of those effects.

We consulted Natural England on the appropriate assessment, and they agreed with our conclusion, that the operation of the Installation would not have adverse effects on the interest features of European sites.

The Habitats Regulations Assessment is summarised in greater detail in section 5.4 of this document. A copy of the Habitats Regulations Assessment can be found on the public register.

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.

### 7.3.2 **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 (inter alia) 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.

### 7.3.3 **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.

### 7.3.4 **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.

### 7.3.5 **Marine Strategy Regulations 2010**

In relation to Regulation 9 of the Marine Strategy Regulations 2010 we have had regard to the marine strategy (in so far as it has been developed and published to date) and consider that there is nothing in it which would lead us to any different conclusions from those we have already reached through our other marine assessments.

## 7.4 Other relevant legal requirements

### 7.4.1 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.

The way in which the Environment Agency has consulted with the public and other interested parties is set out in section 2 of this document. The way in which we have taken account of the representations we have received is set out in Annex 4. Our public consultation duties are also set out in the EP Regulations, and our statutory Public Participation Statement, which implement the requirements of the Public Participation Directive. In addition to meeting our consultation responsibilities, we have also taken account of our guidance in Environment Agency Guidance Note RGS6.

# Annexes

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

| 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)(b) | The permit shall include the total waste incinerating or co-incinerating capacity of the plant. | 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)(d) | The permit shall include the requirements for pH, temperature and flow of waste water discharges. | Not Applicable |
| 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 3.6.4 and Tables S3.1, S3.1(a), 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 waste water may exceed the prescribed emission limit values. | Condition 2.3.11 and 2.3.12 |
| 45(2)(a) | The permit shall include a list of the quantities of the different categories of hazardous waste which may be treated. | Not Applicable |
| 45(2)(b) | The permit shall include the minimum and maximum mass flows of those hazardous waste, | Not Applicable |

| IED Article | Requirement | Delivered by |
|---|---|---|
| | their lowest and maximum calorific values and the maximum contents of polychlorinated biphenyls, pentachlorophenol, chlorine, fluorine, sulphur, heavy metals and other polluting substances. | |
| 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 2.3.1and Table S1.2 of Schedule 1 of the Permit. |
| 46(2) | Emission into air shall not exceed the emission limit values set out in part 3 of Annex VI. | Conditions 3.1.1 and 3.1.2 and Tables S3.1, S3.1a. |
| 46(3) | Relates to conditions for water discharges from the cleaning of exhaust gases. | There are no such discharges as condition 3.1.1 prohibits this. |
| 46(4) | Relates to conditions for water discharges from the cleaning of exhaust gases. | There are no such discharges as condition 3.1.1 prohibits this. |
| 46(5) | Prevention of unauthorised and accidental release of any polluting substances into soil, surface water or groundwater.<br>Adequate storage capacity for contaminated rainwater run-off from the site or for contaminated water from spillage or fire-fighting. | The application explains the measures to be in place for achieving the directive 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. |
| 46(6) | Limits the maximum period of operation when an ELV is exceeded to 4 hours uninterrupted duration in any one instance, and with a maximum cumulative limit of 60 hours per year.<br>Limits on dust (150 $mg/m^3$), CO and TOC not to be exceeded during this period. | Condition 2.3.16 |
| 47 | In the event of breakdown, reduce or close down operations as soon as practicable. | Conditions 2.3.9 to 2.3.13 |

| IED Article | Requirement | Delivered by |
|---|---|---|
| | Limits on dust (150 mg/m$^3$), CO and TOC not to be exceeded during this period. | |
| 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(2) | Installation and functioning of the automated measurement systems shall be subject to control and to annual surveillance tests as set out in point 1 of Part 6 of Annex VI. | Conditions 3.6.1, 3.6.3, table S3.1, S3.1(a), and S3.4 |
| 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 PO8 and IC11 |
| 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) |
| 50(1) | Slag and bottom ash to have Total Organic Carbon (TOC) < 3% or loss on ignition (LOI) < 5%. | Conditions 3.6.1 and Table S3.5 |
| 50(2) | Flue gas to be raised to a temperature of 850ºC for two seconds, as measured at representative point of the combustion chamber. | Condition 2.3.9, Pre-operational condition PO6 and Improvement condition IC4 and Table S3.4 |
| 50(3) | At least one auxiliary burner which must not be fed with fuels which can cause higher emissions than those resulting from the burning of gas oil liquefied gas or natural gas. | Condition 2.3.14 |

| IED Article | Requirement | Delivered by |
|---|---|---|
| 50(4)(a) | Automatic shut-down to prevent waste feed if at start up until the specified temperature has been reached. | Condition 2.3.9 |
| 50(4)(b) | Automatic shut-down to prevent waste feed if the combustion temperature is not maintained. | Condition 2.3.9 |
| 50(4)(c) | Automatic shut-down to prevent waste feed if the CEMs show that ELVs are exceeded due to disturbances or failure of waste cleaning devices. | Condition 2.3.9 and 2.3.13 |
| 50(5) | Any heat generated from the process shall be recovered as far as practicable. | (a) The plant will generate electricity (b)Operator to review the available heat recovery options prior to commissioning (Condition PO2) and then every 2 years (Conditions 1.2.1 to 1.2.3) |
| 50(6) | Relates to the feeding of infectious clinical waste into the furnace. | No infectious clinical waste will be burnt |
| 50(7) | Management of the Installation to be in the hands of a natural person who is competent to manage it. | Conditions 1.1.1 to 1.1.3 and 2.3.1 of the Permit. |
| 51(1) | Different conditions than those laid down in Article 50(1), (2) and (3) and, as regards the temperature Article 50(4) may be authorised, provided the other requirements of this chapter are me. | No such conditions Have been allowed |
| 51(2) | Changes in operating conditions do not cause more residues or residues with a higher content of organic polluting substances compared to those residues which could be expected under the conditions laid down in Articles 50(1), (2) and (3). | No such conditions Have been allowed |
| 51(3) | Changes in operating conditions shall include emission limit values for CO and TOC set out in Part 3 of Annex VI. | No such conditions Have been allowed |
| 52(1) | Take all necessary precautions | Conditions 2.3.1, 2.3.3, 3.3, 3.4, 3.5 and 3.7 |

| IED Article | Requirement | Delivered by |
|---|---|---|
| | concerning delivery and reception of wastes, to prevent or minimise pollution. | |
| 52(2) | Determine the mass of each category of wastes, if possible according to the EWC, prior to accepting the waste. | Condition 2.3.4(a) and Table S2.2 in Schedule 3 of the Permit. |
| 52(3) | Prior to accepting hazardous waste, the operator shall collect available information about the waste for the purpose of compliance with the permit requirements specified in Article 45(2). | Not Applicable |
| 52(4) | Prior to accepting hazardous waste, the operator shall carry out the procedures set out in Article 52(4). | Not Applicable |
| 52(5) | Granting of exemptions from Article 52(2), (3) and (4). | Not Applicable |
| 53(1) | Residues to be minimised in their amount and harmfulness, and recycled where appropriate. | Conditions 1.4.1, 1.4.2 and 3.6.1 with Table S3.5 |
| 53(2) | Prevent dispersal of dry residues and dust during transport and storage. | Conditions 1.4.1 2.3.1, 2.3.2 and 3.3.1. |
| 53(3) | Test residues for their physical and chemical characteristics and polluting potential including heavy metal content (soluble fraction). | Condition 3.6.1 and Table S3.5 and pre-operational condition PO3. |
| 55(1) | Application, decision and permit to be publicly available. | All documents are accessible from the Environment Agency Public Register. |
| 55(2) | An annual report on plant operation and monitoring for all plants burning more than 2 tonne/hour waste. | Condition 4.2.2 and 4.2.3. |

## Annex 1B: Compliance with Bat Conclusions

| BAT conclusion | Criteria | Delivered by |
|---|---|---|
| 1 | Implement environmental management system | Condition 1.1 and Pre-operational condition PO1 |
| 2 | Determine gross electrical efficiency | Section 4.3.7 of this decision document.<br><br>Permit table S3.4 |
| 3 | Monitor key process parameters | Condition 3.6.1 and table S3.4 |
| 4 | Monitoring emissions to air | Condition 3.6.1 and table S3.1 |
| 5 | Monitoring emissions to air during OTNOC | Condition 1.1.1 and pre-operational condition PO1 |
| 6 | Monitoring emissions to water from flue gas treatment and/or bottom ash treatment | There are no such emissions from the installation |
| 7 | Monitor unburnt substances in slags and bottom ashes | Conditions 3.1.3 and 3.6.1, and table S3.5 |
| 8 | Analysis of hazardous waste | Not applicable |
| 9 | Waste stream management techniques | The Application explains the measures that will be used. Permit condition 2.3.1, table S1.2 |
| 10 | Quality management system for bottom ash treatment plant | Not applicable |
| 11 | Monitor waste deliveries as part of waste acceptance procedures | The Application explains the measures that will be used. Permit condition 2.3.1, table S1.2 |
| 12 | Reception, handling and storage of waste | Measures are described in the Application and FPP. Permit conditions 2.3.1, conditions 3.8.1 and 3.8.2.<br>Pre-operational condition PO10 |
| 13 | Storage and handling of clinical waste | Not applicable |

| BAT conclusion | Criteria | Delivered by |
|---|---|---|
| 14 | Improve overall performance of plant including BAT-AELs for TOC or LOI | Techniques described in the Application. Permit condition 2.3.1, table S1.2, 3.1.3 and table S3.5 |
| 15 | Procedures to adjust plant settings to control performance | Measures described in the Application,condition 2.3.1 and table S1.2 |
| 16 | Procedures to minimise start-up and shut down | Measures described in the Application and condition 2.3.1 |
| 17 | Appropriate design, operation and maintenance of FGC system | FGC measures described in Application. Operation and maintenance procedures will form part of the EMS |
| 18 | OTNOC management plan | Pre-operational condition PO1 |
| 19 | Use of heat recovery boiler | Described in the Application. Permit condition 2.3.1, table S1.2 |
| 20 | Measures to increase energy efficiency and BAT AEEL | Measures described in the Application. Permit condition 2.3.1, table S1.2<br>Section 4.3.7 of this decision document. |
| 21 | Measures to prevent or reduce diffuse emissions including odour | Measures described in the Application. Permit conditions 2.3.1, table S1.2, 3.4.1, 3.3.1, 3.3.2.<br>Sections 4.2.2, 6.5.3 and 6.5.4 of this decision document. |
| 22 | Handling of gaseous and liquid wastes | Not applicable |
| 23 | Management system to prevent or reduce dust emissions from treatment of slags and ashes | Not applicable |
| 24 | Techniques to prevent or reduce diffuse emissions to air from treatment of slags and ashes | Not applicable |
| 25 | Minimisation of dust and metal emissions and compliance with BAT AEL | Section 5.2 of this decision document.<br>Permit conditions 2.3.1, table S1.2, 3.3.1, 3.3.2. 3.1.1 and 3.1.2 and table S3.1 |

| BAT conclusion | Criteria | Delivered by |
|---|---|---|
| 26 | Techniques and BAT AEL for dust emissions from enclosed slags and ashes treatment | Not applicable |
| 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 Permit condition 2.3.1 and table S1.2<br>Section 5.2 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.<br>Permit conditions 2.3.1, table S1.2, 3.1.1 and 3.1.2 and table S3.1 |
| 29 | Techniques to reduce emissions of $NO_2$, $N_2O$, CO and $NH_3$ and BAT AELs | Measures described in the Application.<br>Section 5.2 of this decision document.<br>Permit conditions 2.3.1, table S1.2, 3.1.1 and 3.1.2 and table S3.1 |
| 30 | Reduce emissions or organic compounds including dioxins/furans and PCBs. BAT AELs | Measures described in the Application.<br>Section 5.2 of this decision document.<br>Permit conditions 2.3.1, table S1.2, 3.1.1 and 3.1.2 and table S3.1 |
| 31 | Reduce emissions of mercury. BAT AEL | Measures described in the Application.<br>Section 5.2 of this decision document.<br>Permit conditions 2.3.1, table S1.2, 3.1.1 and 3.1.2 and table S3.1 |
| 32 | Segregate waste water streams to prevent contamination | Measures described in the Application<br>Sections 4.2.2, 6.5.1 and 6.5.3 of this decision document.<br>Permit conditions 2.3.1, table S1.2, 3.1.1, 3.1.2 and table S3.2 |
| 33 | Techniques to reduce water usage and prevent or reduce waste water | Measures described in the Application.<br>Sections 4.2.2 and 4.3.8 of this decision document Permit conditions 1.3.1, 2.3.1, table S1.2 |

| BAT conclusion | Criteria | Delivered by |
|---|---|---|
| 34 | Reduce emissions to water from FGC and/or from treatment or storage of bottom ashes. BAT AELs | Not applicable |
| 35 | Handle and treat bottom ashes separately from FGC residues | Permit condition 2.3.15 |
| 36 | Techniques for treatment of slags and bottom ashes | No treatment carried out on site |
| 37 | Techniques to prevent or reduce noise emissions. | Measures are described in the Application.<br>Section 6.5.5 of this decision document. Permit conditions 2.3.1, table S1.2, 3.5.1, 3.5.2 |

## Annex 2: Pre-Operational Conditions

Based on the information on the Application, we consider that we do need to impose pre-operational conditions. 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 S1.4A Pre-operational measures** | |
|---|---|
| **Reference** | **Pre-operational measures** |
| **PO1** | Prior to the commencement of commissioning, the Operator shall send a summary of the site Environment Management System (EMS) to the Environment Agency and obtain the Environment Agency's written approval to the EMS summary.<br>The summary shall include a copy of the full other than normal operating conditions (OTNOC) management plan which shall be prepared in accordance with BAT 18 of the BAT conclusions and include:<br>• a list of potential OTNOC situations that are considered to be abnormal operation under the definition in Schedule 6 of this permit.<br>• a definition of start-up and shut-down conditions having regard to any Environment Agency guidance on start-up and shut-down.<br>• any updates on the design of critical equipment to minimise OTNOC since the permit application<br><br>The Operator shall make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Environment Agency web guide on developing a management system for environmental permits (found on www.gov.uk) and BAT 1 of the incineration BAT conclusions. The EMS shall include the approved OTNOC management plan.<br><br>The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit. |
| **PO2** | Prior to the commencement of commissioning, the Operator shall send a report to the Environment Agency, and obtain the Environment Agency's written approval to it, which will contain a comprehensive review of the options available for utilising the heat generated, including operating as CHP or supplying district heating, by the waste incineration process in order to ensure that it is recovered as far as practicable. The review shall detail any identified proposals for improving the recovery and utilisation of heat and shall provide a timetable for their implementation. |
| **PO3** | Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a protocol for the sampling and testing of incinerator bottom ash for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved. |

| Table S1.4A Pre-operational measures | |
|---|---|
| **Reference** | **Pre-operational measures** |
| **PO4** | Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved. |
| **PO5** | Prior to the commencement of commissioning, the Operator shall submit a written report to the Agency, and obtain the Environment Agency's written approval to it, detailing the waste acceptance procedure to be used at the site. The waste acceptance procedure shall include the process and systems by which wastes unsuitable for incineration at the site will be controlled.<br>The procedure shall be implemented in accordance with the written approval from the Agency. |
| **PO6** | No later than one month after the final design of the furnace and combustion chamber, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the computational fluid dynamic (CFD) modelling. The report shall explain how the furnace has been designed to comply with the residence time and temperature requirements as defined by Chapter IV and Annex VI of the IED whilst operating under normal load and the most unfavourable operating conditions (including minimum turn down and overload conditions), and that the design includes sufficient monitoring ports to support subsequent validation of these requirements during commissioning. |
| **PO7** | Prior to the commencement of commissioning, the Operator shall submit a report, and obtain the Environment Agency's written approval to it, on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED. |
| **PO8** | At least three months before (or other date agreed in writing with the Environment Agency) the commencement of commissioning, the Operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, specifying arrangements for continuous and periodic monitoring of emissions to air (for all monitoring points listed in table S3.1) to comply with EN 15259 and Environment Agency guidance notes monitoring stack emissions measuring locations, techniques and standards for periodic monitoring and TGN M20 for quality assurance of CEMS. The report shall include the following:<br>• Details of monitoring locations, access and working platforms<br>• Evidence that CEMS are MCERTS certified at the appropriate range<br>• Evidence that data handling and acquisition systems are MCERTS certified<br>• Methods and standards for periodic monitoring |

| Table S1.4A Pre-operational measures | |
|---|---|
| **Reference** | **Pre-operational measures** |
| | • Procedures for the quality assurance of CEMS, which includes evidence of completion of CEMS' functional tests and setting up quality assurance level (QAL) 3 checks, prior to completing a QAL2 |
| **PO9** | At least 3 months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the Operator shall submit, for approval by the Environment Agency, a methodology (having regard to Technical Report P4-100/TR Part 2 Validation of Combustion Conditions) to verify the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load, minimum turn down and overload conditions. |
| **PO10** | No later than one month after the final design of the site infrastructure (or other date agreed in writing with the Environment Agency) the Operator shall submit an updated Fire Prevention Plan (FPP) which meets the relevant criteria set out within the Environment Agency's Fire Prevention Plan guidance. Elements which were not finalised when the previously submitted version (received 10/10/2022) was submitted shall be addressed in detail, including but not limited to:<br>• Provision of adequate firewater<br>• Drainage, pollution control and firewater containment including a finalised drainage plan clearly marking emission points and any pollution control features<br>• A plan showing the location of gas storage facilities and other flammable items<br>• Details of fire detection system<br>• Confirmation of fire wall specification and a layout plan showing the location of firewalls and waste storage details<br>• Details of the quarantine area/s and a site layout plan showing the location/s<br>• Updated receptor plan, including receptors and potential hazards within the port (for example fuel pipeline and gas storage)<br>The updated FPP shall be submitted to the Environment Agency for approval. |

## Annex 3: Improvement Conditions

Based in the information in the Application we consider that we need to set improvement conditions. These conditions are set out below - justifications for these is provided at the relevant section of the decision document. We are using these conditions to require the Operator to provide the Environment Agency with details that need to be established or confirmed during and/or after commissioning.

| **Table S1.3 Improvement programme requirements** | | |
|---|---|---|
| **Reference** | **Requirement** | **Date** |
| **IC1** | The Operator shall submit a written report to the Environment Agency for approval on the implementation of its Environmental Management System (EMS) and the progress made in the certification of the system by an external body or if appropriate submit a schedule by which the EMS will be certified. The report shall also include details of a review of the OTNOC management plan and any updates to the plan following the review. | Within 12 months of the completion of commissioning. |
| **IC2** | The Operator shall submit a written proposal to the Environment Agency for approval to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission point A1, identifying the fractions within the PM10, and PM2.5 ranges. On receipt of written approval from the Environment Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Environment Agency a report on the results. | Within 6 months of the completion of commissioning. |
| **IC3** | The Operator shall submit a written report to the Environment Agency for approval on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions and confirm that the Environmental Management System (EMS) has been updated accordingly. | Within 4 months of the completion of commissioning. |
| **IC4** | The operator shall notify the Environment Agency of the proposed date(s) that validation testing is planned for. | Notification at least 3 weeks prior to validation testing |
| | During commissioning the operator shall carry out validation testing to validate the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load and most unfavourable operating conditions. The validation shall be to the methodology as approved through pre-operational condition PO9. | Validation tests completed before the end of commissioning |
| | The operator shall submit a written report to the Environment Agency for approval on the validation of residence time, oxygen and temperature whilst operating under normal load, minimum turn down and overload conditions. The report shall identify the process controls used to ensure residence time and temperature requirements are complied with during operation of the incineration plant | Report submitted within 2 months of the completion of commissioning. |
| **IC5** | The Operator shall submit a written report to the Environment Agency for approval describing the performance and optimisation of:<br>• The lime injection system for minimisation of acid gas emissions | Within 4 months of the |

| Table S1.3 Improvement programme requirements | | |
|---|---|---|
| **Reference** | **Requirement** | **Date** |
| | • The carbon injection system for minimisation of dioxin and heavy metal emissions.<br>• The Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NOx). The report shall include an initial assessment of the level of NOx, N2O and NH3 emissions that can be achieved under optimum operating conditions. | completion of commissioning. |
| | The operator shall carry out a further assessment of the performance of the SNCR system and submit a written report to the Environment Agency on the feasibility of complying with an emission limit value (ELV) for NOx of 100 mg/Nm3 as a daily average, including a description of any relevant cross-media effects identified. If an ELV for NOx of 100 mg/Nm3 as a daily average is determined not to be feasible, the report shall propose an alternative ELV which would provide an equivalent level of NOx reduction on a long-term basis such as an annual mass emission limit or percentile-based ELV. | Within 12 months of the completion of commissioning |
| **IC6** | The Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values:<br>Cr<br>A report on the assessment shall be made to the Environment Agency for approval.<br><br>Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant ES. In the event that the assessment shows that an environmental standard can be exceeded, the report shall include proposals for further investigative work. | 15 months from the completion of commissioning |
| **IC7** | The Operator shall submit a written summary report to the Environment Agency for approval to confirm that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 and Table S3.1(a) complies with the requirements of EN 14181, specifically the requirements of QAL1, QAL2 and QAL3. The report shall include the results of calibration and verification testing, | Initial calibration report to be submitted to the Agency within 3 months of completion of commissioning.<br><br>Full summary evidence compliance report to be submitted within 18 months of completion of commissioning. |
| **IC8** | During commissioning, the operator shall carry out tests to demonstrate whether the furnace combustion air will ensure that negative pressure is achieved throughout the reception hall. The tests shall demonstrate whether air is pulled through the reception hall and bunker area and into the furnace with dead spots minimised. The operator shall also carry out tests of methods used to maintain negative pressure during shut-down periods to ensure that adequate extraction will be achieved. The operator shall submit a report to the Environment Agency, for approval, summarising the findings along with any proposed improvements if required | Within 6 months of completion of commissioning |

| Table S1.3 Improvement programme requirements | | |
|---|---|---|
| **Reference** | **Requirement** | **Date** |
| **IC9** | The operator shall carry out a programme of dioxin and dioxin like PCB monitoring over a period and frequency agreed with the Environment Agency for approval. The operator shall submit a report to the Environment Agency with an analysis of whether dioxin emissions can be considered to be stable. | Within 6 months of completion of commissioning or as agreed in writing with the Environment Agency |
| **IC10** | The operator shall carry out a programme of mercury monitoring over a period and frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether the waste feed to the plant can be proven to have a low and stable mercury content. | Within 6 months of completion of commissioning or as agreed in writing with the Environment Agency |
| **IC11** | During commissioning, the operator shall carry out tests to assess whether the air monitoring location(s) meet the requirements of BS EN 15259 and supporting Method Implementation Document (MID).<br><br>A written report shall be submitted for approval setting out the results and conclusions of the assessment including where necessary proposals for improvements to meet the requirements. The report shall specify the design of the ports for PM10 and PM2.5 sampling.<br><br>Where notified in writing by the Environment Agency that the requirements are not met, the operator shall submit proposals or further proposals for rectifying this in accordance with the time scale in the notification.<br>The proposals shall be implemented in accordance with the Environment Agency's written approval. | Report to be submitted to the Agency within 3 months of completion of commissioning. |
| **IC12** | The operator shall identify and implement mitigation measures to minimise the noise impacts identified from the stack, boiler room and turbine hall - as identified in "Powerfuel Portland, Portland Energy Recovery Facility, BS4142 Noise Impact Assessment, AAc/267701/R04", dated 17th October 2023.<br><br>During commissioning, the operator shall undertake a further Noise Impact Assessment (NIA) in accordance with "BS 4142:2014+A1:2019 Method for Rating and Assessing Industrial and Commercial Sound", and associated Environment Agency guidance (https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits/noise-and-vibration-management-environmental-permits and https://www.gov.uk/government/publications/method-implementation-document-mid-for-bs-4142).<br><br>The assessment shall include, but not necessarily be limited to:<br><br>• a review of noise mitigation measures implemented for the stack, boiler room and turbine hall, with an assessment of the post mitigation noise impacts.<br>• A review of the noise sources from the facility. Where any noise sources are identified as exhibiting tonal contributions, they shall be quantified by means of frequency analysis.<br>• a review of whether any improvements, or additional mitigation methods, are required for any noise sources from the facility together with timescale proposals for their implementation. | Within 4 months of the completion of commissioning. |

| Table S1.3 Improvement programme requirements | | |
|---|---|---|
| **Reference** | **Requirement** | **Date** |
| | The operator shall submit the NIA to the Environment Agency for assessment and written approval. | |

## Annex 4: Consultation Reponses

## A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with the Environment Agency's Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on the Environment Agency public register.

The Application was advertised on the Environment Agency website from 11/06/2021 to 22/09/2021 and in the Dorset Echo on 11/06/2023. Additionally copies of the Application were placed at Portland and Weymouth public libraries.

The following statutory and non-statutory bodies were consulted: -

- Food Standards Agency
- Health and Safety Executive
- Dorset Council (Planning, and Environmental Health departments)
- Public Health England (now The UK Health Security Agency (UKSHA))
- Director of Public Health
- Local Harbour and Port Authority - Portland Port
- Wessex Water
- Local Fire and Rescue Service
- National Grid

## 1) Consultation Responses from Statutory and Non-Statutory Bodies

| Response Received from *Public Health Dorset* | |
|---|---|
| Brief summary of issues raised: | Summary of action taken / how this has been covered |
| Environment Agency (EA) or other appropriate independent body assess the modelling and the conclusion drawn by the applicant at paragraph 2.3 of the HHRA addendum, which concludes the provision of shore power will have a beneficial impact on human health | The air dispersion modelling is carried out by the Applicant and audited by our experts, this includes the HHRA. We are satisfied that there will be no significant impacts.<br><br>We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. The Applicant highlights a potential benefit of the scheme as being that power would be provided to ships which currently operate onboard engines to provide power when they are docked. We assess power supply as part of energy efficiency. It is expected, and assessed on the basis, that electricity from incineration plants will be sent |
| Concern raised as to how the provision of shore power to vessels in Portland Harbour and it's potentially positive impact on air quality and human health is to be secured. | |

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| | to the grid, if it is supplied elsewhere (e.g. shore to ship power) it will not affect our assessment of energy efficiency as set out in section 4.3.7 of the decision document. Approximately 15.2 MWe will be available for export to the National Grid as well as potentially for providing ship-to-shore power to vessels which dock in Portland harbour. Provision of shore power will not be secured through the permit but we are satisfied the proposal is acceptable without this. |
| Request for EA views on the additional modelling of the potential impacts from air emissions at HMP Verne. Including effects of site topography and surrounding built environment and whether or not it takes into account the particular circumstances and vulnerabilities of the population at HMP Verne. | We audited the Applicant's modelling, this included checking any effects from topography and nearby buildings. We are satisfied with the way it was carried out. The standards that we have used to assess against are set to protect all members of the public including the population at HMP Verne. |
| Concerns about the level of engagement carried out by the Applicant. | We are not responsible for the level of engagement carried out by the Applicant. |

| Response Received from *UKSHA (previously PHE)* | |
|---|---|
| Brief summary of issues raised: | Summary of action taken / how this has been covered |
| The applicant has used the COMEAP methodology. The recommended methodology set out in the guidance for comparison for most pollutants (including metals) and dioxin intake model is the HHRAP model for dioxins, furans and dioxin like PCBs. PHE would recommend that this model is used in this instance. | In addition to assessing emissions of $SO_2$, $NO_2$ and metals using COMEAP Dose-Response Factors, the applicant also assessed process contributions against the environmental standards, which are considered protective. We are satisfied with the information provided and that it is sufficient to inform our decision.<br><br>The consultant used proprietary software Lakes Industrial Risk Assessment Program (IRAP) to conduct the Human Health Risk Assessment (HHRA) of dioxins and furans emitted from the facility and it was audited by our Air Quality Modelling Assessment Unit (AQMAU). |
| Recommend that the Environment Agency takes the following into account:<br><br>• that the air quality modelling used is suitable and accurately reflects the local topography and provides reliable estimates of reasonable worst-case ground level pollutants<br>• that an assessment against the tolerable daily intake (TDI) of dioxins, furans and | • We audited the Applicant's modelling, this included checking any effects from topography. We are satisfied with the way it was carried out. We are satisfied that there will not be a significant impact from emissions to air when based on the maximum concentrations that represent the worst-case predictions.<br>• The Applicant submitted a Human Health Risk Assessment (HHRA) that considered |

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| other considered metals for the oral pathway at the worst-case receptors is conducted<br>• a full Construction Environmental Management Plan (CEMP) is submitted prior to development detailing environmental management measures ensuring these are appropriate and address potential risk to human health<br>• that a Pre-Operational Condition is included within the EP which requires the details of the proposed NOx abatement system to be confirmed during detailed design<br>• when transport and commercial activity return to more business as usual a noise survey is conducted, with the results being used as a basis for confirming noise emission limits and designing the ERF accordingly<br>• further ground investigation across the site, adhering to appropriate standards, to fully assess the potential for contamination which could impact the proposed redevelopment of the site and the potential associated health impacts | the worst case impacts of dioxins and furans and dioxin like PCBs through the food chain. We audited the assessment and are satisfied that health impacts are likely to be insignificant compared to the tolerable daily intake (TDI). The results of the Applicant's assessment of dioxin intake are detailed in section 5.3 of this decision document (worst – case results for each category are shown).<br>• Impacts from construction are not part of the environmental permitting process.<br>• The Applicant's BAT assessment is summarised in section 6.2.2 and concluded that SNCR is BAT for the plant. We are satisfied that SNCR is BAT. A pre-operational condition is not required.<br>• The noise baseline survey was undertaken while some COVID-19 restrictions were still in place in April 2021, so the measured background sound levels could be lower than we would normally expect, making the Applicant's assessment more conservative. An updated BS4142 Noise Impact Assessment was submitted in response to our request on 18/10/2023, with supporting modelling files and data submitted on 23/10/2023. As part of this a second baseline noise survey was undertaken in September 2023.<br>• Under Article 22(2) of the IED the Applicant is required to provide a baseline report containing at least the information set out in paragraphs (a) and (b) of the Article before starting operation. The Applicant has submitted a site condition report which includes a report on the baseline conditions as required by Article 22. We have reviewed that report and consider that it does not adequately describe the condition of the soil and groundwater prior to the start of operations. We have therefore set a pre-operational condition (PO7) requiring the Operator to provide this information prior to the commencement of operations. |

## 2) Consultation Responses from Members of the Public and Community Organisations

The consultation responses received were wide ranging and a number of the issues raised were outside the Environment Agency's remit in reaching its permitting decisions. Specifically, questions were raised which fall within the jurisdiction of the planning system, both on the development of planning policy and the grant of planning permission.

Guidance on the interaction between planning and pollution control is given in the National Planning Policy Framework. It says that the planning and pollution control systems are separate but complementary. We are only able to take into account those issues, which fall within the scope of the Environmental Permitting Regulations.

### a) Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

Representations were received from Weymouth Town Council and Portland Town Council. The key issues raised are shown below. Where an issue has already been covered above it is not necessarily repeated below.

| Brief summary of issues raised: | Environment Agency comment |
|---|---|
| **Comments about air emissions and air risk assessment** | |
| The Air Quality Assessment is inadequate | We audited the Applicant's dispersion modelling, including any additional modelling and information submitted in response to our requests for further information. The audit concluded that the modelling was suitable for use in our Permit determination.<br>We are satisfied that there will not be a significant impact in air quality.<br><br>Further information is in section 5.2 of this decision document. |
| A re-assessment of air quality impacts is required following updated Environment Assessment levels (EALs) in 2021 | We have considered the new 2021 and 2023 EALs in our assessment. This is described in Sections 5.2.1, 5.2.2, 5.2.3 and 5.5 of this decision document. |
| The background figures used are underestimated. | We audited the Applicant's dispersion modelling. As part of the audit, we checked that the background levels used by the Applicant were appropriate and we are satisfied that they were. We are satisfied that there will not be a significant impact in air quality.<br><br>Further information is in section 5.2 of this decision document.<br><br>Habitats assessment: APIS confirmed that there had been a mapping error in the ammonia data, also translating to an error in the total nitrogen deposition. Where relevant |

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| | to our assessment we have used the most up-to-date background values as found on the APIS website (2019 data). |
| Emissions from stand-by generators have not been considered. | The Applicant proposes one emergency diesel generator (EDG). The Applicant's assessment of the impact on air quality in relation to emissions from the on-site EDG via emission point A2 can be found in Annex B of the response to our Schedule 5 Notice dated 4th November 2021. We have considered emissions from the EDG in our assessment. Further information is in section 5 of this decision document. |
| Concerns that the effects of wind tunnelling/ funnelling have not been fully considered | Air dispersion modelling algorithms are continually updated and validated against real world situations, field campaigns and wind tunnel experiments. We tested sensitivity using air dispersion modelling software ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties. We are satisfied these concerns have been considered. |
| Comments submitted expressing concern over impacts on mortality | UKHSA have stated that their position remains that modern, well run and regulated municipal waste incinerators are not a significant risk to public health.<br><br>We agree with the view stated by the UKHSA. We ensure that permits contain conditions which require the installation to be well-run and regulate the installation to ensure compliance with such permit conditions. |
| Concerns on the impact on air quality | We audited the Applicant's dispersion modelling. As part of the audit, we checked that the modelling parameters used by the Applicant were appropriate and we are satisfied that there were. We are satisfied that there will not be a significant impact in air quality.<br><br>Further information in in section 5.2 of this decision document for further details. |
| Emissions from traffic should be taken into account | The air quality assessment considered existing background pollution levels which includes emissions from traffic. Movement of traffic to and from the Installation is outside of our remit but will normally be an issue for the planning authority to consider. Our consideration is whether the emissions from traffic could affect the prevailing pollutant background levels which could be a consideration where there are established high background concentrations contributing |

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| | to poor air quality. In this case the small increase in pollutants from traffic would not affect the background levels to the point where it would affect the conclusions of the air quality assessment.<br><br>Vehicle movements within the Installation boundary are considered within the remit of the Environmental Permit. However, the emissions from this limited area are highly unlikely to be significant and will not affect the conclusions of the air quality impact assessment. |
| In-combination effects from other facilities have not been considered | The air quality assessment considered existing background pollution levels which includes emissions from existing sources. We also undertook an in combination assessment, where required in line with our guidance, as part of our Habitats Regulations Assessment. Therefore, we are satisfied that emissions from the Installation acting in-combination are not likely to have a significant effect. See 5.4.2(v) for further details of this assessment. |
| Emissions from shipping are not captured in the background figures used. | The air quality assessment considered existing background pollution levels which includes emissions from traffic and shipping. The grid background level for the area of the port is much higher than the surrounding grid account of emissions from shipping. |
| Some tables in the Applicant's air quality impact assessment contain some incorrect values | During our assessment we noted errors in the figures presented by the Applicant for the PEC for some pollutants. We have substituted our own figures in the tables included in this decision document (calculated using the background and PC figures provided by the Applicant). These differences do not impact on our conclusions. |
| Some tables in the Applicant's air quality impact assessment contain incorrect units | During our assessment we noted errors in the units used by the Applicant for some of the tables in their Air Quality Assessment. We have corrected these to ensure the correct values and units have been used in our assessments. These corrections do not impact on our conclusions. |
| Concern that local topography, including steep cliffs, not properly considered | We audited the Applicant's dispersion modelling. As part of the audit, we checked that the topography considerations used by the Applicant were appropriate and we are satisfied that they were.<br>Air dispersion modelling algorithms are continually updated and validated against real world situations, field campaigns and wind tunnel experiments. We tested sensitivity using air dispersion modelling software ADMS and alternative modelling software - AERMOD and CALPUFF to |

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| | represent the topography surrounding the site and consider modelling uncertainties.<br><br>Further information in in sections 5.2 and 5.2.4 of this decision document. |
| Impacts from NOx emissions were not considered at appropriate elevations for tall buildings | The consultant included five discrete receptors to represent human exposure and another eight receptors in the human health risk assessment. We have included additional locations of exposure in our sensitivity analysis, particularly short-term locations of exposure at the top of the island. The submitted Air Quality Assessment also includes predictions at the point of maximum impact (where relevant public exposure may not necessarily occur) and includes contour plots showing the spatial impacts from the site. Our audit indicates that the discrete receptor locations were likely to capture maximum predictions at human health receptors. Therefore, we consider additional discrete receptor modelling is not required. |
| Concerns about the stack, including:<br>• the stack height has been incorrectly referenced; and<br>• the stack height should be re-assessed | The Applicant has confirmed that the proposed stack height is 80m. We are aware that in some cases this is incorrectly given as 90m in the application. The Air Emissions Assessment and modelling uses a stack height of 80m.<br><br>Having assessed the Application as a whole we are satisfied that the measures proposed, of which stack height is one aspect, are BAT. We are satisfied that the stack height has been calculated in accordance with IED article 46(1).<br>The stack height will safeguard human health and the environment. |
| Concern that ammonia emissions will have a negative effect. | We have assessed the impacts from ammonia and we are satisfied that it is unlikely there will be any significant impacts. See section 5.2 including section 5.2.2 (consideration of key pollutants) of this decision document for further details and section 5.4. |
| **Comments about health impacts** | |
| Concerns about health impacts | We are satisfied that there will not be a significant impact on health due to the Installation. Section 5.3 of this decision document has further details. |
| There are a number of farms within 2 km of the proposed development site which have not been considered | Specific details of these farms were not provided, however the HHRA considers the maximum impacted receptor and so we consider the conclusions to be protective of other potential receptors. We are satisfied that there will not be a significant impact on health or on soils. |

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| Benzene and polycyclic aromatic hydrocarbons (PAHs) are not included in the human health risk assessment | Emissions of benzene and polycyclic aromatic hydrocarbons (PAH) are considered in the Applicant's dispersion modelling (Appendix D.2: Process Emissions Modelling). We have audited the dispersion modelling submitted with this Application and we are satisfied that there will not be any significant impacts.<br><br>The Air Quality Risk Assessment considered emissions of benzene as well as pollutants not covered by Annex VI of IED, specifically, polycyclic aromatic hydrocarbons (PAH) and Polychlorinated biphenyls (PCBs). Both are considered further in section 5.2 of this decision document. |
| Daily dose for breast-fed infants is not reported in the assessment. | As part of the consultation process on the planning application for the Portland Energy Recovery Facility, the former Public Health England (PHE) requested the assessment of impacts of dioxins, furans and dioxins-like-PCBs against the tolerable daily intake (TDI). As a result, the consultant undertook an assessment to supplement the original Human Health Risk Assessment (HHRA). This supplementary assessment was submitted to the Environment Agency on 13 May 2022. The supplementary assessment considered the breast milk pathway and presented inhalation, ingestion and total uptake in pg/kg-day. |
| The HHRA does not consider potential intake by consuming locally sourced fish and other marine life | We have consulted a number of sources to investigate potential fish intake by members of the public and consider that the ingestion of fish is unlikely to be a pathway. However, we considered the consumption of locally caught fish pathway in our Human Health Risk Assessment screening checks, and it indicated intakes below the UKHSA screening criteria. |
| **Comments about impacts at ecological sites** | |
| Concerns over impacts to the marine environment from increased shipping | As is the case with road traffic movements, the Permit does not control any proposed shipping activities to and from the site, this falls outside the scope of this permit determination. |
| Concern over the impact at habitat sites and other ecological sites. | Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. |
| The Shadow Habitats Regulations Assessment is not fit for purpose | Shadow Habitat Regulation Assessments are undertaken by the applicant and submitted to the local authority as part of the planning process. A copy of the Shadow Habitat Regulation Assessment was also submitted to the Environment Agency as part of the permit application. However, we |

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| | have undertaken our own Habitat Regulation Assessment. Our assessment for ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. Natural England were consulted and agreed with our assessment of the impact at habitat sites. |
| **Comments about BAT, emission limits and control measures** | |
| The proposals do not meet BAT. | We have assessed documents submitted in support of the application, including the BAT assessment. Our view is that the measures proposed by the Applicant are BAT. This is explained in detail in section 6 of this decision document. |
| No specific proposals in relation to reduction of grate riddlings | The incinerator relies on waste for fuel therefore it is in the Applicants interests to ensure final design of the grate ensures the amount of waste able to fall through the grate is minimised, this is a standard consideration of incinerator design. However, some fine material (referred to as siftings/riddling) may fall through the grate, this can be recovered separately as part of off-site IBA processing. |
| Applicant does not consider the use of oxygen-enriched air. | This technique is discussed in the Best Available Techniques (BAT) Reference Document for Waste Incineration; however, it is not translated into the BAT conclusions. The BREF indicates limited applicability and current use; stating oxygen enrichment is not widely applied owing to the additional costs and cross-media impacts associated with the generation of oxygen, and the additional operational challenges such as handling molten fly ash. |
| Concern that the best technological option is not being proposed to reduce NOx emissions. Including that lower ammonia emissions could be achieved by using SCR | There are three recognised techniques for secondary measures to reduce NOx. These are Selective Catalytic Reduction (SCR), SCR by catalytic filter bags and Selective Non-Catalytic Reduction (SNCR) with or without catalytic filter bags. The Applicant's BAT assessment is summarised in section 6.2.2 and concluded that SNCR is BAT for the plant. We are satisfied that SNCR is BAT.<br><br>Section 5 of the decision document sets out how we assessed the Applicant's air quality impact assessments. Ammonia screened out as not significant. Monitoring for ammonia has been set in order to monitor the efficiency of the SNCR abatement system. |
| Concern that factor of 349 $gCO_2/kWh$ used for the electricity generation displaced is not appropriate<br>The difference in greenhouse gas emissions from displaced grid generation between the | Our consideration of global warming potential, including carbon dioxide emissions, is set out in sections 6.3 and 6.6.1. The key part of this assessment is comparisons of different BAT options and |

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| SNCR and SCR systems is likely to be less than the claimed. | that the key factor is ensuring as much energy is generated from the waste as practicable. Therefore, any changes in the way direct $CO_2$ emissions or $CO_2$ offset are calculated will be the same for each option and will not affect the conclusions of the assessment. |
| The emission limits proposed by the Applicant are at the top end of the BAT-AEL range. | It is the standard approach for emission limit values (ELVs) to be set using the upper-end of the BAT-AEL range. The upper end of the BAT-AEL range is the maximum emission that should be permitted under normal operating conditions when using one, or any combination of, the techniques that are considered BAT.<br><br>The applicant has proposed a limit for ammonia which is tighter than the BREF incineration emission limit (8 mg/$m^3$ rather than 10 mg/$m^3$) and this has been used in the assessment, and permit conditions reflect this tighter emission limit. |
| The calculation of POCP in the BAT assessment and its use as an advantage of SNCR is not accepted. | Our assessment that SNCR is BAT is not based on POCP (Photochemical Ozone Creation Potential). We are satisfied that, taking all the relevant factors into account, SNCR is BAT.<br>Persistent Organic Pollutants (POPs) (dioxins and others) are considered in section 6.4 of this decision document. |
| The wet scrubber should have been taken forward to the full quantitative BAT assessment, alongside the semi-dry and dry options. | Wet scrubbing is not BAT for the reasons set out in section 6.2 of this decision document. There are three recognised techniques for secondary measures to reduce NOx. These are Selective Catalytic Reduction (SCR), SCR by catalytic filter bags and Selective Non-Catalytic Reduction (SNCR) with or without catalytic filter bags. The Applicant's BAT assessment is summarised in section 6.2.2 and concluded that SNCR is BAT for the plant. We are satisfied that SNCR is BAT. |
| Concern that measures for mercury control is not BAT. | Our view is that it is BAT, see section 6.2.6 of the decision document for further information.<br>The impacts of mercury were compared to the ES which is considered to be protective for human health impacts. The dispersion modelling for this Application has shown that impacts of mercury would not be significant. Section 5 of this decision document has further details. |
| **Comments about waste types** | |
| Concern that incoming waste is not screened for radioactivity. | The Permit will not allow radioactive material to be accepted. It is possible that smoke alarms (containing small radioactive sources) could be placed in household bins and received at the incinerator. However, |

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| | they are likely to be small in number and have a low level of radioactivity so there is little likelihood of any significant risk if they were burned. |
| **Comments about noise impacts** | |
| Concerns about the Noise Impact Assessment submitted with the application, including that it is incomplete and flawed | An updated BS4142 Noise Impact Assessment was submitted in response to our request on 18/10/2023, with supporting modelling files and data submitted on 23/10/2023. As part of this a second baseline noise survey was undertaken in September 2023 as the initial noise survey was conducted in April 2021 at a time when some but not all the COVID-19 pandemic restrictions had been eased.<br>This updated assessment (dated October 2023) supersedes the Noise Impact Assessments previously submitted (dated September 2020 and May 2021). We are satisfied with the revised assessment. Our assessment, summarised in section 6.5.5, is based on the updated NIA. |
| Concern over how the noise assessment was carried out including:<br><br>• Source data is not representative<br>• Background noise levels are not representative<br>• Choice of receptors | We audited the Applicant's noise assessment. As part of the audit we checked that relevant factors, including representative source data and background noise levels, were considered appropriately by the Applicant and we are satisfied that they were.<br><br>As per the previous NIA, the consultant has not presented a BS 4142 impact assessment for receptors at HMP The Verne. It is not clear why this receptor has been omitted from the impact assessment, as background sound levels and rating sound levels are presented in Table 1 and Table 4 of the NIA respectively.<br><br>Having reviewed the Applicant's revised BS4142 assessment and carried out our own check modelling and sensitivity analysis we consider that there will not be a significant impact from noise (including at HMP The Verne).<br><br>See section 6.5.5 for further details. |
| Concern that lockdowns affected the recorded noise levels. | An updated BS4142 Noise Impact Assessment was submitted in response to our request on 18/10/2023, with supporting modelling files and data submitted on 23/10/2023. As part of this a second baseline noise survey was undertaken in September 2023 as the initial noise survey was conducted in April 2021 at a time when some, but not all, the COVID-19 pandemic restrictions had been eased. |
| Weekend noise levels were not considered | The assessment is based on worst-case background sound levels which are |

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| | representative of conditions during the most sensitive weekend period (Saturday & Sunday, daytime and night-time). Measurements were made between Friday 16th and Tuesday 20th April 2021, and include a weekend period. |
| Concern over noise from vehicle movements. | Only Vehicle movements within the Installation can be considered through environmental permitting. Vehicle movements outside of Installations may be within the remit of the planning permission. The Applicant's noise assessment included on-site vehicle movements and we are satisfied that there will not be a significant impact. |
| Concern over noise impacts during construction. | Impacts from noise during the construction phase are not considered as part of the environmental permitting decision. This may be assessed and controlled through planning permission. The remit of the Environmental Permit is to look at the impacts from noise during plant operation, which we have assessed as part of our determination. |
| Noise limits and perimeter noise monitoring may be required. | We have assessed noise from the Installation and are satisfied that it will not be significant. Permit conditions 3.5.1 and 3.5.2 will ensure that noise is controlled and will allow us to take further action should it be required. |
| Operational noise has been assessed against criteria taken from BS8233:2014 rather than BS4142. | This comment is in response to the Noise Impact Assessment (NIA) (dated September 2020) which was submitted with the application. A baseline survey could not be completed at the time due to Covid-19 restrictions. However, this NIA has since been superseded, most recently by an NIA submitted in response to our request on 18/10/2023, with supporting modelling files and data submitted on 23/10/2023.<br><br>We are satisfied that the Noise Impact Assessment (dated September 2023) was carried out in accordance with the methodology contained within British Standard BS4142:2014+ A1:2019, 'Methods for rating and assessing industrial and commercial sound.' |
| **Comments about accident prevention** | |
| Concern about the quality of the Fire Prevention Plan (FPP) and comments submitted expressing concern over fire risk. | We requested additional information through a Schedule 5 notice dated 09/09/2022. An updated FPP was submitted in response to our request on 10/10/2022. |
| A further review of the FPP should be taken at the detailed design stage. | We are satisfied that the information contained in the updated FPP combined with the information required through pre-operational condition PO10 will be adequate |

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| | to meet our FPP guidance. Full design details, including firewater provision, containment design and quarantine area were not available at the time of permit determination and therefore a pre-operational condition requires that details and plans of these, including confirmation of how they meet the standards set out in our FPP guidance, are submitted and approved prior to commissioning. |
| Concerns the quarantine area described in the FPP is inadequate | The FPP states that a suitable area for the quarantine of unacceptable waste will be designated as part of the detailed design stage. PO10 requires further update prior to commissioning of the installation. A number of elements, including further details about the quarantine area, will be subject to confirmation at the final design stage and will be assessed by the Environment Agency against our guidance. |
| How will the internal temperature of the bales be monitored? | Representative temperature readings from the centre of the bales and from bales within the centre of the pile is required where storage times are 3 months or longer. The maximum expected storage time of baled waste at the site is 30 days. However, thermal imaging cameras will continually monitor the temperature of the bales within the bale storage area and identify hotspots. |
| The FPP states that requirements relating to pile separation distance only applies to external storage of wastes. | The guidance makes no distinction between the separation distances required for internally or externally stored waste. Separation distances need to be at least 6m between waste piles and 6m between the waste piles and the site perimeter/buildings. Unless it is proposed to store waste in bays with suitable fire walls, in which case the separation distance is reduced. The FPP confirms the bale storage area will be made up of 8 separate bays with fire walls separating each bay. Other waste will be stored in the bunker. |
| All fire prevention measures should be covered by a third-party certification scheme and/or meet the appropriate recognised standards. | We are satisfied that the information contained in the updated FPP combined with the information required through pre-operational condition PO10 will be adequate to meet our FPP guidance.<br>The FPP states that all fire detection systems will be designed, installed and maintained in accordance with an appropriate UKAS accredited third-party certification scheme. The FPP also states that the automatic fire suppression systems will be designed and maintained by a suitably qualified, experienced and registered fire protection engineer and that the suppression systems will be covered by a recognised (typically UKAS) third party certification scheme. |

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| Concern that there will not be adequate water supply in the event of a fire | The firewater provision will not meet guidance requirement of 2000 l/min for 3 hours. However, the Applicant proposed alternative measures that we are satisfied with. |
| Concerns about supply, handling and containment of firewater | The firewater provision will not meet guidance requirement of 2000 l/min for 3 hours. However, the Applicant proposed alternative measures in their FPP that we are satisfied with.<br><br>There will be provision to contain fire water on site as set out in the fire prevention plan. Measures to contain firewater including use of the bunker were described and we are satisfied. This is a common alternative measure for this type of installation.<br><br>The water used for fire-fighting will be sampled and analysed to identify whether it is suitable to be used as process water or if treatment/disposal of the water is required. If the firewater is contaminated, the water will be discharged to sewer or pumped out and transferred off-site to a suitably permitted waste management facility. |
| **Comments about other issues** | |
| Nationally there is already sufficient incinerator capacity | This is outside the scope of this determination. Waste management arrangements are a matter for the local authority. |
| The plant is larger than required | The waste throughput permitted is based on the capacity of the site and the tonnage at which the environmental risk assessments were based. The capacity of the incinerator is primarily a matter for the Applicant designed to meet the waste disposal needs of the local authority. The proposed facility forms part of an integrated waste management strategy; any material arriving at the facility will be residual waste arisings following upstream waste segregation, recovery and recycling initiatives. The shape and content of this strategy is a matter for the local authority. |
| The power generated by the incinerator could be achieved using alternative technology | We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. |
| Increase in heavy goods vehicles using the local road network | Movement of traffic to and from the Installation is outside of our remit but will normally be an issue for the planning authority to consider. |
| The consultation period was flawed and based on out-of-date documents. | We are satisfied that we took appropriate steps to inform people about the Application and how they could comment on it. How we did this is described in Section 2 of this decision document.<br>We were satisfied that the information the applicant provided was sufficient for us to |

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| | determine the application. Although we were able to consider the application duly made, we did in fact need more information in order to determine it and issued information notices on 04 November 2021, 09 September 2022 and 08 September 2023. When additional and updated information was submitted by the Applicant during determination, for example in response to a Schedule 5 Notice, this has been made publicly available by being added to the Citizen Space page.<br>Written comments were also accepted by the Environment Agency beyond the formal consultation period. We have taken all relevant representations into consideration in reaching our determination. |
| **Comments about regulation** | |
| Concern over how the Environment Agency will regulate the site. | We will regulate the site carrying out a continual assessment of plant operations and its environmental performance. This will be achieved in the following ways;<br><br>• The operator must monitor emissions and report the results to us.<br>• We will regularly inspect the Installations (both announced and unannounced at a frequency that we consider appropriate), review monitoring techniques and assess monitoring results to measure the performance of the plant.<br>• We will carry out on-site audits of operator monitoring.<br>• The operator must inform us within 24 hours of any breach of the emission limits, followed by a fuller report of the size of the release, its impact and how they propose to avoid this happening in the future;<br>• The operator's monitoring results are placed on the public registers.<br><br>If there is a breach of the permit then depending on the seriousness of it, we will take appropriate enforcement action and/or prosecute. |

b) Representations from Community and Other Organisations

Representations were received from Stop Portland Waste Incinerator, Wyke Regis Surgery Patient Participation Group, Jurassic Coast Trust, The Incline Community Orchard and Gardens, Dorset Climate Action Network, Portland Museum, b-side, The

Portland Association, Portland Access Group, Weymouth Civic Society, Portland Community Partnership, East Dorset Friends of the Earth and National Trust.
They key issues raised are shown below. Where an issue has already been covered above it is not necessarily repeated below.

| Brief summary of issues raised: | Environment Agency comment |
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| **Concerns about location** | |
| Concerns about impacts to the Jurassic Coast UNESCO World Heritage Site and Dorset Area of Outstanding Natural Beauty | The proposed Portland ERF is outside of the boundaries of the Dorset and East Devon Coast World Heritage Site and Dorset Area of Outstanding Natural Beauty (also referred to as National Landscapes). We do not consider that emissions from the installation will have an impact on these areas.<br><br>Designation of AONBs is not within the remit of the Environment Agency. However, we will only issue a permit where we are satisfied with the environmental impacts of a proposed activity whether or not land has any particular designation.<br><br>Visual impacts are not within our remit and is covered by the planning process |
| Concerns that Portland has lesser protections than other areas which are covered in Dorset's Area of Outstanding Natural Beauty. | |
| Concerns about impacts on quality of life, perception and enjoyment of the area. | We have to assess the environmental impacts of what is proposed and whether an activity can be authorised under EPR. Based on that there is no reason why they should be concerned about the matters identified. |
| **Comments about air emissions and air risk assessment** | |
| Concerns about the potential visual impact of a plume. | Visual impacts, including plumes, are generally covered by the planning process. Pollution from a visible plume is not likely to have a significant effect on health or the environment. Any visible plume from the stack is likely to be steam. The Applicant's choice of cooling system (air cooled), particulate abatement (fabric filters), and secondary measures for acid gas abatement (dry) are unlikely to contribute to a visible plume as they do not introduce large quantities of excess moisture into the system. |
| Concerns over the impacts of meteorological conditions (such as mist, fog, cloud cover and temperature inversions) and the impact this may have on dispersion. | We are satisfied that there will not be a significant impact on air quality or health when taking into account local weather conditions and the costal location in proximity to the steep incline.<br><br>See section 5.2.4 of this decision document for how we have considered local weather conditions. |
| Concerns that conditions at the proposed site are different to those at Portland Bill. | We checked the weather data used by the Applicant when we audited the Applicant's dispersion modelling. This included |

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| | checking weather data from other weather stations around the site and using our own weather data. We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. These are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants. We are satisfied that the proposal is unlikely to result in a significant impact on air quality. |
| Concern about the impacts from peak emissions. | The Applicant's modelling predicted peak ground level exposure to pollutants in ambient air and at discrete receptors. We audited the Applicant's dispersion modelling. Based on the Applicant's modelling we are satisfied that there will not be a significant impact in air quality. The environmental standards for the pollutants considered in the modelling are protective of human health.<br><br>Further information in in section 5.2 of this decision document for further details. |
| Concerns about gaseous emissions, including Greenhouse gases and accidental emissions. | See section 6.3 of this decision document for how we have considered Greenhouse gas emissions.<br>Key measures proposed by the Applicant to control fugitive emissions are covered in section 6.5.3 of this document. Based upon the information in the application we are satisfied that appropriate measures will be in place to prevent and /or minimise fugitive emissions. |
| IED Article 46 should be considered to inform the calculation of stack height. | We are satisfied that the stack height has been calculated in accordance with IED article 46(1). Having assessed the Application as a whole we are satisfied that the measures proposed, of which stack height is one aspect, are BAT. |
| Concern about inaccuracies in the application documents, including insufficient understanding of the microclimate of the site affected as it is by the height and form of the Isle of Portland. | We are satisfied that there will not be a significant impact in air quality. We audited the Applicant's dispersion modelling. As part of the audit, we checked that the modelling parameters, impacts from topography, and weather data used by the Applicant were appropriate for the location. We are satisfied that there were.<br><br>We are satisfied the modelling adequately takes the site setting into account and that the Applicant's conclusions can be used for permit determination.<br><br>Further information in in sections 5.2 and 5.2.4 of this decision document. |

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| The development would not be in line with international and national objectives of countering the effects of climate change.<br>Concerns about emissions of carbon dioxide<br>Concerns about gaseous emissions, including Greenhouse gases and accidental emissions. | Our role under Environmental Permitting is to assess local impact due to emissions from the Installation. We have done this and are satisfied that there will not be a significant impact.<br>Our assessment of global warming potential is covered in sections 6.3 and 6.6 of this decision document. |
| Concern at potential impacts from air emissions at receptors which are situated at an elevation above, or similar to, the height of the flue. | We audited the Applicant's modelling, this included checking any effects from topography. We are satisfied with the way it was carried out. The standards that we have used to assess against are set to protect all members of the public.<br>Air dispersion models include plume rise algorithms and modelling algorithms are continually updated and validated against real world situations, field campaigns and wind tunnel experiments. We tested sensitivity using ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties. |
| Concern that wind may blow fumes towards Weymouth and other communities | We checked the weather data used by the Applicant when we audited the Applicant's dispersion modelling. This included checking weather data from other weather stations around the site and using our own weather data. Based on our audit, we are satisfied with the weather data that was used by the Applicant. We are satisfied that the proposal is unlikely to result in a significant impact on air quality at any location and regardless of wind direction. |
| Concern over the impacts as shown on the Plume Plotter website | Plume Plotter appears to be a tool which uses air quality modelling software to predict the ground level concentrations of nitrogen oxides and other pollutants that may arise from the incinerator based on a number of factors.<br>The information on the website indicates that the results may be based on expected modelling methods. However, there is no information on the website as to how the model was validated and we have not seen the model input parameters, and so cannot comment on the validity of the predictions.<br>We have audited the dispersion modelling submitted with this Application and we are satisfied that there will not be any significant impacts. |
| Concern that background emissions would have been elevated by an increased number of ships in the port during the pandemic. | Off-site shipping emissions do not form part of the Environmental Permitting decision process except to the extent that they could affect the prevailing background levels. We have reviewed all background |

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| | concentrations, with particular focus on recorded values presented in the Annual Status Report for Weymouth & Portland local authority, and Defra UK Air website. These measured values include emissions from traffic and shipping. Following our review of the background and check modelling, although we do not agree with the consultant's absolute numerical predictions, we agree with their conclusions. |
| Concern that the impacts of wind have not been fully considered. | Weather conditions, including wind direction and speed, were taken into account in the Applicant's air dispersion modelling.<br><br>The dispersion modelling tested sensitivity using five years of meteorological data observed at the Isle of Portland meteorological station recorded between 2014 and 2018 and 2 years of meteorological data at an alternative location - Portland Harbour between 2017-2018.<br><br>We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. These are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants. |
| Concerns over impacts from emissions caused by increased shipping, including ships to deliver/ remove waste from the installation | We have reviewed all background concentrations, with particular focus on recorded values presented in the Annual Status Report for Weymouth & Portland local authority, and Defra UK Air website. These measured values include emissions from traffic and shipping. Following our review of the background and check modelling, although we do not agree with the consultant's absolute numerical predictions, we agree with their conclusions. Movement of traffic and shipping to and from the Installation is outside of our remit but will normally be an issue for the planning authority to consider. Our consideration is whether the emissions from traffic and shipping to and from the installation could affect the prevailing pollutant background levels which could be a consideration where there are established high background concentrations contributing to poor air quality. In this case the small increase in pollutants from traffic and/or shipping would not affect the background levels to the point where it would affect the conclusions of the air quality assessment. Vehicle movements within the Installation boundary are considered within the remit of the Environmental Permit. However, the |

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| | emissions from this limited area are highly unlikely to be significant and will not affect the conclusions of the air quality impact assessment. |
| Concern that Portland Island is at a higher elevation than the stack | We audited the Applicant's modelling, this included checking any effects from topography. We are satisfied with the way it was carried out. We tested sensitivity using ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties.<br><br>The impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling. This is considered further in Section 5.2.4 of this decision document. |
| **Concerns about health impacts** | |
| The adverse impacts of the development are likely to be dis-proportionally suffered by people with disabilities or by the very young. | We are satisfied that there will not be a significant impact on health due to the Installation. Section 5.3 of this decision document has further details.<br><br>The standards that we have used to assess against are set to protect all members of the public. |
| Concern about the impact on human health from particulate emissions, including very fine particulate matter such as PM2.5 and smaller. | These issues are covered in sections 5.2 and 5.3 of this decision document. We are satisfied that there will not be a significant impact from particulates. |
| Concern over impacts from accumulation of pollutants in the food chain. | Impact at receptors was considered in the air quality assessment (see section 5.2). Impact on the food chain was considered in the human health risk assessment. We are satisfied that there will not be a significant impact. See section 5.3 for further details.<br><br>Dioxins and furans can accumulate in the food chain. This is considered in section 5.3 of this decision document. Other pollutants are assessed against the ES and we are satisfied that the ES are protective of human health and that further assessment of accumulation is not required. |
| Concern emissions may result in birth defects. | Please refer to section 5.3.1 where the findings of the UKHSA study are discussed. In summary, the UKHSA confirmed that the study did not change their position of the health risks. |
| A report by Air Quality Consultants Ltd, commissioned by the Greater London Authority (GLA) published in May 2020 on Health Effects due to Emissions from Energy from Waste Plants in London, found that: In total, 15 deaths of London residents per year are calculated to be attributable to | The calculated impact of incinerators in the GLA commissioned report is a notional calculated figure and should be compared to the estimated overall effect of emissions, from transport, lighting and heating in London. This is estimated to be 9,400 excess deaths in London every year, therefore the contribution from waste |

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| emissions of nitrogen oxides and particulate matter from the five EfW facilities. | incineration is very small in comparison (0.16%). Before the GLA's commissioned report, there has been much research undertaken in the UK and internationally, into the links between waste incineration and possible health effects. Public Health England's (now UKHSA, UK Health Security Agency) risk assessment remains that modern, well run and regulated municipal waste incinerators are not a significant risk to public health. |
| Concern about mercury emissions leading to build-up in the sea and subsequent impacts on the food chain | We have consulted a number of sources to investigate potential fish intake from members of the public and agree that the ingestion of fish is unlikely to be a pathway. However, we considered the consumption of locally caught fish pathway in our Human Health Risk Assessment screening checks, and it indicated intakes below the UKHSA screening criteria. The impacts of mercury were compared to the ES which is considered to be protective for human health impacts.<br>Bag filters and activated carbon will limit emissions of particulate phase metals and mercury. ELVs for metals apply as set out in table S3.1 of the Permit. We are satisfied that impacts from mercury will not be significant. |
| **Comments about impacts at ecological sites** | |
| The development would not be in line with international and national objectives of countering the effects of loss of biodiversity. The Environment Bill (2020) requires that all development provides a net gain in biodiversity. The current proposals for the development of the ERF will result in a significant net loss of biodiversity within the application site. | Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. Any requirement for biodiversity net gain is delivered through the planning system. |
| Concerns about the impacts of nitrogen deposition | Our assessment has considered the potential impact of acidification and contribution of nitrogen oxides, as nutrient nitrogen. Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. |
| Concern over emissions to water, including impact on the environment. | The only water emission allowed under the Permit will be clean surface water run off that will be emitted to the Balaclava Bay (east) and/or Portland Harbour. We are satisfied that this will not cause pollution.<br>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. |
| Concerns about the potential effects of dredging in Porland Harbour on water quality and the marine ecosystem. | Dredging is not within the remit of this permit determination. We would expect any dredging required as part of Port operations would be managed by the relevant authority |

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| | and subject to the necessary controls to minimise negative impacts. |
| Concern about the way in which the impact from traffic emissions on habitat sites is considered. | The air quality assessment considered existing background pollution levels which includes emissions from traffic. Movement of traffic to and from the Installation is a relevant consideration for the grant of planning permission but does not form part of the Environmental Permit decision making process. Our consideration is whether the emissions from traffic could affect the prevailing pollutant background levels which could be a consideration where there are established high background concentrations contributing to poor air quality. In this case the small increase in pollutants from traffic would not affect the background levels to the point where it would affect the conclusions of the air quality assessment.<br>Vehicle movements within the Installation boundary are considered within the remit of the Environmental Permit. However, the emissions from this limited area are highly unlikely to be significant and will not affect the conclusions of the air quality impact assessment. |
| **Comments about BAT, emission limits and control measures** | |
| Concern that BAT is not being used including:<br>• Furnace type<br>• Abatement techniques | Our view is that the furnace type and abatement systems proposed by the Applicant are BAT. This is explained in detail in section 6 of this decision document. |
| A permit should ensure the plant constantly improves as technologies improve (reduction of its emissions and overall reducing its impacts on the environment). | If standards change in the future, we can review the permits of sites in the incineration sector to check whether any additional controls would be required. We have the power to vary the Permit if required. We are also required to keep permits under review which could include updating to reflect changes in BAT. |
| Concern about the way emission limit values (ELV) are set in the permit and that the top end of the BAT-AEL range has been used. | In accordance with the Defra Industrial Emissions Directive EPR Guidance on Part A Installations, ELVs have been set on the basis of the top of the relevant BAT-AEL range. We are satisfied that emissions at the permitted limits would ensure a high level of protection for human health and the environment. Where we have accepted that the Applicant's proposals are BAT there is no justification to reduce ELVs below the BAT AELs and Chapter IV limits. Section 6.6 has further details.<br><br>However, for ammonia the Applicant has proposed a limit which is tighter than the BREF incineration emission limit (8 $mg/m^3$ rather than 10 $mg/m^3$). This has been used in the assessment and permit conditions reflect this tighter emission limit. We are satisfied that this level of emission is consistent with |

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| | the operation of a well-controlled SNCR NOx abatement system and is achievable. |
| Alternative sustainable and low-carbon solutions for generating energy should be used instead of waste incineration. | It is argued that Incineration is not an environmentally sustainable technology and therefore cannot be considered to be the Best Available Technique (BAT). At this time however, mass burn incineration at this scale can still be considered BAT, subject to the appropriate assessments being made.<br><br>We have to assess the environmental impacts of what is proposed which is an activity that can be authorised under EPR. Wider issues of waste and energy policy are outside our remit. We have not compared emissions to other forms of power generation in our assessment of this Application. The Application is for an incineration plant with the primary purpose of waste disposal whereas the primary purpose of energy generation infrastructure is to generate energy. Our assessment of BAT is set out in section 6 of this decision document and relates to whether they are using BAT to incinerate the waste which is the primary purpose of the plant. |
| Concern that no limits will be set for dioxin-like PCBs | The BAT Conclusions for Waste Incineration gives a choice of ELVs. Under BAT 30 we can either set an ELV for dioxins and the related furans (PCDD/F) or a combined dioxin/dioxin-like PCB limit. An ELV is set in the permit for Dioxins / furans. We do not set emission limits in the permit for dioxin-like PCBs, however we do specify that monitoring is required.<br>We have also set improvement condition IC9 which requires the operator to carry out a programme of dioxin and dioxin like PCB monitoring. This is so we can determine that dioxin emissions can be considered to be stable. |
| Concerns over figures used for global warming that were used in the application | The figures used for global warming in the BAT assessment are consistent with figures in similar installations. Our consideration of global warming potential, including carbon dioxide emissions, is set out in sections 6.3 and 6.6.1. The key part of this assessment is comparisons of different BAT options and that the key factor is ensuring as much energy is generated from the waste as practicable. Therefore, any changes in the way direct $CO_2$ emissions or $CO_2$ offset are calculated will be the same for each option and will not affect the conclusions of the assessment. |
| We received a copy of an IPCC (Intergovernmental Panel on Climate Change) paper: *Emissions from Waste* | This paper is part of the report Good Practice Guidance and Uncertainty Management in National Greenhouse Gas |

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| *Incineration*, together with concern that the findings of this paper had not been taken into account. | Inventories. It appears to be a methodology for countries to use as part of calculating national $CO_2$ emissions, with methods for calculating direct and off-set emissions. The methodology in this paper doesn't affect our BAT assessment, where the key measure to minimise global warming is to maximise energy recovery. For permit determination, the method an Applicant uses to calculate direct or off-set $CO_2$ emissions does not make a difference to the conclusions of that assessment provided energy recovery is considered in the same way for each BAT option. |
| **Comments about waste types** | |
| Concern over the burning of plastics. | Waste types and quantities are specified in Table S2.2 of the permit. Only one EWC code is included: 19 12 10 *combustible waste (refuse derived fuel (RDF)).* Although it is likely that the RDF will contain some plastics, most plastics should be separated at source. Waste acceptance criteria will prevent separately collected plastic unless contaminated. Other measures such as bunker management, combustion control and emission limits will provide sufficient control to ensure that any plastic in the waste will not cause significant pollution or harm. |
| Concerns about toxic waste produced by abatement measures. | Potentially harmful residues result from the incineration process including APC.<br>APC residues will be hazardous waste. We are satisfied that both hazardous and non-hazardous wastes produced on site will be handled and recovered or disposed of appropriately. |
| **Comments about odour impacts** | |
| Concerns about odour | We are satisfied that there will not be a significant impact from odour, further details are in section 6.5.4 of this decision document. |
| Concern about odour from waste being delivered by ship and unloaded in the port | The Applicant has said that port location of the installation allows waste to be transported by road or delivered by ship. The transport of waste does not form part of this Permit up to the point it enters the installation. Therefore, the use of ships to transport waste is outside of the remit for this Permit. The Permit can only control emissions that occur from inside the site. We are satisfied these will be adequately controlled. Waste will be delivered in enclosed or covered vehicles that will minimise odour emissions and prevent significant impacts. |
| Concern about odour from baled waste if plastic wrapping is damaged | Baled waste will be stored inside and transferred to the waste bunker on a regular |

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| | basis with storage times minimised. Baled waste will be stored in a fully enclosed building maintained under slight negative pressure. This will reduce the risk of odour from baled waste. We are satisfied that there will not be a significant impact from odour, further details are in section 6.5.4 of this decision document. |
| Concern about odour escaping the building when the doors are open | The main access doors to the reception area that will be used for the waste delivery vehicles are fast closing roller shutters and will be kept closed (except during vehicles coming in and leaving) to maintain odour control. We are satisfied with what has been proposed. |
| Concern about odour emissions arising from vents | The building operates under negative pressure which prevents fugitive emissions. Air from the reception area will be used for combustion air in the furnace to generate negative pressure in the reception hall, rather than being vented.<br>We have also included in the permit, the condition 3.3 to manage any potential fugitive emissions. We will use permit condition 3.4.1 to control and regulate odour. |
| Concern about odour emissions from the stack | Odorous compounds will be destroyed in the furnace. Combustion at 850$^{o}$C for 2 seconds will destroy odorous substances. |
| Concern over odour control during shutdown when the furnace not operating. | We are satisfied that the measures proposed in the Application will prevent significant odour including during periods when the furnace is not operating. Further details are in section 6.5.4 of this decision document. |
| Concern that the design of the waste bunker will lead to odour from unmixed waste remaining at the bottom of the bunker | Air from the reception area will be used for combustion air in the furnace to generate negative pressure in the reception hall. This technique is used in many incineration plants and generally works well to control odour. We are satisfied that the measures proposed by the Applicant, and implemented through the Permit conditions, will ensure that that there will not be a significant impact from odour. Prior to periods of extended plant shutdown, the volumes of waste within the waste bunker will be reduced with the bunker being 'empty' during periods of planned shutdown. During the planned shutdown, assumed to be annual, deposits/residues retained within the base and corners of the bunker will be removed. |
| Concern that climate change may increase the risk of odour in the future and that the site should be required to adapt to the risk | We are satisfied with the 'climate change risk assessment' submitted with the application. The Operator is required to integrate climate change adaptation planning into their management system. Including considering if a changing climate could affect site operations and how this might affect their ability to comply with their permit conditions. |

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| Concern that a move towards waste with a higher biodegradable content will increase odour risk | We are satisfied that our standard odour condition will allow effective regulation of the site and prevent odour pollution.<br><br>Waste types and quantities are specified in Table S2.2 of the permit. Only one EWC code is included: 19 12 10 *combustible waste (refuse derived fuel (RDF)).* Any proposed changes to waste types would need to be considered under a separate future variation application. |
| **Comments about other impacts** | |
| Priority should be to recycle waste | This is primarily outside the scope of this determination. The obligation is on waste producers to apply the waste hierarchy and for local authorities to have their own waste strategy dealing with kerbside collections. Our role in this determination is to assess whether any residual waste that may be sent for incineration can be dealt with in an environmentally acceptable manner. This facility deals with residual waste after upstream segregation, recovery, and recycling initiatives. The initiatives higher up the waste chain should ensure RDF only includes residual waste not suitable for recycling.<br><br>The permit does not allow separately collected fractions suitable for recycling to be accepted for incineration as set out in Conditions 2.3.5 and 2.3.6 of the Permit. |
| Deliveries of waste to the site via ship should not be allowed. | The Applicant has said that port location of the installation allows waste to be transported by road or delivered by ship. The transport of waste does not form part of this Permit up to the point it enters the installation. Therefore, the use of ships to transport waste is outside of the remit for this permit. It is for the port/ harbour authority to ensure that port operations can operate in a manner that avoids marine pollution. Depending on the nature of any future proposals, other permits/ permissions may also be required. |
| Other countries, including the EU, are reducing the use of incinerators. The UK should not be building more. | Whilst we cannot comment on the accuracy of the claim this is outside the scope of this determination. We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. Mass burn incineration at this scale is considered BAT provided it meets the requirements (as set out in the BREF and BAT conclusions). See section 6 of this decision document for more details. |

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| Concerns about flies and pests | Pests are not usually an issue at incineration plants because the waste is only stored for a short period of time.<br><br>The waste reception and storage area, and all incoming waste handling activities will be undertaken within a fully enclosed building. The Applicant has set out good housekeeping practices in the Application to prevent and minimise the risk of pests and vermin.<br><br>Conditions 3.7.1 and 3.7.2 will provide controls. |
| Consideration should be given to breakdowns and emergency operations | The EMS will include a preventative maintenance scheme so that equipment is serviced and replaced before it breaks down. The permit sets limits on how long the plant can operate during abnormal operations. Section 5.5 of this decision document has more details including details of the risk assessment that shows there will not be a significant impact during abnormal operation. If an emission limit is exceeded at other times then the plant must stop feeding waste immediately. |
| Concerns over pollution impact on water quality | There are no emissions to water other than uncontaminated rainwater run-off. All such uncontaminated surface water run-off will be discharged, via separate discharge points, to Balaclava Bay (east) and/or Portland Harbour. Surface water run-off will be collected from areas of hardstanding and building roofs and discharged into the surface water drainage system. The surface water drainage system will be fitted with a retention interceptor and swales, prior to the discharge point, to prevent discharge of oils and sediment collected from vehicle movement areas and roadways being released off-site. |
| Concerns about litter and that waste will be lost during handling and reach the sea | Waste will be delivered in enclosed delivery vehicles and tipped into the bunker within the reception building. RDF bales would also be accepted at the site, these will be wrapped in plastic to prevent litter. The Applicant has set out good housekeeping practices in the Application to prevent and minimise the risk of litter escaping from the site. We are satisfied that based on the proposed control measures set out in the Application impacts from litter are unlikely to occur.<br>See section 6.5.3 on fugitive emissions for further information. |
| Other sources of electricity should be used to provide power to the port | We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. Wider issues of energy policy are outside our remit. |

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| Concerns over emissions of cooling water | There are no emissions of cooling water associated with this site. The installation will use Air Cooled Condensers (ACC) rather than Water Cooling. ACCs do not require significant quantities of water. The Facility will operate an ACC to condense the steam output from the turbine to allow return of the condensate to the boiler.<br>The only discharge to surface water permitted is discharge of uncontaminated surface water. |
| Concerns about groundwater contamination | 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. |
| Concerns about coastal flooding | The Environment Agency provides advice and guidance to the local planning authority on flood risk in our consultation response to the local planning authority. Our advice on these matters is normally accepted by both the Applicant and Planning Authority. When making permitting decisions, flood risk is still a relevant consideration, but generally only in so far as appropriate measures are in place to prevent pollution in the event of a credible flooding incident.<br><br>The risk of flooding is addressed as part of the planning process. |
| **Comments about noise impacts** | |
| Concerns about noise | Based on the Applicant's modelling we are satisfied that there will not be a significant impact from noise.<br><br>See section 6.5.5 for further details. |
| Concern that the operational noise from the installation has not been adequately modelled. | We audited the Applicant's noise assessment. As part of the audit, we checked that relevant factors, including representative source data, were considered appropriately by the Applicant and we are satisfied that there were. We are satisfied that there will not be a significant impact from noise.<br><br>See section 6.5.5 for further details. |
| Concern the noise assessment doesn't take into account the effect of the local geography i.e. sound resonation from the adjacent cliff and the carrying effect of noise across water. | Topographical data was included in the SoundPLAN modelling files provided with the application, to represent local topography. Our Air Quality Modelling Assessment Unit (AQMAU) checked alternative terrain data (LIDAR DTM resolution 1m), in their sensitivity check modelling. We consider the terrain data used to be representative of local topographical conditions. The consultant's SoundPLAN noise model and AQMAU's CadnaA noise model account for sound energy reflections off topographical features such as cliffs, water, and land. |
| The report '*Sharpe Acoustic Assessment of the effect of the operation of a proposed* | We received this report in response to the updated BS4142 Noise Impact Assessment |

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| *waste incinerator on the sound character and tranquillity at Portland, dated 7th November 2023*' was submitted for consideration as part of a consultation response. | submitted on 18/10/2023. We have taken the report and points raised into consideration during our assessment of the BS4142 Noise Impact Assessment.<br><br>We are satisfied that there will not be a significant impact from noise. See section 6.5.5 for further details. |
| Concern over noise from traffic including HGV movements | The environmental impact of HGV movements, and other traffic, off the site of the facility are not regulated under EPR.<br><br>On site vehicle movements were included in the Applicant's noise assessment and we are satisfied that there will not be a significant impact from noise. |
| Concern about noise levels at the Bibby Stockholm | We have considered potential noise impacts at the Bibby Stockholm. Based upon the information in the noise impact assessment combined with the information required through improvement condition (IC12) 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.<br><br>We are satisfied that noise will not cause a significant impact. See section 6.5.5 for further details. |
| **Comments about accident prevention** | |
| Accident risks from batteries were raised | It is possible that batteries could be placed in household bins and burned if received at the incinerator under the RDF code. However, quantities are likely to be small and not pose a significant risk. The likelihood of this is further reduced as the Applicant confirms that waste supply contracts for the site will include specifications for the supply of incoming waste. The site's waste specifications will require that the RDF has been pre-processed with incompatible and unstable wastes, such as batteries and other unacceptable materials, being removed from the incoming waste at the pre-processing facility. |
| Concern about fire risk from PVC mesh/ camouflage netting used to cover the buildings | The Environmental Statement discusses façade materials and concludes that cladding should be used, no mention is made of camouflage netting. In any case the aesthetic design/ appearance of the building is a matter for the planning authority.<br><br>The fire risk from building design elements such as cladding (or netting) will be controlled by other legislation. |

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| Concern as to how the public will be informed in the event of a major fire and how any evacuations would be managed. | Public action required during a fire would be dependent on a number of factors and would be managed by the relevant authority. It is not within the remit of this permit determination. In the unlikely event of a fire the FPP states that residents and business will be informed. There are several ways that this could be done and we expect the Operator to have procedures in place to achieve this. Pre-operational condition PO10 has been set for the Operator to submit a final FPP after the final design has been finalised and this will need to include these procedures. |
| Concern about the impacts from uncontrolled emissions resulting from a fire | We are satisfied that appropriate measures will be in place to prevent fires and to minimise the impact from a fire if it was to occur. |
| Concern about fire risk from stored RDF including self-combustion. | Many materials can self-combust under certain conditions. Self-combustion can be prevented by carefully managing storage times, pile volumes and height, and the temperature of the wastes. We are satisfied that appropriate measures will be in place to prevent fires and to minimise the impact from a fire if it was to occur.<br><br>The Applicant submitted a Fire Prevention Plan. Pre-operational condition PO10 requires further update to the Fire Prevention Plan prior to commissioning of the installation. A number of elements will be subject to confirmation at the final design stage and will be assessed by the Environment Agency against our guidance. We are satisfied that the current Fire Prevention Plan contains adequate information for permit issue. |
| Concerns that the current uses of the port mean there are additional risks including armaments, explosives, fuel pipelines and fuel storage bunkers nearby. | Pre-operational condition PO10 requires further update to the Fire Prevention Plan prior to commissioning of the installation. It is a requirement of part of this condition that the sensitive receptor plan/s is updated to include these land uses. The inclusion of these risks within the sensitive receptor plan/s will allow Environment Agency officers and fire fighters attending the site in the event of an incident to familiarise themselves with the surrounding risks and respond accordingly. |
| Concerns about explosions caused by hydrogen gas released from IBA storage | The example referred to is that of a cargo vessel off Plymouth being used to transport untreated IBA. The permit does not cover the loading of IBA onto boats or the use of boats to transport IBA.<br>IBA at the installation will be stored in an enclosed area but will have ventilation so our view is that there will not be a significant risk. There will be regular collections of IBA from |

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| | the IBA storage area for transfer off-site to a suitably permitted waste facility. |
| Concerns that the baled RDF storage will exceed that detailed in the application. | We have assessed the storage of baled RDF waste against our FPP guidance. The amount of baled waste permitted to be stored on site at anyone time is limited both through the FPP and Table S1.1 of the Environmental Permit.<br><br>The Applicant stated that waste will not be accepted if there is insufficient storage capacity available. |
| **Comments about the Applicant** | |
| Concerns about the operator not having experience operating this type of plant. | We are satisfied that the Applicant will be a competent operator because:<br>• An EMS certified to ISO 14001 will be in place<br>• A suitably qualified facility manager will be appointed who will have responsibility of Permit compliance<br>• An environmental policy will require that the Installation operates in full compliance with legislative requirements<br><br>Additional information in section 4.3 of this decision document |
| **Comments about regulation** | |
| A claim was made that the compliance history is poor at other incinerators. | We do not agree with this claim. The sector is generally a good sector in terms of compliance. |
| **Other concerns** | |
| Concerns about use of a mechanical grabber to load bottom ash onto boats. | The permit does not cover the loading of incinerator bottom ash (IBA) onto boats. The bottom ash will be loaded onto road vehicles within an enclosed ash handling/storage area for transport off-site for treatment.<br><br>The storage and transfer of IBA outside of the installation boundary has not been considered as part of this determination. The Permit does not control how IBA is used once it leaves the site although transport and subsequent use will be covered by duty of care, and other relevant, legislation. |
| Concern about the storage and handling of incinerator bottom ash (IBA) and Air Pollution Control residues (APCr) | Measures for handling of IBA and APC residues are summarised in sections 4.2.2 and 4.3.9 of this decision document. We are satisfied that the measures are appropriate. |
| Misleading claims that untreated bottom ash is inert | Bottom ash is not classed as inert waste, but normally as non-hazardous waste. A sampling protocol will be developed to ensure that the sampling and hazardous testing is done properly. Pre-operational |

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| | condition (PO3) requires that the protocol is in place and approved. |
| Waste incineration is not consistent with UK Government policies to move towards zero carbon status.<br><br>Concern that incineration encourages the continued use of "difficult to dispose-of" wastes. Local waste management policy should be to encourage waste minimisation and a circular economy. | We have to assess the environmental impacts of what is proposed which is an activity that can be authorised under EPR. Wider issues of policy are outside our remit.<br><br>Recovery and recycling initiatives are a matter for the local authority. |
| Several concerns were expressed over differences between the documents submitted for planning and permitting | The planning application and this environmental permitting application are separate processes. We have assessed the application based on information that was submitted in the application.<br>The operator is required to comply with any permit and any planning permission it obtains where any changes are required, they will need to be subject to separate application for a variation (for either planning or permitting). It is the Operator's responsibility to comply with all relevant statutory regimes and to ensure that any necessary authorisations are not in conflict. |

c) Representations from Individual Members of the Public

Over 375 responses were received from individual members of the public. Many of the issues raised were the same as those considered above. Where an issue has already been covered above it is not necessarily repeated below.

| **Brief summary of issues raised:** | **Environment Agency comment** |
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| **Comments about location** | |
| Concern about the proximity to local housing, the sea and habitats | Decisions over land use are matters for the planning system. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. The environmental impact is assessed as part of the determination process and has been reported upon in the main body of this document. |
| Concerns about future flooding of the coastal site due to climate change | Our advice on these matters is normally accepted by both Applicant and Planning Authority. When making permitting decisions, flood risk is still a relevant consideration, but generally only in so far as it is taken into account in the accident management plan and that appropriate measures are in place to prevent pollution in the event of a credible flooding incident. |

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| | As part of our determination we have assessed the climate change adaptation risk assessment and consider it to be satisfactory. |
| Concern that the location of the incinerator would restrict required access to a COMAH site already located at the port. | Decisions over land use are matters for the planning system. We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. |
| **Comments about air emissions and air risk assessment** | |
| Concern about impacts being averaged over a year | We have assessed both long- and short-term impacts. We are satisfied that there will not be a significant impact from emissions to air when based on the maximum concentrations that represent the worst-case predictions. Impacts at individual receptors will be lower than the maximum and we are satisfied there will not be an unacceptable impact at any receptor.<br><br>Section 5.2 of this decision document has further details. |
| The impact on air quality for residents, workers and visitors was not adequately assessed. | We are satisfied that there will not be a significant impact on health due to the Installation. Sections 5.2 and 5.3 of this decision document has further details.<br><br>The standards that we have used to assess against are set to protect all members of the public. |
| Concern that impacts at all receptors were not considered, including:<br>• Prisons<br>• Asylum seeker accommodation<br>• Ships in the port | We are satisfied that there will not be a significant impact from emissions to air when based on the worst impacted receptors that represent the worst-case predictions. Impacts at individual receptors will be lower than the maximum and we are satisfied there will not be an unacceptable impact at any receptor. The port was included within the modelling domain.<br><br>Sections 5.2 and 5.2.4 of this decision document has further details.<br><br>The Bibby Stockholm (“the barge”) is now moored within 500 metres of the installation, the intended use of this barge is to provide accommodation for asylum seekers. The barge is considered to be an additional sensitive receptor and as such it needed to be taken into consideration during determination. As with all human health receptors, we considered potential impacts on the barge including odour, noise and impacts from air emissions. We are satisfied there will not be an unacceptable impact at this receptor. |

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| The dispersion software used by the Applicant is not appropriate for the setting of the proposed site | We are satisfied the modelling adequately takes the site setting into account.<br>We carried out check modelling in our audit using the consultant's modelling files in ADMS 5.2. We tested sensitivity using alternative modelling software AERMOD (US EPA executable version 19191) with AERMET meteorological data processor; and CALPUFF View (US EPA approved version), using CALMET meteorological data processor to consider modelling uncertainties and the sensitivity of results to alternative models. Based on the recommendations from our audit, the consultant remodelled their emissions with Breeze AERMOD. We are therefore satisfied that their modelling approach is sufficient with regards to model software selection and sensitivity to alternatives. |
| Concern that wind frequently comes from the north and east and that this was not considered in the modelling. | Weather conditions, including wind direction and speed, were taken into account in the Applicant's air dispersion modelling.<br><br>The dispersion modelling tested sensitivity using five years of meteorological data observed at the Isle of Portland meteorological station recorded between 2014 and 2018 and 2 years of meteorological data at an alternative location - Portland Harbour between 2017-2018.<br><br>We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. These are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants. |
| Concerns about emissions of hydrocarbons | Impacts have been assessed for polycyclic aromatic hydrocarbons (PHA) pollutants in the Air Dispersion Modelling provided in the Application. PAH emissions are shown to be insignificant.<br>See section 5.2 of this decision document for more information. |
| Emissions will cause pollution from ozone and peroxyacetyl nitrates (PANs). | Ozone and PANs are produced by the action of sunlight on volatile organic compounds (VOCs) and oxides of nitrogen (NOx). It is considered that there is very little if any risk from the incinerator of an exceedance of an air quality standard. This has been considered in Section 5.2 of this document.<br><br>The potential of substances to form ozone and other substances when reacting with sunlight is a factor considered when setting ambient air quality standards. Therefore, it is not considered that any additional controls or |

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| | conditions are required, beyond those already proposed to minimise emissions. |
| Concerns over the impacts of temperature inversion | Temperature inversions typically occur on clear nights with calm winds. They develop during the night and typically break up a few hours after sunrise. The applicant's ADMS model considered the impact under stable condition type temperature inversions. |
| The stack should be higher to aid dispersion | We are satisfied that the stack height has been calculated in accordance with IED article 46(1). Having assessed the Application as a whole we are satisfied that the measures proposed, of which stack height is one aspect, are BAT. |
| Concern about excess cadmium levels and that there are errors in the figures provided by the applicant. | The consultation response referred to figures given in Table 5 of document S2953-0320-0012RSF, dated 7 May 21. This table considers the process contributions for cadmium at discreet human health receptors. The units for this table are incorrectly presented as micrograms per metre cubed ($\mu g/m^3$), it should be nanograms per metre cubed ($ng/m^3$). This is an error in the table and although the units are incorrectly stated the figures in the table are correct when taken to be in $ng/m^3$.<br>The Applicants Air Quality modelling considered the Ambient Air Directive (AAD) Target of $5ng/m^3$ for cadmium. Although cadmium didn't screen out as insignificant, it has been assessed as being unlikely to give rise to significant pollution in that the predicted environmental concentration is less than 100% (taking expected modelling uncertainties into account) of both the long term and short-term Environmental Standard. |
| Concerns about the in combination impacts from stack and traffic emissions | The air quality assessment considered existing background pollution levels which includes emissions from traffic. Movement of traffic to and from the Installation is outside of our remit but will normally be an issue for the planning authority to consider. Our consideration is whether the emissions from traffic could affect the prevailing pollutant background levels which could be a consideration where there are established high background concentrations contributing to poor air quality. In this case the small increase in pollutants from traffic would not affect the background levels to the point where it would affect the conclusions of the air quality assessment. |
| Concern about the bioaccumulation in the marine environment from emissions to air | The concern is that emissions to air from the installation will accumulate in the marine environment and pass into the food chain. We have consulted a number of sources to |

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| | investigate potential fish intake by members of the public and agree that the ingestion of fish is unlikely to be a pathway. However, we considered the consumption of locally caught fish pathway in our Human Health Risk Assessment screening checks, and it indicated intakes below the UKHSA screening criteria.<br>Therefore, our view is that no further assessment on the marine environment is required. |
| Concern that the high salinity content of the air may interact with emissions from the stack | We are satisfied that the Applicant's modelling represents a worst-case scenario for the assessed pollutants. The effects of plume depletion and chemical transformations were not modelled by the Applicant. We are satisfied that their approach is conservative. |
| Concern that predictions taking future weather data into account have not been considered | The consultant tested sensitivity using five years of meteorological data observed at the Isle of Portland meteorological station recorded between 2014 and 2018 and 2 years of meteorological data at an alternative location - Portland Harbour between 2017-2018.<br><br>We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. These are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants.<br><br>Climate change is assumed to be less than the inter year variation in the data and so is not expected to affect the predictions significantly. |
| **Comments about health impacts** | |
| Concern was expressed that there will be an impact on health due to the Installation including:<br>• those with existing health conditions<br>• young people<br>• elderly<br>• receptors in schools, residential care facilities and prisons | We are satisfied that there will not be a significant impact on health due to the Installation. Section 5.3 of this decision document has further details.<br><br>The standards that we have used to assess against are set to protect all members of the public. |
| Concerns about health impacts from air pollutants, including nitrogen oxides, sulphur dioxides, particulate matter, lead, mercury, dioxins and furans. | We have assessed the impacts from these pollutants and we are satisfied that there will not be any significant impacts. See section 5.2 including section 5.2.2 (consideration of key pollutants) of this decision document for further details.<br><br>The impact from dioxins/furans is described in more detail in section 5.3 of this decision document. We are satisfied that impacts will not be significant. |

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| Concern over the mental health of residents due to the perceived risk of emissions from the site and the visual impacts. | Our view as set out in this decision document (section 5.3) is that emissions from the Installation will not have a significant effect on health. There is therefore no reason that there should be an impact on mental health. |
| Concern about the increased health impacts caused by poor dispersion | We checked the weather data used by the Applicant when we audited the Applicant's dispersion modelling. This included checking weather data from other weather stations around the site and using our own weather data. We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. These are likely to capture local patterns and variation in meteorological conditions in the dispersion of pollutants. We are satisfied that the proposal is unlikely to result in a significant impact on air quality. |
| Concern about health impacts from ammonia emissions | We have assessed the impacts from ammonia and we are satisfied that there will not be any significant impacts. See section 5.2 including section 5.2.2 (consideration of key pollutants) of this decision document for further details. |
| The HHRA doesn't consider Benzenes or PAHs | Emissions of benzene and polycyclic aromatic hydrocarbons (PAH) are considered in the Applicant's dispersion modelling (Appendix D.2: Process Emissions Modelling). We have audited the dispersion modelling submitted with this Application and we are satisfied that there will not be any significant impacts. |
| **Comments about impacts at ecological sites** | |
| Concern that the full impact of emissions on protected sites has not been considered. | The assessment considers potential impacts on relevant ecological sites, including:<br><br>• Habitats sites (i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar) located within 10Km of the Installation<br>• Sites of Special Scientific Interest (SSSI) located within 2Km of the Installation<br>• non-statutory local wildlife sites (LWS) located within 2Km of the Installation<br><br>Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. |
| Concern about the impact of acidic gases on habitats, flora and fauna | Our assessment has considered the potential impact of acidification and contribution of nitrogen oxides, as nutrient nitrogen. Our assessment at ecological sites is described in section 5.4 of this decision |

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| | document. We are satisfied that there will not be a significant impact. |
| Concern over impacts on the marine environment, including impacts on its ecosystem, flora and fauna | It is not anticipated that emissions to air from the installation will significantly impact the marine ecosystem. The open sea is not sensitive to aerial emissions or deposition from combustion processes. Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. |
| Concern about effects on marine conservation zones | Our assessment at marine conservation zones is described in section 7.2.8 of this decision document. We are satisfied that there will not be a significant impact.<br>It is not anticipated that emissions to air from the installation will significantly impact the marine ecosystem as the open sea is not sensitive to aerial emissions or deposition from combustion processes. Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. |
| Concern about the impact of increased nitrogen on calcareous grasslands | Our assessment at ecological sites is described in section 5.4 of this decision document. We are satisfied that there will not be a significant impact. |
| Dorset Wildlife Trust have not been informed about the Application. | We considered that we did not need to consult with Dorset Wildlife Trust on the Application documents.<br><br>We are satisfied with the way that we have considered impacts on ecological sites and wildlife, as set out in section 5.4 of this decision document. |
| **Comments about noise impacts** | |
| Concern over noise from fans | The noise assessment undertaken by the Applicant considered potential noise sources at the installation, including fans. We audited the Applicant's noise assessment. We are satisfied that there will not be a significant impact from noise. See section 6.5.5 for further details. |
| Concern over noise from traffic and loading/ off loading waste | Waste deliveries will typically only occur during daytime periods. The Applicant's noise assessment included on-site vehicle movements and we are satisfied that there will not be a significant impact. |
| Concern that the acoustic assessment is incomplete | The Applicant submitted a revised noise assessment that contained details of the noise sources. We audited the Applicant's noise assessment. We are satisfied that there will not be a significant impact from noise.<br><br>See section 6.5.5 for further details. |

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| Concern about the impact of noise at night | We audited the Applicant's noise assessment, which considered night-time impacts. We are satisfied that there will not be a significant impact from noise.<br><br>See section 6.5.5 for further details. |
| Concern that monitoring locations are not representative of background noise levels | We audited the Applicant's noise assessment, including the chosen monitoring locations. We are satisfied that the Applicant identified the nearest NSR's to the installation.<br><br>See section 6.5.5 for further details. |
| Concern that the noise assessment doesn't include for an actual baseline study of noise levels throughout day and night. | While a baseline survey wasn't included in the original NIA dated September 2020, the subsequent NIAs submitted (dated May 2021 and October 2023) did include a baseline survey in line with British Standard 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound.<br><br>We consider that the consultant's unattended sound survey and subsequent BS 4142 noise impact assessment is representative of daytime (07.00 – 23.00) and night-time (23.00 – 07.00) periods at the nearest noise sensitive receptors. We audited the Applicant's noise assessment and consider it is conservative and suitable to support the environmental permit application. See section 6.5.5 for further details. |
| Concerns about vibrations generated by the operation of the site. | We are satisfied that vibration will not be a significant issue. |
| **Comments about odour impacts** | |
| Concern that the odour assessment is not fit for purpose | We are satisfied that the proposed control measures will prevent any significant emissions of odour from the site. Section 6.5.4 has further details.<br><br>Odour condition 3.4.2 will require the implementation of an odour management plan if deemed necessary by the Environment Agency. If required, this could ultimately require changes to be made on site if it is deemed that improvements are necessary. |
| Concern that receptors have not been considered fully in the odour assessment | We are satisfied with the receptors considered in the assessment and we consider that the proposed measures will prevent significant pollution from odour.<br>We are satisfied that there will not be a significant impact from odour, further details are in section 6.5.4 of this decision document.<br><br>The Bibby Stockholm is considered to be an additional sensitive receptor and as such it needed to be taken into consideration during |

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| | determination. The operator provided an updated Odour Mitigation Strategy which considered the barge in response to our Schedule 5 Notice dated 08/09/2023. We are satisfied there will not be an unacceptable impact at this receptor. |
| Odour modelling and monitoring should be undertaken<br><br>Acceptable odour units (OU) levels have not been considered | Whilst odour modelling and monitoring has its role, our approach is to impose operational controls which should prevent odour occurring in the first place, rather than setting OU limits in the permit.<br>Our view is that odour modelling (including an assessment of OUs) and monitoring is not required in this case. We will use Permit conditions 3.4.1 and 3.4.2 to control and regulate odour.<br>We are satisfied that odour modelling is not required to allow us to assess the application and that our standard odour condition will allow effective regulation of the site and prevent odour pollution |
| Concern that the odour assessment does not consider all potential sources of odour | We are satisfied that potential sources of odour from the installation have been considered in the Application. 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. |
| Concern over odour impacts during shut-down | The Applicant described measures in the Application to minimise the potential for odour during periods of shut-down. These operating techniques are incorporated into Table S1.2 of the permit. We are satisfied that the measures are appropriate. See section 6.5.4 for further details.<br><br>In addition, odour condition 3.4.2 will require the implementation of an odour management plan if deemed necessary by the Environment Agency. If required, this could ultimately require changes to be made on site if it is deemed that improvements are necessary. |
| **Comments about waste types** | |
| Concerns how plastic waste is managed | We are satisfied that the plastics within the waste stream can be burned whilst complying with the permit emission limits.<br><br>Waste types and quantities are specified in Table S2.2 of the permit. Only one EWC code is included: 19 12 10 *combustible waste (refuse derived fuel (RDF))*. Although it is likely that the RDF will contain some plastics, most plastics should be separated at source. Waste acceptance criteria will prevent |

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| | separately collected plastic unless contaminated. Other measures such as bunker management, combustion control and emission limits will provide sufficient control to ensure that any plastic in the waste will not cause significant pollution or harm. |
| Concern over the types of waste and where they come from. | The Operator will have waste pre-acceptance and waste acceptance procedures to ensure that only waste authorised by the Permit is received and burned.<br><br>The Permit does not control where the waste comes from because that falls outside the scope of this permit determination.<br><br>Waste types are specified in table S2.2 of the Permit. We are satisfied that these wastes are suitable for burning at the Installation, further details are in section 4.3.6 of this decision document. We are satisfied that the operating techniques will ensure that emission limits can be met, the emission limits apply at all times whatever wastes are being burned. |
| Concern about incinerator capacity and its effect on waste recovery and recycling activities. Also concern that there will be insufficient waste feedstock available in the future | It is argued that as the quantity of residual waste reduces over the lifetime of the installation, the need to maximise efficiency by maintaining the incinerator at full capacity will suppress waste recovery and recycling initiatives, which are higher up the waste hierarchy. The capacity of the incinerator is primarily a matter for the Applicant designed to meet the waste disposal needs of the local authority. The proposed facility forms part of an integrated waste management strategy; any material arriving at the facility will be residual waste arisings following upstream waste segregation, recovery and recycling initiatives. The shape and content of this strategy is a matter for the local authority. The incinerator is one element in that strategy, and the Permit will ensure that it can be operated without giving rise to significant pollution or harm to human health. In any event Permit conditions will prohibit the burning of any separately collected or recovered waste streams, unless contaminated and recovery is not practicable. |
| **Comments about BAT, emission limits and control measures** | |
| Concern that the BAT assessment is not sufficient | We have assessed documents submitted in support of the application, including the BAT assessment. Our view is that the assessment is sufficient and that the measures proposed by the Applicant are BAT. This is explained in detail in section 6 of this decision document. |

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| Filters will not capture all particles. | Our view is that bag filters are BAT. Filter bags provide particulate abatement from the fabric itself. In addition, particulate removal also occurs via a three-dimensional dust cake which is maintained on the surface of the filter membrane by controlling the bag cleaning process and the pressure drop through the fabric filter. The membranes have very small pores which in combination with the filter cake which accumulates on the bag filters provide effective abatement of particulates. Research has shown the removal efficiency is very high even for smaller particles. See section 5.3.3 of this decision document for further details |
| **Comments about other issues** | |
| Claim that landfill is a better environmental option than incineration. | The Applicant has not applied to operate a landfill site, the Application is for an incineration plant and we have to assess whether what they propose is acceptable. Our assessment of BAT is set out in section 6 of this decision document. |
| Alternative technologies to incineration should be used. | It is argued that Incineration is not an environmentally sustainable technology and therefore almost by definition cannot be considered to be the Best Available Technique (BAT). Mass burn incineration at this scale is considered BAT provided it meets the requirements (as set out in the BREF and BAT conclusions). See section 6 of this DD for more details. |
| The proposal does not satisfactorily demonstrate carbon neutrality, or reduction in overall carbon emissions. | The way we have considered global warming as part of the BAT assessment is discussed in section 6.3. The proposal does not need to demonstrate carbon neutrality or an overall reduction in carbon emissions.<br>There is currently no legal requirement by for incineration plants to have carbon capture or be carbon capture ready. This is likely to change, in the near future, following a government consultation on decarbonisation readiness legislation for combustion plants (including energy from waste plants). |
| Carbon capture and storage should be used. | |
| Concern over the impact of light pollution | Pollution from light is primarily a concern for considering visual impacts and as such generally covered by the planning process. In any event light pollution is not likely to have a significant effect on health or the environment. |
| Concern that flooding of the causeway would block access and lead to a build up of waste (RDF and bottom ash) | Temporary restriction of access to the site caused by occasional flooding, or other blockage, of the road network is not expected to have a significant effect on waste management at the site. Also, although not covered by this permit, the Applicant has also proposed transfer of waste to and from site via ship, which would avoid the use of the causeway. |

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| The proposed incinerator would not divert waste from landfill as Dorset already sends its waste for incineration. | This is outside the scope of this determination. Local waste management arrangements are a matter for the local authority. |
| Incineration is not a sustainable solution to manage household waste | It is argued that Incineration is not an environmentally sustainable technology. At this time however, mass burn incineration is permissible under the EPR and can be considered BAT, subject to the appropriate assessments being made. |
| Concern over emissions from traffic | We have reviewed all background concentrations, with particular focus on recorded values presented in the Annual Status Report for Weymouth & Portland local authority, and Defra UK Air website. These measured values include emissions from traffic and shipping. Following our review of the background and check modelling, although we do not agree with the consultant's absolute numerical predictions, we agree with their conclusions.<br>Movement of traffic to and from the Installation is outside of our remit but will normally be an issue for the planning authority to consider. Our consideration is whether the emissions from traffic could affect the prevailing pollutant background levels which could be a consideration where there are established high background concentrations contributing to poor air quality. In this case the small increase in pollutants from traffic would not affect the background levels to the point where it would affect the conclusions of the air quality assessment.<br>Vehicle movements within the Installation boundary are considered within the remit of the Environmental Permit. However, the emissions from this limited area are highly unlikely to be significant and will not affect the conclusions of the air quality impact assessment. |
| Poor environmental risk assessment | We have assessed documents submitted in support of the application, including the environmental risk assessment. We are satisfied with the quality of those documents. We are satisfied that this Installation will not cause significant pollution or harm and that it will provide a high level of protection for the environment as a whole. |
| Concerns that ash will enter the water during loading onto ships | The permit does not cover the loading of incinerator bottom ash (IBA) onto boats. The bottom ash will be loaded onto road vehicles within an enclosed ash handling/storage area for transport off-site for treatment. |

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| | The storage and transfer of IBA outside of the installation boundary has not been considered as part of this determination. The Permit does not control how IBA is used once it leaves the site although transport and subsequent use will be covered by duty of care, and other relevant, legislation. |
| The permit should not be issued because of the precautionary principal. | The United Kingdom Interdepartmental Liaison Group on Risk Assessment (UK-ILGRA) state in their paper "The Precautionary Principle: Policy and Application" that the precautionary principle should be invoked when there is good reason to believe that harmful effects may occur and the level of scientific uncertainty about the consequences or likelihood of the risk is such that the best available scientific advice cannot assess the risk with sufficient confidence to inform decision making. The Health Protection Agency (as it was called then) stated in its response to the British Society for Ecological Medicine Report, "The Health Effects of Waste Incinerators" that "as there is a body of scientific evidence strongly indicating that contemporary waste management practices, including incineration, have at most a minor effect on human health and the environment, there are no grounds for adopting the 'precautionary principle' to restrict the introduction of new incinerators". As explained in section 5.3 the UKHSA maintain their view on impacts from incineration. |
| Concerns that incinerators reduce waste recycling | We have to assess the environmental impacts of what is proposed which is an activity that can be authorised under EPR. Wider issues of waste policy are outside our remit. |
| Concerns about impacts on historical sites, including changes in setting | Decisions over land use are matters for the planning system. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. |
| Concerns about discharges of process waters to sea | The only discharge to surface water permitted is discharge of uncontaminated runoff, via retention interceptor and swales, to Balaclava Bay (east) and/or Portland Harbour. |
| Operation of an incinerator is inconsistent with the declaration of a climate and ecological emergency by local councils | We have to assess the environmental impacts of what is proposed which is an activity that can be authorised under EPR. |
| Concern over emissions to sewer | Water will be re-used at the site and there will be an occasional discharge to sewer in the event that there is an excess of process water. Any discharges to sewer from the |

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| | installation are likely to be small and infrequent. We are satisfied that this occasional discharge will not be significant or harmful. See section 6.5.2 for further details.<br><br>Emissions to sewer from an installation can only be made with the consent of a sewerage undertaker, who will only accept waste water they are satisfied they can deal with appropriately. |
| Concern about the storage of chemicals and raw materials | 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.<br><br>Key measures proposed by the Applicant to control fugitive emissions are covered in section 6.5.3 of this document. Based upon the information in the application we are satisfied that appropriate measures will be in place to prevent and /or minimise fugitive emissions. |
| Concerns about water use, including that water use at the installation may result in negative impacts on the area | Mains water is used at the site and no abstraction takes place therefore there will be no direct environmental impact in relation to the water being obtained.<br><br>Through the permitting process we assess whether an operator is efficient with resources and minimises emissions.<br><br>The ERF has been designed to minimise use of potable water. The main use of water at the plant will be to make up the water for the boilers. Other water consuming processes include the wet ash conveyor and the SNCR injection nozzles. The application sets out the following points in relation to water use:<br><br>• Most of the steam used in the turbine boiler will be recycled as condensate.<br>• Where practicable, waste waters generated from the process would be reused/recycled within the process.<br>• Water from washdown will be discharged into a settlement tank prior to re-use in the ash quench system.<br><br>We consider these measures are adequate to minimise water use on the installation. The operator will be required to report on water use and review environmental performance as part of their Environmental Management System. |
| Concerns over the release of microplastics | We are satisfied that there will not be a significant issue with emissions from the Installation. Bag filters will be fitted to |

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| | provide particulate abatement. The membranes have very small pores which in combination with the filter cake which accumulates on the bag filters provide effective abatement of particulates. |
| **Comments about monitoring** | |
| Comments about how the emissions will be monitored | The Permit requires continuous monitoring for emissions to air of particulates, oxides of nitrogen, sulphur dioxide, carbon monoxide, total organic carbon, hydrogen chloride and ammonia. Other substances are required to be monitored quarterly or bi-annually.<br>These requirements are in line with the IED and current BREF.<br>The Permit also requires continuous monitoring of several process variables (e.g. combustion temperature) to ensure that the incinerator is running optimally and minimising emissions.<br>We are satisfied that the monitoring requirements in the Permit are appropriate. |
| Ambient air monitors should be placed nearby | Ambient air monitoring around operating incinerators is not a reliable method of establishing the impact as it does not identify the source of the emissions. We consider it is better to use air dispersion modelling to predict the impact based on the highest allowed emissions (emission limit values). We have audited the modelling and we are satisfied that it is suitable for assessing the impact from the Installation.<br>The Permit requires monitoring to be carried out to ensure that the emission limits values that were used in the modelling are met. |
| Automatic monitoring should be carried out | The Permit requires continuous monitoring for emissions to air of particulates, oxides of nitrogen, sulphur dioxide, carbon monoxide, total organic carbon, hydrogen chloride and ammonia. Other substances are required to be monitored quarterly or bi-annually.<br>These requirements are in line with the IED, current BREF and we consider these measures to be appropriate. The prevention and minimisation of dioxins and furans is achieved through injection of activated carbon, optimisation of combustion control, avoidance of de novo synthesis and the effective removal of particulate matter. The plant has to shut down if not operating to required standards.<br>The Permit also requires continuous monitoring of several process variables (e.g. combustion temperature) to ensure that the incinerator is running optimally and minimising emissions.<br>We are satisfied that the monitoring requirements in the Permit are appropriate. |

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| How will discharges to sewer and water be monitored | There will be an occasional discharge to sewer in the event that there is an excess of process water. We are satisfied that this occasional discharge will not be significant or harmful. Discharges to sewer will be in accordance with a Trade Effluent Consent secured from the local sewerage undertaker. Trade Effluent Consents typically include discharge limits and monitoring requirements which the operator would be required to comply with.<br><br>The only emission to surface water allowed under the Permit will be uncontaminated rainwater run-off emitted to either to Balaclava Bay (east) and/or Portland Harbour. There are no limits or monitoring requirements associated with the discharge. The water discharge will be inspected during Environment Agency compliance visits to the site to ensure only uncontaminated water is being discharged. |
| Concern that Operator will carry out the monitoring. | The Environment Agency used to carry out check-monitoring when there were relatively few standards for monitoring. Check monitoring is no longer as important because:<br><br>• There is now a wide variety of standards for monitoring, covering CEMs, periodic monitoring, and quality assurance.<br>• We have MCERTS for CEMs and test labs.<br>• We have EN 14181 for quality assurance of CEMs.<br>• We require CEMs and test labs to be accredited to MCERTS and all the applicable standards.<br>• We carry out audits of operators' provisions for monitoring and audit the monitoring results.<br>However, we still do check monitoring where it is considered appropriate.<br><br>Furthermore, as well as auditing operators' provisions for monitoring, and how they apply the monitoring requirements of the permit, we also regularly audit test laboratories. |
| **Comments about residues** | |
| Concern about the treatment of incinerator bottom ash | The Application proposes that bottom ash will be transported off-site to a suitably permitted waste treatment facility for recovery/disposal. There will be no bottom ash treatment undertaken at the installation. |
| Concern over the transport of ash over large distances for further treatment | Movement of traffic external to the installation is not within our remit. |

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| Concern that the ash will be toxic | Bottom ash is normally classed as non-hazardous waste. A sampling protocol will be developed to ensure that the sampling and hazardous testing is done properly. Pre-operational condition (PO3) requires that the protocol is in place and approved |
| **Comments about accident prevention** | |
| Concern about how an accident would be managed. | The Applicant provided an accident risk assessment in the Application. An accident management plan will also form part of their environmental management system that is subject to Pre-operational condition PO1.<br><br>COMAH legislation covers sites that pose the highest accident risks and these sites would have major accident plans. This Installation is not subject to COMAH regulations due to not meeting any of the COMAH thresholds. |
| Concern about access to the site by emergency services in the event the causeway is flooded and narrow roads restricting access | We have assessed the Applicant's proposals, including accident prevention and fires. Although it is not possible to address every eventuality, we are satisfied that they adequately cover what we consider to be realistic scenarios.<br><br>Generally, consideration of the local road network, including access via the causeway, are not part of the Installation and so vehicle movements on these roads are outside our remit for control within the Environmental Permit. However, given the coastal location of the installation we consider that there will be other potential ways for emergency services to access the site in the event road access is not available. |
| Additional risk in the event of an accident posed by presence of naval nuclear vessels in the port | We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. The type of vessels that may or may not use the port do not affect that. |
| Receptors have only been considered in 1km in the FPP | This is in line with our web guidance on Fire Prevention Plans, which states that Applicants must have plans showing all sensitive receptors within a 1km radius of your site that could be affected by a fire. |
| Concern was expressed about some specific accident scenarios including:<br>• Concern over the risk of explosion.<br>• Concern over extreme events such as war, terrorism or earthquake.<br>• Concern over site security and sabotage. | Our view is that there is not a significant risk of explosion from incineration plants.<br><br>Based on information provided in the Application, we are satisfied that the site will be secure.<br><br>We have assessed the Applicant's proposals, including accident prevention and fires. We are satisfied that they adequately cover what we consider to be realistic scenarios. We would not expect to see extreme events such as war, terrorism or |

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| | earthquake included in an accident management plan due to very low risk of them occurring. |
| Concern about the potential for steam leaks | The occurrence of malfunctions will be minimised by the Operator's preventative maintenance programme which will be included within the Environmental Management System. Section 4.3.2 of the decision document states that we are satisfied that an appropriate Environmental Management system (EMS) will be in place. Information in the Application confirmed that the EMS would meet the requirements of our guidance. PO1 of the Permit requires the EMS to be in place. The Applicant has not submitted an Accident Management Plan (AMP). However, an AMP will form part of the EMS and must be in place prior to commissioning as required by a pre-operational condition (PO1). See section 4.3.4 of this decision document for further information.<br><br>Condition 4.3.1 requires the Operator to notify the EA in the event of any accident from the operation of the installation which may significantly affect the environment, or any breach of any permit condition. |
| **Comments about the Applicant** | |
| Concern about who the operator of the site will be, if they will be the sole operator and if the operator were to change in the future. | We consider that the operator has provided adequate evidence to show that they will be competent and the legal operator of the regulated facility. See additional information in section 4.3 of this decision document<br><br>Any future change in the legal operator of the installation would require a permit transfer application by the operator and proposed operator and assessment by the Environment Agency, this would include an assessment of operator competency |
| Concern that the applicant's website contains inaccurate or misleading. | We are not responsible for the content of the Applicant's website. |
| **Comments about energy efficiency/recovery** | |
| Concern over the energy efficiency | Having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that energy is used efficiently within the Installation and that energy will be recovered as far as practicable.<br>Section 4.3.7 of this decision document has further details. |
| Concerns that energy supply will not benefit the local area or national grid | We are satisfied that as much energy as practicable will be recovered from the waste. Further details are in section 4.3.7 of this |

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| Concern that the plant will not operate as combined heat and power (CHP). | decision document. Generated electricity will be used on-site with the excess exported to the National Grid. The Applicant has also assessed the possibility of supplying power to the local area and has identified the adjacent port as a potential receiver.<br><br>The Applicant assessed the possibility of supplying heat to the local area. The conclusion was that provision will be made for connection to a CHP scheme to provide further energy recovery by the export of heat, if any potential heat users become available in the future.<br><br>Section 4.3.7 of this decision document has further details. |
| **Comments about regulation** | |
| Concern over whether the Environment Agency will investigate complaints. | If we receive any complaint, we will assess the complaint and investigate it as appropriate. |

d) Representations on issues that do not fall within the scope of this permit determination

| **Brief summary of issues raised:** | **Environment Agency comment:** |
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| View expressed that this is not the right location for the Installation. | Decisions over land use are matters for the planning system. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. The environmental impact is assessed as part of the determination process and has been reported upon in the main body of this document. The location of the installation can have an impact on the ability to recover waste heat for use in nearby residential, commercial or industrial premises and we commented on this in our consultation response to the local planning authority. |
| Concerns that an incinerator should not be located in or adjacent to a deprived area | |
| Concerns about the visual impact | Visual impacts are generally covered by the planning process. We have considered specific concerns about visual impacts of the plume and light pollution above. |
| Comments about vehicle access to the installation and traffic movements on local roads, including an increase in traffic. | Movement of traffic to and from the Installation is a relevant consideration for the grant of planning permission but does not form part of the Environmental Permit decision making process. Except where there are established high background concentrations contributing to poor air quality |

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| | and the increased level of traffic might be significant in these limited circumstances.<br>We have considered specific concerns about road access with regards to waste stockpiles and access in the event of an emergency above. |
| The incinerator is not in line with the local waste plan | We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. Wider issues of waste policy are outside our remit. |
| Concerns that the installation is not in line with local development plans and policies. | Location and development plans are primarily a land use planning issue. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. |
| Dorset Council already has a contract with another incinerator | We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. Wider issues of waste policy are outside our remit.<br><br>It is argued that as the quantity of residual waste reduces over the lifetime of the installation, the need to maximise efficiency by maintaining the incinerator at full capacity will suppress waste recovery and recycling initiatives, which are higher up the waste hierarchy. The capacity of the incinerator is primarily a matter for the Applicant designed to meet the waste disposal needs of the local authority. The proposed facility forms part of an integrated waste management strategy; any material arriving at the facility will be residual waste arisings following upstream waste segregation, recovery and recycling initiatives. The shape and content of this strategy is a matter for the local authority. The incinerator is one element in that strategy, and the Permit will ensure that it can be operated without giving rise to significant pollution or harm to human health. In any event Permit conditions will prohibit the burning of any separately collected or recovered waste streams, unless contaminated and recovery is not practicable. |
| An incinerator is not needed as Dorset already has high levels of recycling | |
| Concerns that waste will be imported from outside Dorset. | It is argued that diminishing supplies of residual waste from the surrounding area over the lifetime of the installation will result in the importation of waste from outside the area, sub-region or country. This is similar to the point above on the potential impact on local recycling and is not a consideration for this permit application. |
| Concerns about waste types sourced from outside the UK | |

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| Concerns the incinerator will not contribute to the local economy or job market. | This is not within our remit. |
| Concern provision of a new footpath is not adequate mitigation | This is not within the remit of the permit application and is a consideration for planning permission. |

## B) Advertising and Consultation on the Draft Decision

This section reports on the outcome of the public consultations on our draft decision carried out between 12/07/2024 and 11/08/2024, also between 20/09/2024 and 20/10/2024.

In some cases, the issues raised in the consultation were the same as those raised previously and already reported in section A of this Annex and so have not necessarily been repeated in this section.

Also, some of the consultation responses received were on matters which are outside the scope of the Environment Agency's powers under the Environmental Permitting Regulations. Our position on these matters is as described previously.

### a) Consultation Responses from Statutory and Non-Statutory Bodies

| Response Received from Dorset Council | |
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| Brief summary of issues raised: | Summary of action taken / how this has been covered |
| At the Planning Inquiry (December 2023) the Appellant indicated that the facility would not restrict fuel to RDF but that black bag unsorted waste could also be taken to the plant to be used as fuel. If this is the case would the black bagged unsorted waste require different ELVs as it is a different waste? | Waste types and quantities are specified in Table S2.2 of the permit. Only one EWC code is included: 19 12 10 combustible waste (refuse derived fuel (RDF)). Any proposed changes to waste types would need to be considered under a separate variation application. We would only grant such a variation if we were satisfied that the change would not have a significant impact on the environment or health.<br><br>The Emission Limit Values (ELVs) set in the permit are in line with BAT AELs and/or IED Chapter IV for new plant, they would not necessarily change if additional waste types were permitted. |
| The facility and its operation has been designed around baled and loose RDF being the only fuel proposed to be used at the plant. If other waste is brought to the site, this would change the potential for nuisances occurring including noise, odour, pests etc. and a larger area for storage of waste might be needed. | Other waste cannot be brought onto site without a permit variation. Any change to risk, including emissions to air, noise, odour and pests, would require assessment as part of the determination of a future permit variation to change the permitted waste types. Proposed changes to site layout may also form part of the assessment, for example in relation to a revised Fire Prevention Plan and waste storage arrangements. |
| Whilst movement of traffic to and from the facility is outside of the EAs permit conditions and would normally be an issue for the planning authority to consider, if less compact waste is brought to site than originally planned, this will result in increased numbers of vehicles bringing waste to the facility and could have a further knock-on impact on local air quality (emissions from increased traffic). | As stated, the movement of traffic to and from the Installation is outside of our remit but will normally be an issue for the planning authority to consider. Our consideration is whether the emissions from traffic could affect the prevailing pollutant background levels which could be a consideration where there are established high background concentrations contributing to poor air quality. We have considered the application made to us and do not consider traffic is a consideration for the waste type applied for. |
| Dorset Councils Environmental Health department would like to be made aware of abnormal operations / emissions that could | Schedule 5 notifications will be available to Dorset Council and members of the public via the Public Register. |

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| have a health impact, or give rise to complaints, from local residents. | |
| We would like to suggest a liaison group between the operators, EA, and Local Authority. | The Environment Agency would be open to attending a liaison group where resources allow. This cannot be a requirement of the Environmental Permit. |
| Where there are complaints of nuisances (within the scope of the Environmental Protection Act 1990 s79(1) a to h) from local residents , is there a mechanism for these issues to be reported to the Environment Agency, rather than the Local Authority? Page 181 of the decision document states "the EA will assess the complaint and investigate it as appropriate." | The statement quoted refers to any complaints made to us about the operation of the plant. We cannot stop complaints being made directly to the Local Authority instead of the Environment Agency. However, if the Local Authority receive reports which should be directed to the Environment Agency they can send them to us. |

b) Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

Representations were received from the Member of Parliament for or South Dorset Portland Town Council, Portland Town Council Labour Group, local councillors, and Weymouth Town Council. Many of the issues raised were the same as those considered above and in section A of this Annex. Only those issues additional to those already considered are listed below:

| Brief summary of issues raised: | Summary of action taken / how this has been covered |
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| **Comments about air emissions and air risk assessment** | |
| Concern that the computer modelling doesn't properly reflect the unique geography of the location.<br>Concern that the models were developed by non-local programmers | We are satisfied that there will not be a significant impact in air quality. We audited the Applicant's dispersion modelling. As part of the audit, we checked that the modelling parameters, impacts from topography, and weather data used by the Applicant were appropriate for the location. We are satisfied that there were.<br><br>We tested sensitivity using air dispersion modelling software ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties. These are commonly used computer models for regulatory for dispersion modelling. We are satisfied the modelling adequately takes the site setting into account and that the Applicant's conclusions can be used for permit determination.<br><br>Further information is in section 5 of this decision document. |

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| Did the Environment Agency visit the site to undertake their own air quality monitoring | We consider that this is not required. The Applicant considered existing background levels in their dispersion modelling. We do not undertake our own background air quality monitoring as part of a permit determination. However, as part of our audit, we checked the background levels and are satisfied that they are appropriate, and that the impacts from the Installation are not significant. |
| Concerns about lack of dispersion and the resulting impacts on receptors, specifically in the vicinity of the Vern Common (HMP Verne and the Verne Common Estate) | The dispersion modelling tested sensitivity using five years of meteorological data observed at the Isle of Portland meteorological station recorded between 2014 and 2018 and 2 years of meteorological data at an alternative location - Portland Harbour between 2017-2018.<br><br>We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. We are satisfied these will reflect local patterns and variation in meteorological conditions in the dispersion of pollutants.<br><br>HMP Verne and the Verne Common Estate were included within the modelling domain, we are satisfied that they have been fully considered in the modelling and are satisfied that there will not be a significant impact. |
| Concern about the impact of sea mist on emissions to air | We are satisfied that there will not be a significant impact on air quality or health when taking into account local weather conditions and the costal location. Plume depletion and chemical transformations were not modelled by the Applicant, which represents a worst-case scenario for the assessed pollutants. We are satisfied that their approach is conservative. |
| Concern about potential impacts on human health and the environment from emissions during other than normal operating conditions (OTNOC) and how frequently these operating conditions may occur | We do not consider that OTNOC poses a risk to health and the environment. The permit limits periods of abnormal operation to 4 hours individual occurrence and 60 hours per year. We assessed the impact based on these maximum periods (see section 5.5) and are satisfied that there will not be a significant impact. During OTNOC emissions will still need to comply with relevant IED limits which act as a backstop. Further details are in section 5.5.<br>It is in the operator's interests to keep any periods of OTNOC to a minimum. They will also be covered by an approved OTNOC management plan required through pre-operational condition PO1. |
| Concern that if waste is imported from abroad, it will contain more plastic and will have a greater impact on air quality | The Permit does not control where waste originates from, as this falls outside the scope of the permit determination. However, the permit conditions, including those limiting the type and |

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| | make-up of waste apply to all waste accepted at the site irrespective of the origin.<br>Waste types and quantities are specified in Table S2.2 of the permit. Only one EWC code is included: 19 12 10 combustible waste (refuse derived fuel (RDF)). The Operator will have waste pre-acceptance and waste acceptance procedures to ensure that only waste authorised by the Permit is received and burned. Other measures such as bunker management, combustion control and emission limits will provide sufficient control to ensure that any plastic in the waste will not cause significant pollution or harm. |
| Concern about the use of the statement: “the installation will not cause significant pollution at the site” and whether in assessing significance adequate consideration was given to the specific locality. | 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’, this involves screening for potential significant impacts. A full description of the methodology we use to assess emissions for air is given in Section 5.1 of this document. We consider that this approach is sufficiently conservative to ensure it is protective of human health and the environment. This assessment considers all relevant local receptors. |
| **Comments about health impacts** | |
| Concern about congenital deformities | We are satisfied that there will not be a significant impact on health including unborn children.<br><br>The Environment Agency takes advice from UKHSA on the health implications of incinerators generally and specifically on each application for a permit. UKHSA’s position remains that modern, well run municipal waste incinerators are not a significant risk to public health.<br><br>Further details of the findings are in section 5.3 of this decision document.<br>. |
| Concern about the impact of nickel and arsenic on local residents. | We have considered emissions of metals, including nickel and arsenic in our assessment. We are satisfied that impacts will not be significant. The impact from metal emissions is considered further in section 5.2. |
| Vinti et al (2021) states “the most consistent evidence was on the adverse birth and neonatal outcomes, with studies identifying increased risks associated with living near all three types of MSW disposal sites” | We consulted with UKHSA for their view on this paper. The UKHSA confirmed that Vinti et al (2021) is a review paper, meaning the primary literature has been reviewed rather than new studies being undertaken. In considering its view on municipal waste incinerators, UKHSA considers the available weight of evidence from primary literature directly, rather than from reviews, as this allows appropriate consideration of the relevance of the findings from each study to incinerators currently operating in the UK. |

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| | The UKHSA's opinion is that modern, well run and regulated municipal waste incinerators are not a significant risk to public health. While it is not possible to rule out adverse health effects from these incinerators completely, any potential effect for people living close by is likely to be very small. |
| **Comments about impacts at ecological sites** | |
| Concern that during determination there have been changes to national policies in nature recovery which have not been taken into consideration | We believe this is referring to the Environment Act 2021, which establishes legal requirements and mechanisms to enable nature recovery. These include Local Nature Recovery Strategies, Species Conservation Strategies and Protected Site Strategies. We are satisfied that none of these are relevant to this determination:<br><br>• Each county in England is required to develop a local nature recovery strategy, but there is not yet a strategy published for Dorset.<br><br>• Section 109 of the Environment Act 2021 outlines Species Conservation Strategies. Natural England has confirmed that there are currently no relevant strategies for species in the vicinity of the incinerator.<br><br>• As described in Section 7.2.11 of this Decision Document, Section 110(10) of the Environment Act 2021 requires that we must have regard to protected sites strategies published by Natural England. Natural England has stated that, at present, there are only a small number of pilot projects in England, none of which are located on Portland or in the surrounding area.<br><br>We are therefore satisfied that there are no additional nature recovery considerations relevant to our assessment. |
| Concern about the bioaccumulation of metals in the marine environment impacting fish and shellfish | We have carried out an assessment on designated habitats, which includes protected species. Our view is that no further assessment on the marine environment is required.<br><br>The only discharge to surface water permitted is discharge of uncontaminated runoff, via retention interceptor and swales, to Balaclava Bay (east) and/or Portland Harbour. Due to the nature of this discharge, we do not consider that it poses a risk of bioaccumulation.<br><br>The open sea is not sensitive to aerial emissions or deposition from combustion processes. Therefore, we do not consider that emissions to air from the installation will significantly impact the marine ecosystem. |
| **Comments about odour emission impacts** | |

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| Concerns about odour in the Port from the incinerator | We are satisfied that the proposed control measures will prevent any significant emissions of odour from the site. Section 6.5.4 has further details.<br><br>Odour condition 3.4.2 will require the implementation of an odour management plan if deemed necessary by the Environment Agency. If required, this could ultimately require changes to be made on site if it is deemed that improvements are necessary. |
| **Comments about waste streams** | |
| Concern that the RDF waste code description is not clearly defined and therefore open to abuse meaning recyclable material can be burnt | Refuse Derived Fuel (RDF) is defined as a material that is produced from waste, that has undergone some sort of treatment process and is intended for use as a fuel. The Permit includes only one European Waste Catalogue (EWC) code: 19 12 10 for combustible waste (refuse derived fuel). EWC codes under 19 12 are limited to waste from the mechanical treatment of waste only. We consider this code sufficiently precise to prevent the inappropriate designation of materials as RDF.<br><br>Furthermore, the Permit does not allow the incineration of wastes that have been separately collected for recycling unless they are subsequently found to be unsuitable for recovery through recycling. It is also important to emphasise that separately collected fractions cannot be designated as RDF and accepted at the site without undergoing a treatment stage, as the RDF code (19 12 10) is specifically limited to wastes that have undergone mechanical treatment.<br><br>We are satisfied that RDF can be incinerated while complying with the Permit emission limits. Additionally, the waste acceptance criteria will ensure that only permitted waste is accepted and suitable for incineration. |
| **Comments about other issues** | |
| Request that the Environment Agency delay our final decision on whether to grant this permit to await the publication of the report into waste incineration plant capacity requirements. | The focus of the report will be incineration capacity and that is not a material factor in our decision making, it would however be more relevant to the wate planning authorities. |
| Request that the Environment Agency delay our final decision on whether to grant this permit to allow the new Government to confirm policies on waste incineration | At this time, mass burn incineration is permissible under the EPR and can be considered BAT, subject to the appropriate assessments being made. Wider issues of waste policy are outside our remit. We have a statutory duty to determine the application. Therefore, we do not consider deferring our determination on this basis is justified.<br><br>The Government's announcement (of 30th December 2024) on the new requirements which |

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| | energy from waste (EfW) plants will need to meet to get planning permission does not alter our ability to issue permits, nor the robust approach which we already have in place for evaluating permit applications for EfW plants. This is only for the planning process and does not affect our determination of Environmental Permits. |
| Request that the Environment Agency delays our final decision until the Judicial Review into planning permission has been completed. | Planning and Environmental Permitting are separate processes. We do not consider that the outcome of the Judicial Review into the planning permission would impact our approach or conclusions. We cannot say when the current proceedings will finally be determined. We do not consider deferring our determination on this basis is justified. Nor will whether or not we grant a permit affect the outcome of the court proceedings which will be determined on their own merits.<br><br>We are responsible for assessing environmental permit applications for new incinerators to operate in England, and we have a duty to assess any application we receive against the requirements of the Environmental Permitting Regulations (EPR) 2016 and all other relevant requirements. If it meets those requirements, we must issue a permit. |
| Detailed expert reports have been submitted and there is no reference made of their qualifications or concerns. | The reports were considered in detail during our assessment of consultations responses received during the first consultation in 2021, although they may not be referred to by name, key points from these reports are included in the relevant sections of section A of this Annex.<br>For incineration applications we often receive a very large number of consultation responses, some of which are very detailed. It is not possible or necessary to include word for word every comment that we receive. All consultation comments are considered, and the decision document includes a brief summary of the key issues raised from the consultation. |
| Concern that financial implications have been used to make decisions above potential impacts on people and the environment | Cost is only one factor considered within a BAT assessments. We have assessed the techniques proposed within the application and agree that they meet BAT for the installation. This is discussed in detail in Section 6 of this decision document. |
| Concern that the Environment Agency's assessment was undertaken remotely | The Environment Agency is aware of the local area, and we have enough information to make our decision on this application. |
| Concern that the development isn't sustainable and doesn't fit the Environment Agency's "create better places for people and wildlife and support sustainable development" | We are required to contribute towards achieving sustainable development, as considered appropriate by Ministers and set out in guidance issued to us (see section 7.2.1 of this document). We are satisfied that this Installation will not cause significant pollution or harm and that it will |

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| | provide a high level of protection for the environment as a whole. |
| Concern that the incinerator will mean the UNESCO World Heritage Status of the Jurassic Coast is removed. | Designation of UNESCO World Heritage Status is not within the remit of the Environment Agency The proposed Portland ERF is outside of the boundary of the World Heritage Site. However, we will only issue a permit where we are satisfied with the environmental impacts of a proposed activity whether or not land has any particular designation. We do not consider that emissions from the installation will have an impact on this area. Visual impacts are not within our remit and is covered by the planning process. |
| Concern that the incinerator goes against EA2025 | In keeping with our principles, we only approve applications for Environmental Permits where we are satisfied that sites are operated in an environmentally acceptable manner. Our assessments show levels of emissions will not have significant impact on human health or the environment. |
| Little weight is given to the deprivation levels of those living near the proposed site. Including underlying health conditions. | The standards that we have used to assess against are set to protect all members of the public.<br><br>Decisions over land use, including the location of the incinerator, are matters for the planning system. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. The environmental impact is assessed as part of the determination process and has been reported upon in the main body of this document. |
| Concern that our assessment does not correctly use the Imperial College (Parkes et al., 2020) study. Specifically, that the precautionary principle should be applied. | We consulted with the UKHSA on the concerns raised here. The UKHSA agrees with the Environment Agency that it is not appropriate to extrapolate from the Imperial College study in the manner done within the consultation response. It should also be noted that a number of papers were published from the Imperial College study, not only the Parkes et al (2020) paper referenced in the response. UKHSA's view on the outcomes of the Imperial College study were published at the time (as PHE), and it was noted that "a causal association between increased risk of congenital anomalies for children born close to municipal waste incinerators has not been established" and the risk assessment remained that modern, well run and regulated municipal waste incinerators are not a significant risk to public health.<br><br>The Health Protection Agency (as it was called then) stated in its response to the British Society for Ecological Medicine Report, "The Health Effects of Waste Incinerators" that "as there is a |

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| | body of scientific evidence strongly indicating that contemporary waste management practices, including incineration, have at most a minor effect on human health and the environment, there are no grounds for adopting the 'precautionary principle' to restrict the introduction of new incinerators". We agree that the precautionary principle is not applicable to this determination. |
| Concern expressed that paper by Tait et al (2020) shows a link between incinerator emissions and adverse health impact | The Installation will be modern; subject to stringent limits set in the IED and BAT Conclusions. We will ensure through regulation that it is well run.<br><br>We consulted with UKHSA for their view on this paper. The UKHSA confirmed that Tait et al (2020) is a review paper, meaning the primary literature has been reviewed rather than new studies being undertaken. In considering its view on municipal waste incinerators, UKHSA considers the available weight of evidence from primary literature directly, rather than from reviews, as this allows appropriate consideration of the relevance of the findings from each study to incinerators currently operating in the UK. |
| **Comments about the Applicant** | |
| Concern about operator competency, including that the applicants do not have relevant experience. | We consider that the operator has provided adequate evidence to show that they will be competent and the legal operator of the regulated facility. See additional information in section 4.3 of this decision document.<br><br>It is commonplace for a site owner to appoint suitably qualified contractors to undertake activities on their behalf. They can continue to be the Operator and hold the permit where there is a contract, provided adequate contractual controls are in place which means that they retain control and responsibility over the operations. |
| Concern that the installation will be run under an Operation and Maintenance Contract | |
| Concern the Applicant is placing profit above the natural environment | We are satisfied that the installation will not have a significant effect on health.<br><br>The Applicant will be required to comply with the conditions of the Permit. Any profit made (or not made) by the Applicant will not be a factor in how we assess whether they have complied with the Permit. |
| **Comments about the consultation** | |
| An incorrect link was included in Briefing Note 12, meaning the public have not been able to respond. | Unfortunately, an incorrect link was inadvertently included in Briefing Note 12. Briefing Note 12 also included other ways to submit comments (postal address and email). It also linked to Citizen Space where it is easy to search for the relevant consultation.<br>However, we accept that the incorrect link could have meant that some people who wanted to submit a response may not have been able to do |

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| | so. We therefore took the decision to reopen the final consultation on our draft decision this ran from 20/09/2024 - 20/10/2024. |
| Concern that the consultation period was too short | The permit application was duly made in May 2021. We consulted on the application from June – September 2021, an extended 15-week period. In addition, the minded-to issue consultation was an opportunity for the public to comment on our draft decision. We originally consulted on our draft decision from 12 July to 11 August 2024. However, we received correspondence that one of the links given in the Briefing Note wasn't working correctly. We therefore took the decision to reopen the final consultation on our draft decision. The second consultation ran from 20 September to 20 October. Therefore, in total, we have consulted on this application for 23 weeks as well as continuing to consider representations received during our determination. We consider that our consultation has been extensive and satisfies all legal requirements. |
| Concern that the local community are against the proposal | We have considered the issues raised from the consultation responses that we received as set out in this decision document. However, the number of responses and strength of opposition is not something we can take account of in this permit determination. |

## c) Representations from Community and Other Organisations

Representations were received from Stop Portland Waste Incinerator, The Portland Association, West Dorset CPRE. Many of the issues raised were the same as those considered above and in section A of this Annex. Only those issues additional to those already considered are listed below:

| Brief summary of issues raised: | Summary of action taken / how this has been covered |
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| **Comments about air emissions and air risk assessment** | |
| Concerns over the emission confidence intervals (CIs) given in Permit Condition 3.2.2 | We established the CIs in accordance with the revised draft of EN 14884. This draft specifies that, unless otherwise regulated, the maximum allowable uncertainty is 40% of the daily emission limit value (ELV). The CIs in condition 3.2.2 of the permit are derived from Part 6 of Annex VI of the Industrial Emissions Directive, along with other monitoring standards.<br>CIs are used for regulated sites in reporting emission concentrations to the regulator (monitoring). They are a measure of monitoring uncertainty, and where applied, remove any reasonable doubt (required for instances where enforcement action might be considered). We are therefore satisfied that Cis are appropriate. |

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| Where will the Anemometer referred to in Table S3.4 be positioned? | It is up to the Operator to position it in a suitable location. This will be agreed in writing by the Environment Agency. |
| Concern that two receptor locations have not been included in the assessment:<br><br>• house at 4 The Verne; and<br>• homes at Amelia Close | The Applicant's modelling predicted peak ground level exposure to pollutants in ambient air. Our assessment, detailed in Section 5.2.1 of this Decision Document, conservatively assumed that the maximum concentrations occur at the location of receptors. As the receptors referenced in the concerns are within the modelled domain, we are satisfied that the air quality assessment is protective of these receptors and that no further modelling is necessary. We are also satisfied that the human health risk assessment, detailed in Section 5.3, is protective of all receptors within the modelled domain. |
| Concern that people will be living directly above the top of the stack | We audited the Applicant's modelling, this included checking any effects from topography and the location (including elevation) of receptors in relation to the installation. We are satisfied with the way it was carried out. We tested sensitivity using ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties.<br><br>The impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling. This is considered further in Section 5.2.4 of this decision document.<br>Our view as set out in this decision document (section 5.3) is that emissions from the Installation will not have a significant effect on health at any location. |
| Concern that no impact assessment, considering land and sea, has been undertaken to consider impacts beyond the site boundary from the cumulative impact of traffic, shipping and incinerator emissions. | The response refers to the "Environmental permitting: Core guidance For the Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No 1154), section 2.3. Which says the EPR regime extends to England and Wales only. It also covers the adjacent sea as far as the seaward boundary of the territorial sea."<br><br>We are satisfied that our assessment considers potential impacts of emissions from the installation beyond the site boundary on both land and sea. The air quality assessment also considered existing background pollution levels which includes emissions from traffic and shipping. Movement of traffic (and shipping) to and from the Installation does not form part of the Environmental Permit decision making process. Our consideration is whether the emissions from traffic and shipping to and from the installation could affect the prevailing pollutant background levels which could be a consideration where there are established high background |

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| | concentrations contributing to poor air quality. In this case the small increase in pollutants from traffic and/or shipping would not affect the background levels to the point where it would affect the conclusions of the air quality assessment. |
| Concern that the background is already exceeding the short-term PAH Environmental Standard (ES) and therefore additional emissions should not be added. | As explained in Section 5.2.2 of this Decision Document, the PEC exceeds 100% of the ES for PAH. For these emissions, we are satisfied that the Applicant has demonstrated that the process contribution to the PEC is negligible. We have assessed this as part of our detailed audit of the Applicant's modelling assessment, we agree with the Applicant's conclusions in this respect taking modelling uncertainties into account. We have carefully scrutinised the Applicant's proposals to ensure that they are applying the Best Available Techniques to prevent and minimise emissions of these substances. This is reported in Section 6 of this document. |
| Concern that the cliff height given in section 4.1.2 of this Decision Document is inaccurate and that the assessments are therefore not based on correct data. | Section 4.1.2 of this Decision Document has been updated to provide further clarification.<br>Reference to the height of the cliff related to the site description within the supporting information '*Cliffs supporting grassland, scrub and woodland habitats lie to the southwest of the embankment and rise steeply to approximately 125 m above ordnance datum (AOD)'.* We consider that this statement is correct, as it is not referring to the overall height of the cliff (which is approximately 147m AOD at its highest point), but to the location of the grassland, scrub and woodland habitats in relation to the cliff which extends to 120-130m AOD.<br>We have reviewed the ADMS modelling, and we are satisfied that the modelling used the correct height for receptors on an AOD basis. |
| Concern about our assessment of emissions from the Emergency Diesel Generator (EDG) as operation of the EDG won't necessarily coincide with the worst weather conditions | We considered the likelihood of EDG operation coinciding with the worst weather conditions as this provided a worst-case impact scenario for our assessment. We are satisfied that this is protective of other meteorological conditions.<br>Further details of our assessment of emissions from the EDG are given in Section 5.6 of this Decision Document. |
| Concern about how emissions will be monitored during periods of abnormal operation | It is expected that CEMS will generally remain operational during periods of abnormal operation. However, Condition 2.3.12 of the permit stipulates that the abnormal operating conditions apply in the event of a technically unavoidable stoppage, disturbance, or failure of the continuous emission monitors. This would only occur in the unlikely event that both the backup and primary CEMS fail. During such an event, waste charging can only continue if monitoring of particulate matter, total organic carbon, and |

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| | carbon monoxide is still possible (as per Permit Condition 2.3.9(f)). If CEMS is not available, this monitoring must be carried out using agreed alternative techniques. If it is not possible to monitor particulate matter, total organic carbon, and carbon monoxide, the waste feed must be halted. |
| Concern that it is not possible to model the site location due to the topography and terrain. | We do not agree that it is not possible to model air dispersion in this location. We audited the Applicant's modelling, this included checking any effects from topography and terrain. We are satisfied with the way it was carried out. We tested sensitivity using ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties.<br><br>The impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling. This is considered further in Section 5.2.4 of this decision document. We are satisfied the modelling accurately reflects potential impacts. |
| Concern that describing terrain features as 1 in 10 is not accurate. | As stated in Section 5.2.4 of this decision document we recognise that inland terrain features are above 1 in 10. The impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling. This is considered further in Section 5.2.4 of this decision document. |
| The Plume Plotter website shows that the incinerator will cause elevated impacts around the area. | Plume Plotter appears to be a tool which uses air quality modelling software to predict the ground level concentrations of nitrogen oxides and other pollutants that may arise from the incinerator based on a number of factors. We do not use Plume Plotter in our assessments. Instead, we tested sensitivity using ADMS and alternative modelling software AERMOD and CALPUFF. We have audited the dispersion modelling submitted with this Application and we are satisfied that there will not be any significant impacts. We are satisfied that the modelling software we have used is appropriate and gives us sufficient confidence in our decision. |
| Concern that temperature inversions also occur during the day and that this hasn't been considered in the modelling. | Temperature inversions develop when the air temperature increases with altitude, rather than decreasing as it typically does. They typically occur on clear nights with calm winds, where they develop during the night and typically break up a few hours after sunrise. They can also occur in other situations, such as coastal areas where cooler air from the sea can be trapped under a layer of warmer air from the land. The Applicant's ADMS model considered the impact under stable condition type temperature inversions. |

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| | We checked the weather data used by the Applicant when we audited the Applicant's dispersion modelling. This included checking weather data from other weather stations around the site and using our own weather data. We tested sensitivity to a total of twelve years of meteorological data from varying locations, data sources, decades and observed vs. modelled data. We consider these capture local patterns and variation in meteorological conditions in the dispersion of pollutants. We are satisfied that the proposal is unlikely to result in a significant impact on air quality. |
| Concern that cooling the flue gas to reduce the risk of dioxin reformation will result in poor dispersion. | Reducing the flue gas temperature quickly through the critical temperature range to minimise the risk of dioxin reformation is BAT. The modelling takes account of the release temperature. We have audited the dispersion modelling submitted with this Application and we are satisfied that there will not be any significant impacts. |
| The exit velocity has been stated incorrectly in the Decision Document. | The Decision Document gave the incorrect figure of 17.13 m/s. This figure was included in the Application documents; however, it was corrected in response to a Schedule 5 notice. We have now updated the Decision Document to state the correct figure of 20 m/s. The modelling, and our subsequent assessment, were based on 20 m/s, therefore the modelling and our conclusions in respect of it remain valid. |
| Concern that the location of the incinerator caused too much uncertainty for air emission impacts and that this has not been considered by the Environment Agency | The uncertainties associated with dispersion models are accounted for within our decision.<br>We took uncertainty into account when we audited the Applicant's dispersion modelling.<br><br>Following our initial audit of the Applicant's dispersion modelling our results indicated potential exceedances for observed meteorological data with relatively more frequent north easterly winds in AERMOD. As a result, we concluded we could not rule out potential exceedances and requested the Applicant to provide further evidence, including sensitivity to alternative modelling software and evaluation of the uncertainty to further evidence their conclusions. In response to our Schedule 5 notice, the Applicant presented sensitivity analysis to various input parameters to evaluate uncertainty. We are satisfied with this analysis and concluded that the predicted exceedances based on the AERMOD model are likely to be unrealistic worst-cases. Based on the ADMS model, uncertainty and the evidence presented by the Applicant, contributions from the incinerator are unlikely to exceed any environmental standard at sensitive receptors. |

| Comments about health impacts | |
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| Concern that there has been no updated survey of the cumulative impact from waste incinerators since the 2007 UK Soil and Herbage Pollution Survey. | We consider that the UK Soil and Herbage Pollution Survey (UKSHS) remains relevant. It was designed to establish baseline levels of pollutants in soil and herbage across the UK. These baselines are crucial for monitoring changes over time, assessing the effectiveness of pollution control measures, and informing environmental policies. |
| Concern that the human health risk assessment is not sufficient to give a lifetime assessment of the impacts from the waste incinerator. | We are satisfied that the assessment is appropriate for considering lifetime exposure risks. We audited the assessment and are satisfied that health impacts are likely to be insignificant compared to the tolerable daily intake (TDI). As set out in section 5.3, the human health risk assessment makes an assessment against the TDI. The TDI is the amount of a substance that can be ingested daily over a lifetime without appreciable health risk. |
| Concern about the impact on human health from particulate emissions, including very fine particulate matter such as PM2.5 and smaller. | Impacts of PM2.5 were shown to be insignificant when assuming the worst case that particulate matter is emitted continually at the ELV and that all of the particulate emissions are PM2.5. We are satisfied that there will not be a significant impact from particulates. These issues are covered in sections 5.2 and 5.3 of this decision document. |
| Concern that the papers published by SAHSU, referenced in section 5.3 of this Decision Document does not consider potential health impacts on people with preexisting health conditions and lifelong exposure. | The SAHSU (UK Small Area Health Statistics Unit) papers referred to specifically look at any potential reproductive and infant health risks from municipal waste incineration (MWIs) – this is stated in Section 5.3 of this Decision Document.<br><br>Section 5.3 also explains that there is a significant amount of literature on whether there are links between operation of incineration plants and effects on health. We have included information on one of the most recent studies that was commissioned by the UK Health Security Agency (UKHSA), previously Public Health England (PHE). The overall weight of the evidence is that there is not a significant impact on human health.<br><br>The standards that we have used to assess against are set to protect all members of the public. We are satisfied that there will not be a significant impact on health due to the Installation.<br><br>Section 5.3 of this decision document has further details. |
| Concern that the mental health impacts of the incinerator have not been addressed by the Environment Agency in the determination | EPR is concerned with the impact of emissions from the Installation and based on our assessment those emissions should have no significant impact on human health or give rise to any objective cause for concern. |
| **Comments about impacts at ecological sites** | |

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| Concern that the in-combination assessment doesn't consider emissions from traffic. | The air quality assessment considered existing background pollution levels which includes emissions from traffic. Movement of traffic to and from the Installation is a relevant consideration for the grant of planning permission but does not form part of the Environmental Permit decision making process except where there are established high background concentrations contributing to poor air quality. Then the increased level of traffic may be significant in these limited circumstances. In this case the small increase in pollutants from traffic would not affect the background levels to the point where it would affect the conclusions of the air quality assessment.<br><br>As part of our assessment, we considered in combination impacts with other sites which were not likely to have been captured in the background (for example where they were permitted after the date the background data was obtained). This is described in section 5.4 of this decision document. We are satisfied that there will not be a significant likely effect. We consulted with Natural England on our assessment. |
| **Comments about noise emission impacts** | |
| The Permit should specify noise levels in the same way emission limits are set for air emissions rather than relying on "as perceived by an authorised officer of the Environment Agency" | Assessment of noise impact can involve an element of subjectivity to inform the overall assessment. We therefore generally use Permit conditions 3.5.1 and 3.5.2 to ensure that noise is adequately controlled. We only set numerical limits for noise in exceptional circumstances and do not think it is necessary to set a numerical limit in this case. This approach also offers us more flexibility and a tailored response to compliance.<br><br>Typically, where noise pollution is considered to be perceived by an Environment Agency officer at nearby receptors, the scale of the pollution will be evidenced following the method outlined in BS 4142:2014+A1:2019 and Environment Agency guidance (Noise and vibration management: environmental permits - GOV.UK (www.gov.uk), Method implementation document (MID) for BS 4142 - GOV.UK (www.gov.uk)). |
| Concern that the noise impact assessment did not consider impacts at 4 The Verne | We are satisfied that other residential receptors included in the noise impact assessment are protective of this receptor. Noise impacts have been considered as discussed in section 6.5.5 of this decision document. We are satisfied that there will not be a significant impact and that permit conditions will ensure that this is the case. |
| Concern that the type of noise generated by the incinerator will be different in nature to that already produced by other activities at the port | We have performed check modelling with consideration for tonality, impulsivity and intermittency and are satisfied that the NIA is representative. We are satisfied that the monitoring undertaken is reflective of background |

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| | noise levels, this would include noise produced by current port activities.<br>We have included an improvement condition (IC12) to validate the noise assessment during normal operation.<br>Permit condition 3.5.2 allows a noise and vibration management plan to be obtained for approval where it is identified necessary. |
| The Decision Document does not specify the maximum sound level produced by each source or the combined noise level | Noise impacts have been considered as discussed in section 6.5.5 of this decision document. We are satisfied that there will not be a significant impact and that permit conditions will ensure that this is the case. The NIA modelled predicted specific sound levels from the proposed facility using data from permitted facilities elsewhere. Section 6.5.5 gives a summary of our assessment and our conclusions; we consider that it is not necessary for us to repeat all of the data presented in the NIA in the Decision Document. |
| Concern that the proposed mitigation will not be effective | We have audited the noise assessment, including an assessment of the proposed noise mitigation measures, and performed check modelling. We consider that the mitigation measures proposed by the Applicant will be effective and should be incorporated into the final design. We have set improvement condition (IC12) requiring the Applicant to confirm and implement the proposed mitigation measures to minimise the noise impacts identified from the stack, boiler room and turbine hall.<br><br>The improvement condition (IC12) requires the Operator to undertake a further Noise Impact Assessment during commissioning to validate the post mitigation noise impacts. In the unlikely event the assessment shows noise is an issue further measures can be required. |
| Concern that Improvement condition IC12 does not state maximum sound level thresholds | IC12 does not give sound levels, instead it states the noise impact assessment must be undertaken in accordance with "BS 4142:2014+A1:2019 Method for Rating and Assessing Industrial and Commercial Sound", and associated Environment Agency guidance. BS 4142:2014 compares the predicted plant rating noise levels with the established background levels. |
| Concern that there is no mechanism in the permit to stop the Operator from using commercial reasons to justify that reducing noise levels is not practicable | The Application is determined under EPR. EPR requires that emissions are prevented or where that is not practicable reduced.<br><br>Permit conditions 3.5.1 and 3.5.2 enables us to take action if noise pollution is caused. If significant adverse impacts are identified, then further mitigation measures will be required to be implemented by the operator to reduce the |

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| | impact. Where adverse impacts remain, then ultimately the permit could be revoked. |
| Concerns were expressed that the Applicant changed elements of the planning application during the planning hearing and that the permit will need to be varied straight away. | The planning application and this environmental permitting application are separate processes. We have assessed the application based on information that was submitted in the application. The operator is required to comply with any permit and any planning permission it obtains where any changes are required, they will need to be subject to separate application for a variation (for either planning or permitting). It is the Operator's responsibility to comply with all relevant statutory regimes and to ensure that any necessary authorisations are not in conflict.<br><br>If we receive an application to vary the permit, we will assess such an application and would only grant a variation if we were satisfied that it would not cause a significant impact. |
| **Comments about waste streams** | |
| Concern that incineration will impact recycling rates, with waste being burnt rather than being recycled | Recycling initiatives are a matter for the local authority.<br><br>We do not agree that the granting of this permit disincentivises reuse and recycling it is for dealing with any residual waste after those activities have happened. |
| **Comments about other issues** | |
| Concern about the social impact the incinerator would cause | We have to assess the environmental impacts of what is proposed and whether an activity can be authorised under EPR. Based on our assessment those emissions should have no significant impact on human health or be a cause for concern. So we do not consider the emissions should have any social impact. |
| Concern that the incinerator does not fit the "right waste, right place" slogan included on Environment Agency Briefing Notes | At this time, mass burn incineration is permissible under the EPR and can be considered BAT, subject to the appropriate assessments being made. Location and development plans are primarily a land use planning issue. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. We will only issue a permit where we are satisfied with the environmental impacts of a proposed activity. |
| What will happen if the emission limits set in Table S3.1 are exceeded. | We consider the operator will comply with the permit conditions including the ELVs.<br><br>If any continuous ELV is breached at an Environment Agency permitted incinerator, the Operator is required to move into abnormal operations for a maximum of 4 hours, whereby abnormal operation ELVs apply. |

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| | If abnormal operation ELVs (Table S3.1a) are exceeded, or emissions are not below the normal operations ELVs (Table S3.1) within 4 hours, the operator must cease waste charging and shut down the incinerator.<br><br>In addition, we will deal with any breaches in accordance with our enforcement and prosecution policies. |
| All plans and management systems should be shared with Dorset Council Environmental Health and made available to the public on request. | Approved plans, management systems and monitoring data will be available to Dorset Council and members of the public via the Public Register. |
| Concern about what would happen if the operator is unable to demonstrate negative pressure and no improvements are available under Improvement Condition IC8 | The method proposed by the Applicant of creating negative pressure by extracting combustion air from the reception area is used at most municipal waste incinerators and is tried and effective. Negative pressure will be generated by the furnace pulling in air from the reception building. So, as long as the plant is burning waste negative pressure is likely to be maintained. We have set an improvement condition for tests to be carried out to ensure the system is working correctly. If it is found to not be working correctly the Operator must propose and implement improvements to the system to ensure it is effective. |
| Will the EMS include all the triggers for Automatic Shut-down events? | The EMS will cover the operation of the plant, we expect this to include procedures and triggers for automatic shut-down. The Permit also includes conditions which cover triggers requiring the shutdown of the plant. |
| Concerns about the requirements of pre-operational condition PO7:<br>• What is the information used for<br>• The survey should be repeated periodically | The information required by PO7 is to ensure the requirements of Article 22(2) of the IED are met to establish a baseline condition for the site before it becomes operational. Permit Condition 3.3.3 requires periodic monitoring to be undertaken: for groundwater once every 5 years and for soil once every 10 years. |
| What will be the required remediation if pollution is evident at the end of the plants life and what is the mechanism to ensure remediation is carried out? | The permit will remain in force and the operator liable for it unless and until it is surrendered. To surrender a permit the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. If contamination is present, the operator will be required to remediate, ensuring the land is returned to a satisfactory state before the permit can be surrendered. The type of remediation required will depend on the type and level of pollution identified. |
| Concern that the Marine Management Organisation were not consulted. | We would only consult with the Marine Management Organisation on an Environmental |

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| | Permit application where the following criteria are met:<br>• Proposed activities are located on land in an estuary or on the coast, with elements that fall below Mean High Water Spring tides; and<br>• require multiple consents including both a marine licence and a planning permission<br><br>It was not necessary to consult with the Marine Management Organisation in this case. We have consulted in accordance with our published guidelines. |
| Concern that the plant will operate up to 8,760 hours per year and that this will not allow time for maintenance shut downs. | 8,000 hours is the predicted operation in a particular year; however, this is an approximation and it is possible that the plant may operate above these hours. The Facility will process approximately 183,000 tonnes per annum (nominal design capacity of 22.8 tph, assuming 8,000 hours availability). The maximum capacity is 202,000 (i.e. if operating without planned shutdown and maintenance etc) and impact assessments have been based at these rates to assume worst case scenario. In practice the plant would not operate for the maximum 8,760 hours per year as there would need to be times of planned shutdown and maintenance. |
| Concern that the proposed building has an unconventional layout and bunker design | We are satisfied that the layout of the site and bunker will not inhibit compliance with the conditions of the permit. |
| Concern that the Environment Agency would be granting a permit for a site designed to accommodate a 'full cargo ship delivery' without the necessary permissions being in place for the use of ships to transport waste. | As previously stated in this Decision Document, the transport of waste does not form part of this Permit up to the point it enters the installation. Therefore, the use of ships to transport waste is outside of the remit for this Permit. It is for the port/ harbour authority to ensure that port operations can operate in a manner that avoids marine pollution. Depending on the nature of any future proposals, other permits/ permissions may also be required.<br><br>Our decision to grant this permit is not dependant on these other permissions being in place. We have assessed the proposed storage capacity of the site and are satisfied that the amount of waste proposed can be stored at the site safely in line with our guidance. How this waste arrives at the site will not change the outcome of our assessment. |
| Concern that Article 22 is not fully explained within the Decision Document | Article 22 refers to Article 22 of the Industrial Emissions Directive (IED). This section of the IED covers requirements for site closure. |
| What provision will there be to prevent the Operator simply walking away rather than | The Permit would stay in force and the operator liable for it unless and until it is surrendered. To surrender the Permit the Operator would have to |

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| undertaking the required decommissioning and permit surrender | demonstrate that any pollution risk had been removed and that the land had been returned to a satisfactory state. Further details are in section 4.2.3 of this decision document. |
| Concern over controls during the commissioning period. | The Operator will be required to submit a commissioning plan, as required by pre-operational condition PO4. This will include measures to control emissions during commissioning. |
| Concern that there is no mention of a Building Regulations Approval Certificate in the Decision Document. | This does not form part of our assessment. We have to assess the environmental impacts of what is proposed and whether this is an activity that can be authorised under EPR. |
| Concern that the waste storage limit of 3,000 $m^3$ is not sufficient | The storage limit of 3,000$m^3$ is in line with the storage capacity proposed by the Applicant. There is therefore no reason to assume that this will not be sufficient. However, any proposed changes to the waste storage capacities cannot be made without an application to vary the permit. We would assess such an application and would only grant a variation if we were satisfied that it would not cause a significant impact. |
| What will prevent the IBA becoming hazardous? | IBA is normally classified as non-hazardous waste but can be classed as hazardous waste depending on its composition. The permit requires testing of the IBA in line with IED article 53 (3). A sampling protocol will be developed to ensure that the sampling and hazardous testing is done properly. Pre-operational condition (PO3) requires that the protocol is in place and approved. Classification of IBA for its subsequent use or disposal is controlled by other legislation and so is not duplicated within the Permit. |
| Concern that unbound incinerator bottom ash is harmful to the environment, especially when it comes into contact with water. Reference was made to a January 2022 report by Zero Waste Europe | The IBA will be stored in an area with a sealed drainage system. There will be no emission from the Installation of water run-off from the IBA area. Additionally, emissions to air will be minimised which will in turn minimise any indirect emission to water. The storage and transfer of IBA outside of the installation boundary has not been considered as part of this determination. The Permit does not control how IBA is used once it leaves the site although transport and subsequent use will be covered by duty of care, and other relevant, legislation. |
| Concern that the current regulations and testing methods for using IBA as a building material are outdated and insufficient | The permit requires testing of the IBA in line with IED article 53 (3). Further testing to enable classification of IBA for its subsequent use or disposal is subject to other controls and so is not duplicated within the permit. Further details are in section 4.3.9 of this decision document. |

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| Concern that the assessment does not consider the lifetime contribution to greenhouse gas emissions. Reference was made to two recent cases which it was considered affected how the proposed incinerator should be assessed. | Our role under Environmental Permitting is to assess local impact due to emissions from the Installation. We have done this and are satisfied that there will not be a significant impact. Our assessment of global warming potential is covered in sections 6.3 and 6.6 of this decision document.<br><br>The two cases referred to related to oil extraction and coal production. These are production processes. The burning of the oil and coal was an inevitable consequence of the extraction that was required to be assessed as being a likely effect of allowing the extraction. Waste incineration is not comparable to these processes. The incinerator is a waste treatment facility which is required as far as practicable to recover the heat and energy generated. How and what that energy will be used for will depend on innumerable decisions made outside of the incineration process. It would be impossible to identify any likely effects from how the energy may be used. In addition, these cases relate to what should be assessed in an Environmental Impact Assessment. These are delivered through the planning regime. Our role is to consider any information obtained or conclusion arrived at through the EIA process. See section 7.1.1 for more information on this. |
| Some court cases were referred to, including by members of the public, in some submissions in support of issues covered in Annex 4 of this Decision Document such as the adequacy of the consultation and the EIA, and impacts on health and habitats. | The two most recent cases are mentioned above. Otherwise, in accordance with our usual approach of summarising the key issues and explaining how we have dealt with them we have not included and responded to each reference. All have been considered. Whilst we do not necessarily agree with the interpretations given to the cases, we are satisfied we have adequately considered and explained our position in relation to the substantive issues they were mentioned in connection with. |
| **Comments about waste streams** | |
| Research included in the Decision Document is on health effects for municipal solid waste (MSW), but this site will also burn commercial and industrial (C&I) waste | We consider that all of the waste streams included in the permit are suitable for this plant. We consulted the UKHSA on the application. The Application is clear that the incinerator will burn a mixture of MSW and C&I waste. UKHSA had no concerns over health impacts. |
| **Comments about accident prevention** | |
| Concern that a pre-operational condition (PO10) has been set for a Fire Prevention Plan (FPP). | We are satisfied in principle they will have suitable measures in place but some detail needs to be provided once they have completed the final detailed design. Pre-operational condition PO10 requires an updated FPP to be submitted for approval upon completion of the final design. This is a common approach where areas of the operation are still subject to a finalised detailed |

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| | design. The site is unable to operate under this Environmental Permit without an approved FPP.<br><br>We consulted the Health and Safety Executive, Local Fire and Rescue Service and Local Harbour and Port Authority about this application. No objections were received from these consultees. |
| Concerns about the proximity to other land uses within the port, including fuel bunkers, meaning the location of the installation increases the risks to other port users and impedes access in the event of an emergency. | Location of the site is primarily a land use planning issue. Our role is to determine whether appropriate measures are used to minimise emissions and whether any impacts on the environment and health are acceptable.<br><br>Pre-operational condition PO10 requires further update to the Fire Prevention Plan prior to commissioning of the installation. It is a requirement of part of this condition that the sensitive receptor plan/s is updated to include the land uses at the port, including fuel storage. The inclusion of these risks within the sensitive receptor plan/s will allow Environment Agency officers and fire fighters attending the site in the event of an incident to familiarise themselves with the surrounding risks and respond accordingly.<br><br>An accident management plan will also form part of their environmental management system that is subject to Pre-operational condition PO1. This will ensure that appropriate measures are in place to ensure that accidents that may cause pollution are prevented but that if they should occur their consequences are minimised. |
| The Environment Agency has a duty to ensure that the COMAH regulations are not breached.<br><br>Concern that the location of incinerator would mean that the fuel storage bunkers would not be able to meet its obligations under COMAH if access was inhibited. | This Installation is not subject to COMAH regulations due to not meeting any of the COMAH thresholds. We are however aware that there is another site already located within the Port area which is covered by the COMAH Regulations. COMAH is a separate regime to Environmental Permitting and relates to how a site covered by those regulations is operated, it relates to how that specific site operates and granting this permit will not affect that.<br><br>We consulted the Health and Safety Executive about this application they didn't raise any concerns. |
| Approval from the fire service should be obtained before the Permit is issued.<br><br>The Fire Service has not been consulted | We are satisfied with the FPP and do not require the fire service to issue formal approval.<br><br>We consulted the fire service during determination, no response was received. |
| **Comments about permit conditions** | |
| Concerns about the permit conditions used. | Our view is that the permit will ensure a high level of protection is provided for the environment and human health. We are satisfied that the permit |

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| Permit conditions should be in place to ensure proper monitoring and enforcement of environmental standards. | conditions and limits will achieve this, and that the applicant has provided sufficient information to demonstrate their capability and commitment to comply with the permit conditions.<br><br>We will carry out inspection and audits on the Installation and the EMS to ensure that Permit conditions are complied with. Any non-compliances will be subject to our enforcement and sanctions statement.<br><br>We have addressed many of the concerns raised about specific permit conditions in the responses below. However, while concerns have been raised about individual conditions, it is important to recognise that they are designed to function cohesively within the broader context of the Permit. Reading them in isolation may not provide a complete understanding of how they work together. It is important to read the Environmental Permit in its entirety to fully understand the interconnections between various conditions. |
| Permit conditions 1.4.1 and 1.4.2 should be expanded to ensure the operator has to recycle IBA and APC residues | These are standard permit template conditions; we are satisfied that they meet the requirements of the Waste Framework Directive (WFD) and that no changes to the conditions are required. The Permit does not control how IBA and APC residues are used once they leave the site, although transport and subsequent use will be covered by duty of care and other relevant legislation. Having considered the information submitted in the Application, we are satisfied that the waste hierarchy referred to in Article 4 of the WFD will be applied to the generation of waste and that any waste generated will be treated in accordance with that Article. |
| Permit condition 2.3.2 does not specify a time in which the Environment Agency must be notified after a pollution event has occurred | This condition does not cover the duty of the Operator to notify the Environment Agency in the event of a pollution incident. Instead, it allows the Environment Agency to request an updated plan in the event we notify them that their activities are giving rise to pollution. No timescale is given in this condition as it allows flexibility and a tailored response depending on the nature of the pollution event.<br><br>The Permit also contains the standard permit conditions 4.3.1 and 4.3.2. These Conditions are designed to cover a range of scenarios, ensuring that the Environment Agency is informed promptly and appropriately. |
| Concern that Permit condition 2.3.5 allows separately collected wastes to be accepted | Separately collected fractions are only permitted in circumstances when they unsuitable for recovery by recycling and incineration delivers the best environmental outcome. Permit conditions 2.3.5 and 2.3.6 limit the burning of |

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| | separately collected fractions in line with regulation 12 of the Waste (England and Wales) Regulations 2011. It is also important to emphasise that separately collected fractions cannot be designated as RDF and accepted at the site without undergoing a further treatment stage, as the RDF code (19 12 10) is specifically limited to wastes that have undergone mechanical treatment. |
| How will notification of OTNOC required under permit condition 2.3.10 be made? | Schedule 4 of the Permit specifies that periods of abnormal operation (number of occasions and cumulative hours for current calendar year for each line) must be reported to the Environment Agency annually. The Operator is also required to report any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution to us within 24 hours. |
| Permit condition 2.3.13 should define when the operator initiates a shut down, rather than referring to another document | This is a standard permit condition for waste incinerators. We are satisfied that the condition provides sufficient controls. The documents referred to in the condition will form part of the operating techniques for the installation. |
| Concern that the wording of Permit Condition 3.3.1 does not provide sufficient controls for emissions of substances not controlled by emission limits (excluding odour) | This is a standard permit template condition. We are satisfied that it, along with other controls in the permit, provides sufficient controls to control emissions of substances not controlled by emission limits. We will regulate the site to ensure that the Operator operates the plant as described in the Application and complies with the conditions. If there are pollution issues, we will investigate them and take enforcement action if required. |
| Concern about how quickly the public will be informed if there is a contamination incident when Permit Condition 3.3.3 only requires periodic monitoring to be carried out every 5 years for groundwater and 10 years for soil. | Condition 3.3.3 requires monitoring for groundwater once every 5 years and for soil once every 10 years, this meets the requirements of the Industrial Emissions Directive. If contamination is present, the operator will be required to remediate, ensuring the land is returned to a satisfactory state.<br><br>Monitoring and reporting of pollution incidents, including spills, is required beyond the soil and groundwater monitoring specified in Permit condition 3.3.3. Condition 4.3.1 requires the Operator to notify the Environment Agency in the event of any accident from the operation of the installation which may significantly affect the environment, or any breach of any permit condition. Should spills or leaks be detected, the Operator will be required to investigate immediately and may need to monitor to confirm whether ground / groundwater has been affected and remediation is required. |

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| | All monitoring data required by the Permit will be reported to the Environment Agency and placed on the public register as will any notification under condition 4.3.1. |
| Concern that Permit Condition 3.4.1 is not sufficient to control odour from the site | We disagree and are satisfied that we will be able to regulate odour through Permit Condition 3.4.1.<br><br>If there are odour complaints we will investigate and look into the source and cause. There are several ways we can do this including visiting the site, discussions with the complainant and with the Operator. If appropriate we will require the Operator to put measures in place to rectify any issues. |
| Concern that Permit Condition 3.7 is not sufficient to control pests | We consider that the standard pest Permit conditions are sufficient. We are satisfied that there will not be a significant problem with pests. Pests are not usually a problem at other municipal waste incinerators that we regulate. We can however request a pest management plan through the Permit condition if needed. |
| Concern that condition 4.3.5 allows changes to the site which wouldn't be subject to public scrutiny | Condition 4.3.5 only covers minor operational changes which would not require a formal variation. The Operator must notify us of any changes under this condition, if we don't agree that the proposed change falls within the scope of this condition a variation application would be required. |
| Concern that Permit Conditions 2.3.9 and 2.3.13 do not require automatic shut-down as stated in Annex 1A of the Decision Document | We are satisfied that the Permit conditions deliver the requirements of Article 50(4) of the IED, as identified in Annex 1A of this Decision Document.<br><br>Condition 2.3.9 states that 'Waste shall not be charged if' certain conditions are met/ not met. 'Waste shall not be charged' means the waste feed must stop which is a shut-down of the plant.<br><br>Condition 2.3.13 provides definitions of the end of an abnormal operating period. At the end of these periods if the plant cannot meet the criteria to resume normal operation, then it cannot continue to operate and must shut down. |
| Concern that there is no required action in the permit should periods of OTNOC extend beyond 4 hours in one event or 60 hours in a year (Permit conditions 2.3.13(c) and 2.3.13(d)) | The permit considers OTNOC to be abnormal operation. Abnormal operation is defined in Schedule 6 of the Permit, which confirms that abnormal operations are limited to no more than a period of 4 hours continuous operation and no more than 60 hour aggregated operation in any calendar year. As stated above, if at the end of these periods the plant cannot meet the criteria to resume normal operation then it must shut down.<br><br>We have also included pre-operational condition PO1 which includes the requirement for 'other than normal operating conditions (OTNOC)' |

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| | management plan [in accordance with BAT 18]. This requires approval and incorporation into the EMS. |
| Concern about the wording of Permit condition 4.2.4: what are the consequences when it is not practicable to minimise pollution? | In deciding to issue the permit we are already satisfied with the measured proposed. 4.2.4 is a standard permit condition included in all installation permits; it is not unique to the waste incineration sector. By mandating regular assessments, the Environment Agency ensures that operators are continually looking for ways to improve their environmental performance and reduce their impact on the environment. This proactive approach helps to identify and implement best practices, leading to better environmental outcomes should they become available. |
| **Comments about the Applicant** | |
| Concern that the operator will not be technically competent and that they should be part of an approved competence scheme. | The EPR core guidance states 'that if an operator is carrying out a 'relevant waste operation' they must comply with an approved technical competence scheme'. An incineration activity is not a relevant waste operation.<br><br>We are satisfied that the Applicant will be a competent operator because:<br><br>• An EMS certified to ISO 14001 will be in place<br>• A suitably qualified facility manager will be appointed who will have responsibility of Permit compliance<br>• An environmental policy will require that the Installation operates in full compliance with legislative requirements<br><br>Additional information is in section 4.3 of this decision document |
| Concern that Powerfuel Portland Limited stated within their planning application that they will not be the operators of the proposed waste incinerator. | We consider that the operator has provided adequate evidence to show that they will be competent and the legal operator of the regulated facility. See additional information in section 4.3 of this decision document |
| **Comments about the consultation** | |
| Request to extend the consultation period as it coincides with the summer holiday period. | The permit application was duly made in May 2021. We consulted on the application from June – September 2021, an extended 15-week period and continued to consider representations received during our determination. In addition, the minded-to issue consultation was an opportunity for the public to comment on our draft decision. We consider that our consultation has been extensive and satisfies all legal requirements. We also have a statutory duty to determine the application and do not consider deferring our determination is justified. |

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| | We originally consulted on our draft decision from 12 July– 11 August 2024. However, we received correspondence that one of the links given in the Briefing Note wasn't working correctly. We therefore took the decision to reopen the final consultation on our draft decision. The second consultation ran from 20 Sept – 20 Oct, by coincidence this was outside of the summer holiday period. |
| Concern that the application should not be determined without input from the Food Standards Agency (FSA) | Food Standards Agency was consulted during the permit determination process and no concerns were received. |

d) Representations from Individual Members of the Public

Over 980 responses were received from individual members of the public. Many of the issues raised were the same as those considered above and in Annex 4 Part A of this decision document. To avoid repetition, generally only those issues additional to those already considered are listed below:

| **Brief summary of issues raised:** | **Summary of action taken / how this has been covered** |
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| **Comments about air emissions and air risk assessment** | |
| Concern that air quality in the area is already poor, for example due to increased traffic and industrial activities and that emissions from the incinerator will make this worse. | The air quality assessment took into account existing background pollution levels. The conclusion of the assessment, which we agreed with, was that there would not be a significant effect on air quality or health from the installation when combined with these background levels. As part of our audit, we reviewed the Applicant's consideration of existing pollution in their dispersion modelling. We verified the background levels and are satisfied that they are appropriate, ensuring that the impacts from the installation are not significant. More details can be found in Section 5 of this decision document. |
| Concern about the long-term impacts of emissions | We consider both long and short-term impacts in our assessment. We are satisfied that the installation will not have a significant effect on human health or the environment. Further detail of our assessments is given in Section 5 of this Decision Document. |
| If background pollution levels from other sources increase, then Environmental Standards will be exceeded in future. | Given the level of the predicted impacts this is not likely to occur. In theory a very large increase in traffic or industry in the area could lead to an increase in the levels of oxides of nitrogen and other pollutants. The local authority is responsible for local air quality due to traffic emissions. New developments will require planning permission where effects on local air quality would be considered. If any of these developments also require an Environmental Permit we would undertake an assessment considering relevant background pollution levels. |

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| Generating electricity by incineration produces more carbon dioxide than burning coal or gas. | We have not compared emissions to coal or gas combustion in our assessment of this Application. The Applicant has not applied to operate a power station, the Application is for an incineration plant with the primary purpose of waste disposal whereas a power station's primary purpose is to generate energy. |
| Large quantities of carbon dioxide ($CO_2$) will be emitted | Carbon dioxide and global warming is covered in detail in the decision document in section 6.3 of this Decision Document. |
| Concerns about the impact of pollution from fly ash (and ash 'fall out')<br><br>Also, concern about the impact of ash fall out on the sea | Combustion gases will be directed through particulate filters to control particulate emissions at low levels, ensuring compliance with the ELVs set within the permit. Bag filters are highly efficient at abating emissions of particulate matter (including ash in the flue gas). We are satisfied that bag filters are BAT for removal of particulate matter and that impacts will not be significant. It is therefore not anticipated that emissions to air from the installation will significantly impact the marine ecosystem.<br><br>APC residues are collected on the bag filter. Fly ash will be combined with the APC residues and classed as hazardous waste for disposal. We are satisfied that the residues will be handled in a manner that protects the environment. |
| Concern about the potential impact of air emissions on historic and other buildings especially those made from Portland Stone<br><br>Concerns that the installation will increase acid rain. | We assess impacts of emissions on human health and the environment, our assessment is discussed in this decision document. The only pathway for damage is via acid rain from acid gas emissions, which can affect stonework. We have considered the impacts of acid gases and the impacts are insignificant. We therefore do not consider that emissions from the Installation will impact buildings.<br><br>For this installation, acid gases will be abated by injection of hydrated lime into the exhaust gases. Wet deposition is a long-range effect, and we consider that the amount of acid gases emitted from the installation will not be significant enough to contribute towards acid rain. |
| Concern that it is not possible to model the site location due to the geographical location and terrain.<br><br>Concern that there has been no assessment of an incinerator in a comparable geographical area | We do not agree that it is not possible to model air dispersion in this location. We audited the Applicant's modelling, this included checking any effects from topography. We are satisfied with the way it was carried out. We tested sensitivity using ADMS and alternative modelling software - AERMOD and CALPUFF to represent the topography surrounding the site and consider modelling uncertainties.<br><br>The impact of the terrain surrounding the site upon plume dispersion was considered in the |

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| | dispersion modelling. This is considered further in Section 5.2.4 of this decision document.<br>Our view as set out in this decision document (section 5.3) is that emissions from the Installation will not have a significant effect on health.<br><br>We are not aware of an incinerator in a similar location but are satisfied we can rely on the modelling. |
| Concern about impacts from air emissions being carried by the wind over Poole, Bournemouth, Christchurch, the New Forest<br><br>Concern about impacts from emissions to air on receptors further away than those included in the assessment, including Dorset County Hospital | We are satisfied that the proposal is unlikely to result in a significant impact on air quality at any location and regardless of wind direction or distance. The dispersion modelling predicts no significant impacts at the location of maximum predicted concentration. This means that any other offsite location will experience lesser impacts than the maximum concentration which have assessed as acceptable. The modelling considers closest receptors. Modelling of additional receptors further away is not required as we are satisfied impacts will be less than those we already consider permissible. |
| The facility's potential to contribute to local air pollution conflicts with the UK's commitments under the Air Quality Standards Regulations 2010 | We are satisfied that the proposal is unlikely to result in a significant impact on air quality. The Air Quality Standards Regulations 2010 Limit Values and Target Values are used in our assessment, section 5 of this decision document details how this is taken into account. |
| Application does not cover how exceedances will be dealt with | The Permit requires that waste feed must stop if emission limits are exceeded. Abnormal operation is allowed in which waste feed can continue for shorts periods due to unavoidable problems with the abatement plant. This is discussed in section 5.5 of this decision document.<br><br>Any non-compliance with the Permit will be considered in accordance with the Environment Agency's enforcement and sanctions policy. |
| Exceedances of emissions limits are common in the incineration sector and there are emissions breaches at other incinerators within the UK. | Incineration plants in the UK are among the most tightly regulated plants. Current performance of incineration pants that we regulate in England is good and leads us to the conclusion that the proposed Installation will be able to comply with the emission limits. If they do not comply, we will deal with any breaches in accordance with our enforcement and prosecution policies. If exceedances do occur, we consider that the permit conditions limit the potential for harmful exceedances. |

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| Concern over impacts and regulation at other incinerator plants, including:<br>• odour<br>• noise<br>• emissions<br>• waste management issues<br>• pests, and<br>• light pollution | Our view is that these issues are generally well controlled at EfW plants, and we are satisfied that for this application appropriate measures have been proposed. In the event of any issue, we will investigate and take action if required. |
| Concerns about volatile organic compounds (VOCs) emissions | The Applicant's dispersion modelling predicted a PC for VOCs of 4% of the long-term ES. The assessment assumed a very much worst case in which all of the VOC was 1,3-butadiene, in reality the real impacts would be likely to be much lower.<br><br>Measures to control dioxins and other POPS are set out in section 6.2.5 of this decision document. Methods for control of other VOCs are covered in section 6.2.4. We consider these methods to be BAT. |
| When substances in the refuse cannot be identified they should be treated as 100% benzene. This has not been done. | Instead of benzene, the impact of VOCs was assessed assuming it is all butadiene. The Applicant has used the ES for 1,3 butadiene for their assessment of the impact of VOCs. Assuming all VOCs are 1,3-butadiene rather than 100% benzene is considered to be a more conservative approach. This is based on 1,3 butadiene having the lowest ES of organic species likely to be present in VOC (other than PAH, PCBs, dioxins and furans). We are satisfied that this is a conservative approach and that it is appropriate for the assessment. Even when making this worst-case assessment impacts were screened out. Section 5.2 has further details. |
| Installation will create smog | The installation will not create a smog, as there will not be emissions of smoke from the Installation. Smoke is made up of high concentrations of particulates. Particulate emissions will be controlled to low levels by the bag filter system. |
| Assessment does not consider impacts on cruise ships | The port, where cruise ships may be docked, is included within the modelled domain. The standards that we have used to assess against are set to protect all members of the public. We are satisfied that there will not be a significant impact on cruise ships. |
| Concern about impacts of emissions if the wind changes direction | We are satisfied that the proposal is unlikely to result in a significant impact on air quality at any location and regardless of wind direction. |
| Filters are not able to remove all particulates. | The bag filters will not remove all particulates from flue gases; they are used to abate particulates to ensure that emissions fall below the ELVs set within the permit. Fabric filters provide reliable abatement of particulate matter |

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| | to below 5 mg/m$^3$ and are BAT for most installations.<br><br>The Applicant has proposed a multi compartment fabric filter to abate particulate matter. This type of filter is very efficient at removing particles. Emissions of particulate matter have been screened out as insignificant, and so the Environment Agency agrees that the Applicant's proposed technique is BAT for the installation. Further details are in section 6.2.1 of this decision document. |
| Bag filters will not capture ultrafine particles. | Whilst efficiency varies depending on particulate size, overall bag filters are very effective. Our view is that bag filters are BAT. Filter bags provide particulate abatement from the fabric itself. In addition, particulate removal also occurs via a three-dimensional dust cake which is maintained on the surface of the filter membrane by controlling the bag cleaning process and the pressure drop through the fabric filter. The membranes have very small pores which in combination with the filter cake which accumulates on the bag filters provide effective abatement of particulates. Research has shown the removal efficiency is very high even for smaller particles. See section 5.3.3 of this decision document for further details. |
| No technology exists that can remove 100% of the emissions | We are required to prevent and where that is not practicable minimise emissions. It is not possible to completely prevent all emissions. We are satisfied that methods will be in place to prevent and where that is not practicable minimise and abate emissions. These are discussed in section 6 of this document. |
| Concern that emissions from incinerators have risen nationally due to increasing plastic content | National policy on waste and emissions is not within the remit of this permit. We have set emission limits in the Permit to ensure there is no significant impact locally. The conditions set within Environmental Permits ensure that an installation can operate in an environmentally acceptable manner. |
| The pollution will be worse than from a landfill site. | The Application is for an incineration plant and we have assessed BAT for that sector. A comparison with landfill is not relevant for this environmental permitting assessment. Our assessment of BAT is set out in section 6 of this decision document. |
| Concern that emissions to air will collect around Lyme Bay and Weymouth Bay on days without wind | We are satisfied that the proposal is unlikely to result in a significant impact on air quality at any location and regardless of wind direction or speed. The applicant's ADMS model also considered the impact under stable conditions. See section 5.2.4 of this Decision Document. |
| **Comments about health impacts** | |

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| The proposed plant is putting profit ahead of the health of local people. | We are satisfied that the installation will not have a significant effect on health.<br><br>The Applicant will be required to comply with the conditions of the Permit. Any profit made (or not made) by the Applicant will not be a factor in how we assess whether they have complied with the Permit. |
| Concern about impacts on air quality from other incineration plants leading to public health concerns | We are satisfied that the proposal is unlikely to result in a significant impact on air quality.<br><br>The UKHSA's opinion, with which we agree, is that modern, well run and regulated municipal waste incinerators are not a significant risk to public health. |
| Concern about impacts on the health service | We are satisfied that there will not be a significant impact on health due to the Installation so there would not be any impacts on the health service. Section 5.3 of this decision document has further details. |
| Multiple studies have shown a clear link between exposure to emissions from waste incinerators and an increase in respiratory conditions such as asthma, chronic obstructive pulmonary disease (COPD), and bronchitis. | Taking account of the available research as a whole we do not consider that there will be a significant impact on health in the area. This is in line with UKHSA's position statement as discussed in section 5.3 of this decision document. We have also consulted with UKHSA as part of our determination of this application. |
| Concern the incineration of waste will lead to an increase in cancer rates<br><br>Studies have shown a correlation between exposure to incinerator emissions and respiratory problems, cardiovascular diseases, and cancer. | We do not consider that there will be a significant impact on health in the area. This is in line with UKHSA's position statement as discussed in section 5.3 of this decision document. We have also consulted with UKHSA as part of our determination of this application. |
| Concern that an incinerator cannot be considered safe near any residential population. | We are satisfied that there will not be a significant impact from emissions to air at any receptor.<br>Worst case assessments have been made on the most sensitive receptors, with no significant impact expected. Section 5 of this decision document has further details. |
| Many residents keep chickens, grow fruit and/ or vegetables in their gardens or allotments. | Ingestion of locally grown food was taken into account in the HHRA.<br><br>The HHRA is very much a worst-case assessment with based on the dose of dioxins and furans that would be received by local receptors if all their food and water were sourced from the locality where the deposition of dioxins, furans and dioxin like PCBs is predicted to be the highest. |
| Impacts on health of people using the water, including swimming and sailing | We are satisfied that there will not be a significant impact on health due to emissions to air or water from the Installation. |

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| | The only discharge to water is uncontaminated surface-water runoff, this is consistent with runoff that occurs already after periods of rainfall and is therefore not expected to impact water quality. |
| Concern about impacts on prisoner health | We are satisfied that there will not be a significant impact on health due to the Installation. Section 5.3 of this decision document has further details.<br><br>The standards that we have used to assess against are set to protect all members of the public. |
| The potential for environmental pollution, especially in relation to public health, must be fully considered in the permitting process | We are satisfied that our assessment has fully considered the potential for pollution and impacts on human health from operation of the waste incinerator. Details of our assessment is given throughout this Decision Document. |
| A copy of the following report was submitted: *"The Heath Effects of Waste Incinerators, 4th report of the British Society for Ecological Medicine 2008"*<br><br>Concern that this report references circa 200 research studies, which identify substantial risks posed by incinerators in built up areas, particularly for children.<br><br>There was also reference to 2 American studies showing impacts on human health. | It's important to note that the report in question is 17 years old. We are therefore confident that any findings and recommendations from this report have already been thoroughly reviewed and considered by UKHSA.<br><br>Our view is that there will not be a significant effect on health. This is in line with UKHSA's position statement as discussed in Section 5.3 of this decision document. The UKHSA continues to review its advice in light of new substantial research on the health effects of incinerators published in peer-reviewed journals. To date, they have not found evidence that necessitates a change in their position statement. |
| Concern about an increase in infant mortality rates associated with incinerators | Our view, in line with that of the UKHSA, is that there is not a link between incinerator emissions and infant deaths |
| Concern was expressed that there will be an impact on locals' health due to the Installation including those with existing health conditions e.g. asthma, cardiovascular disease, COPD | We are satisfied that there will not be a significant impact on health due to the Installation. Sections 5.2 and 5.3 of this decision document have further details.<br><br>The standards that we have used to assess against are set to protect all members of the public. |
| Concern was expressed over the Environmental Standards that were used. It was claimed that they are higher than some WHO levels. | We are satisfied that the Environmental Standards used within the assessment are appropriate. The use of the standards and the basis of them is explained in section 5.1 of this decision document. |
| Concern about emissions of Polycyclic aromatic hydrocarbons (PAHs) impacting unborn babies, including genetic effects and that this potentially breaches the Stockholm Convention on protecting infants, children and the foetus. | The UKHSA maintains that modern, well-run, and regulated municipal waste incinerators are not a significant risk to public health. |

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| | We are confident that the measures taken to control the release of dioxins will also control the releases of dioxin-like PCBs and PAHs. Impacts have been assessed in the Air Dispersion Modelling provided in the Application. PAH emissions are unlikely to give rise to significant pollution or harm to human health. See section 5.2 of this decision document for more information.<br><br>We have considered the Stockholm Convention during our determination; this is discussed further in section 6.4. |
| Concern that a study from Public Health England found a clear correlation between incinerator emissions and an increased risk of low birth weight and premature births. | PHE (now UKHSA) investigated the potential health effects of emissions from municipal waste incinerators (MWIs) on birth outcomes, including low birth weight and premature births. The study concluded that there was no evidence of a link between exposure to emissions from MWIs and adverse birth outcomes such as low birth weight, premature birth, infant death, or stillbirth. Please refer to section 5.3.1 where the findings of the UKHSA study are discussed. In summary, the UKHSA confirmed that the study did not change their position of the health risks. |
| Several reports, papers and articles were cited claiming that the incinerator would cause health impacts due to air emissions. | We considered the reports, papers and articles that were cited. Based on our review of a wide range of scientific opinion our view is that the Installation will not have a significant impact on health. This view is supported by the UKHSA. Further details are in section 5.3 of this decision document. |
| **Comments about impacts at ecological sites** | |
| Concern over impact on protected and red listed species. It was claimed that there are many protected species in the area including birds, invertebrates, butterflies, fish, shellfish, plants, coral and reptiles. | We have carried out an assessment on the designated habitats, which includes protected species. Our assessment is described in section 5.4 of this decision document. We are satisfied that there will be no likely significant effect on either habitats or the fauna within them including protected and red listed species in the nearby area. |
| Concern about impacts at RSPB sites | We do not screen for impacts at RSPB sites specifically unless they are overlain by other designations we consider as part of the permitting process (for example SACs, SPAs, Ramsars and SSSIs). However, the RSPB sites are located further away from the installation than some of the other habitat sites we have considered in our assessment. Therefore, as there is no significant pollution at these designated sites, we are confident that there will be no significant pollution at the other habitats which are located at a further distance and therefore considered to experience lesser impacts than those which have been determined as acceptable. |

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| A number of concerns raised about impacts on the Fleet Lagoon | The Fleet Lagoon forms part of the Chesil Beach & The Fleet SPA and Ramsar, Chesil & The Fleet SAC and Chesil & The Fleet SSSI. We have considered potential impacts on all of these designated sites as part of our determination. We are satisfied there that will not be a significant impact. See Section 5.4 of this Decision Document for further details of our assessment. |
| Concern about impacts on the land bordering Beach Road as it is rich with wildlife | We have carried out an assessment on the designated habitats, which includes protected species. Our assessment is described in section 5.4 of this decision document. Large parts of the land boarding Portland Beach Road is covered by designated habitats sites, where it is overlain by designated sites the land has been specifically considered in our assessment. We are satisfied that there will be no likely significant effect on either habitats or protected species in the nearby area. For land that is not part of a designated site we are also satisfied there will be no significant pollution. |
| Concern about impacts on lichens and mosses in the New Forest | The New Forest National Park is over 50km from the Incinerator. Impacts have been screened out at sites much closer than this. We therefore consider that emissions from the stack will not have a significant impact on habitats and species within the New Forest. |
| Concern about impacts on birds nesting on the cliffs | We do not consider that emissions from the installation would cause adverse impacts to birds nesting close to the site. |
| The Environmental Agency recently refused an application for a waste incineration permit in Hartlepool due to its proximity to an SSSI. Therefore, this permit should also be refused due to its proximity to a SSSI. | The Graythorp Energy Centre permit application was refused. In that case it was concluded that the predicted air emissions from the proposed activity were likely to damage the features of interest within the Teesmouth and Cleveland Coast SSSI. Each permit application is assessed based on its individual merits and the specific facts pertaining to it. The proximity to a SSSI, or other designated habitat site, is not automatic grounds for refusal. Instead, we assess the potential impacts from each application of the features of the designated site. As a result of our assessment for this application, we can conclude that the operation is not likely to damage special features of the SSSIs. Natural England agrees with our conclusions. |
| **Comments about odour emission impacts** | |
| Concern over odour during waste transport to the site. | The Permit can only control emissions that occur from inside the site. We are satisfied these will be adequately controlled. Waste will be delivered in enclosed or covered vehicles that will minimise odour emissions and prevent significant impacts. |
| Concerns about odour from traffic | |
| Concern about odour from burning plastics | Although it is likely that the RDF will contain some plastics, most plastics should be separated at |

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| | source. Other measures such as bunker management, combustion control and emission limits will provide sufficient control to ensure that any plastic in the waste will not cause significant pollution or harm.<br><br>Measures to prevent odour emissions are set out in section 6.5.4 of this decision document. We are satisfied that odour impacts are unlikely to occur and Permit conditions will control this. |
| **Comments about noise emission impacts** | |
| Concern about nighttime noise from deliveries, including additional traffic during the night. | Noise impacts have been considered as discussed in section 6.5.5 of this decision document. The noise assessment included on-site vehicle movements and also considered night-time noise. |
| **Comments about waste streams** | |
| Concern that future changes to the waste stream, including importing waste from outside the UK would mean emissions would be higher and the imported waste may not meet the required standards. | The Emission Limit Values (ELVs) set in the permit are in line with BAT AELs and/or IED Chapter IV for new plant, they would need to be met regardless of where the waste stream is sourced from or any changes to its constituents. The operator is only permitted to receive one waste type 19 12 10. The Operator will have procedures to record the waste types that are received at the Installation. When we visit the site we will audit records of waste receipt.<br><br>The importation of waste is also controlled by other legislation which includes providing appropriate descriptions. |
| **Comments about BAT and control measures** | |
| Alternatives technologies that will recover waste and result in lower emissions should be used. Suggestions included pyrolysis and gasification to generate syngas. | It is argued that Incineration is not an environmentally sustainable technology and therefore cannot be considered to be the Best Available Technique (BAT). The Environment Agency is aware that a number of proposals are coming forward for other ways of dealing with waste streams such as pyrolysis and mechanical / biological treatment. At this time however, mass burn incineration at this scale can still be considered BAT, subject to the appropriate assessments being made.<br><br>Pyrolysis and gasification are methods that generate syngas. These methods were considered in the Applicant's BAT assessment, as discussed in section 6 of this decision document. We are satisfied that, at the proposed scale, they would not be BAT for this Installation. |
| Concern that UK will weaken EU BAT standards | Existing EU BAT Conclusions continue to have effect in the UK through the EU Withdrawal Act 2018. However, the development of BAT will now be managed independently by the UK government. This will include Technical Working Groups made up of industry experts, regulators, |

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| | and non-governmental organisations (NGOs) to ensure a comprehensive and evidence-based approach. The development of UK BAT aims to maintain high levels of environmental protection while allowing for tailored approaches to the UK's specific need. There is no reason to believe that future UK BAT will allow backsliding on the current standards applied through EU BAT. |
| Concerns that the stack is not tall enough; including reference to The World Bank report on Municipal Incinerators (2000) which advised that the stack should be twice the height of the tallest building lying within a kilometre of an incinerator. | The report states that "the stack should be twice the height of the tallest building within 1.0km, or at least 70 meters high". The proposed stack for this installation is 80 metres high it therefore meets the recommendations of the report. In any case The World Bank document only provides general high-level advice to decision makers.<br><br>Having assessed the Application as a whole we are satisfied that the measures proposed, of which stack height is one aspect, are BAT. We are satisfied that the stack height has been calculated in accordance with IED article 46(1). The stack height will safeguard human health and the environment. |
| It is essential that the permit includes robust, enforceable conditions for emissions monitoring, pollution control, and abatement technologies. | We consider that the permit includes these and that the conditions set are achievable and enforceable. |
| **Comments about other issues** | |
| Concern about the ability of the fire service to access the site in an emergency given the one road/ causeway access to the Isle of Portland | We are satisfied that appropriate measures will be in place to prevent accidents or minimise impacts if they did occur. See section 4.3.4 of this decision document for further information.<br><br>Generally, vehicle movements on public roads are outside our remit. However, given the coastal location of the installation we consider that there will be other potential ways for emergency services to access the site in the event road access is not available.<br><br>We consulted the fire service during determination, no response was received. |
| Concern that this application is just the first phase and that there are plans for future expansion. | We have a statutory duty to determine the application submitted. Any proposed changes to the site cannot be made without an application to vary the permit. If they wanted to expand in future, we would assess any application made and would only grant a variation if we were satisfied that it would not cause a significant impact. |
| Concern that waste will not be covered during transport | Waste will be delivered to the Facility as both baled waste and 'loose' RDF. The Supporting Information Document submitted as part of the application states that incoming waste will be delivered in covered vehicles or containers and unloaded in the enclosed waste reception area. |

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| | There are also additional controls applied to road transport that are not part of the permitting regime including duty of care, and other relevant, legislation. |
| Several responses were received stating that they did not agree with various aspects of our decision including air quality, health, ecological sites assessments and global warming. | As explained in detail in this decision document we are satisfied 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. |
| The installation is against the wishes of the local council as they refused planning permission. | Planning and EPR are separate processes, but the Operator will have to comply with both the planning permission and the Permit.<br><br>We consulted with the local authority as a statutory consultee and took their comments into consideration during determination of the Environmental Permit. Their comments on the Permit application are addressed within this Decision Document. We have to make our determination based on the environmental impacts of a proposal regardless of whether it has public support or not. |
| The local MP is against the incinerator | We took their comments into consideration during determination of the Environmental Permit. Their comments on the Permit application are addressed within this Decision Document. |
| Concern that the Operator will want to transport IBA by boat to cut costs | The permit does not cover the loading of incinerator bottom ash (IBA) onto boats. The bottom ash will be loaded onto road vehicles within an enclosed ash handling/storage area for transport off-site for treatment. The storage and transfer of IBA outside of the installation boundary is not part of and has not been considered as part of this determination. The Permit does not control how IBA is transported once it leaves the site although transport and subsequent use will be covered by duty of care, and other relevant, legislation. |
| Concern about litter from ships used to transport waste | The Applicant has said that port location of the installation allows waste to be transported by road or delivered by ship. The transport of waste does not form part of this Permit up to the point it enters the installation. Therefore, the use of ships to transport waste is outside of the remit for this permit. It is for the port/ harbour authority to ensure that port operations can operate in a manner that avoids marine pollution. Depending on the nature of any future proposals, other permits/ permissions may also be required.<br><br>Any waste transportation, including unloading and transportation of waste before it arrives at the facility, is subject to Duty of Care Regulations. |

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| | In the event waste is transported by ship to the port, the Applicant has confirmed that waste will be transferred to the site in enclosed delivery vehicles and tipped into the bunker within the reception building. We are satisfied that impacts from litter are unlikely to occur from the permitted activities. |
| Concern that the adjacent gas storage site, for either natural gas or hydrogen has not been considered. | Location of the site is primarily a land use planning issue. Our role is to determine whether appropriate measures are used to minimise emissions and whether any impacts on the environment and health are acceptable.<br><br>Pre-operational condition PO10 requires further update to the Fire Prevention Plan prior to commissioning of the installation. It is a requirement of part of this condition that the sensitive receptor plan/s is updated to include the land uses at the port, including fuel storage. The inclusion of these risks within the sensitive receptor plan/s will allow Environment Agency officers and fire fighters attending the site in the event of an incident to familiarise themselves with the surrounding risks and respond accordingly.<br><br>Pre-operational condition PO1 requires an Accident Management Plan to be submitted for review by the Environment Agency prior to commissioning, which will ensure all appropriate measures are in place. |
| Comparisons with fossil fuel electricity generation are outdated as most electricity will soon be from renewable sources. | The Applicant has not applied to operate a power station, the Application is for an incineration plant with the primary purpose of waste disposal whereas a power station's primary purpose is to generate energy. At this time, mass burn incineration at this scale can still be considered BAT, subject to the appropriate assessments being made. |
| Concern about the accuracy of the information in the application and that alternative information presented during public consultation has not been considered. | We have assessed the Application submitted to us. The Permit will require the Installation to be operated as described in the Application. We have no reason to consider that the information contained in it is inaccurate. The Applicant is required to ensure that information presented in their permit application is accurate. If they knowingly or recklessly make a statement that is false or misleading to help them get an environmental permit, they will be committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.<br><br>All of the responses received to all of our consultations have been considered.<br><br>We are satisfied that we have sufficient information to be able to determine the permit |

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| | These concerns also made reference to additional information which was presented during the planning process. Environmental permitting and planning are considered separately, with differing remits. Our view is that the planning and the Permit are not likely to conflict but in any event the Applicant will have to comply with both their planning permission and the Permit and in the event of any difference comply with the most stringent. |
| The incinerator may lead to breaches of the Water Resources Act | There are no emissions to water other than uncontaminated rainwater run-off. All such uncontaminated surface water run-off will be discharged, via separate discharge points, to Balaclava Bay (east) and/or Portland Harbour. Surface water run-off will be collected from areas of hardstanding and building roofs and discharged into the surface water drainage system. The surface water drainage system will be fitted with a retention interceptor and swales, prior to the discharge point, to prevent discharge of oils and sediment collected from vehicle movement areas and roadways being released off-site. |
| The EIA documents are not sufficient. | The EIA documents formed part of the planning application. They were submitted with the EPR application, and we had regard to those documents as set out in section 7.1.1 of this decision document.<br><br>We are satisfied that the EPR Application documents contained the information we need to determine the Application. |
| Concern that waste will attract seabirds | The waste reception and storage area, and all incoming waste handling activities will be undertaken within a fully enclosed building. This should mean there is nothing to attract birds.<br><br>We are satisfied that there will not be a significant problem with pests, including seabirds. Pests are not usually a problem at other municipal waste incinerators that we regulate. We can however request a pest management plan through the standard pest Permit condition if needed. |
| Concern about potential radiation leaks from nuclear submarines stationed nearby leading to a shutdown of the incinerator and evacuation of the port | The location of the installation and other land/ water uses in the proximity are not within the remit of this determination except to the extent of assessing any potential impact on them. Emergency planning and local area evacuation procedures are the sort of thing usually covered in major accident plans for sites subject to COMAH regulations. The Installation is not subject to the COMAH regulations, and a major accident plan is not required. |

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| | The Applicant provided an accident risk assessment in the Application. An accident management plan will also form part of their environmental management system that is subject to Pre-operational condition PO1.<br><br>There is no reason to believe this concern would arise but in the event of any emergency the plant could be shut down safely.<br><br>We have raised the issue with Dorset Council's Emergency Management and Resilience Team. They advised that the installation is outside of the current Automatic Countermeasures Zone (ACMZ). The decision as to whether the installation would need to be evacuated in the event of an incident is not within the remit of the Environment Agency. But we would expect the site to consider this eventuality in their accident and OTNOC management plans. |
| Concern that the application documents and our Decision Document are too difficult for the public to easily understand | We aim to make Decision Documents accessible whilst covering often technically complex proposals. We consider that this Decision Document sets out our reasoning as clearly and simply as possible given the highly technical nature of the Application.<br><br>For this permit determination, we decided to share all of the permit application documents and supporting information in full as part of the application consultations. It is the Applicant's responsibility to submit sufficient relevant information and evidence to support an Environmental Permit application. The supporting information and evidence should also be proportional to the complexity of the proposals and the environmental risk posed.<br><br>Some of the documents which form this application are long and/or of a technical nature; however, this is to be expected as they contain the information we need to determine the permit application and make a full assessment of the potential risks posed. |
| Concern that granting a permit is legalising pollution | The permitting process is concerned with the impact of emissions from the process and we are satisfied these will not cause significant pollution of the environment or harm to human health. The conditions set within Environmental Permits ensure that an installation can operate in an environmentally acceptable manner. |
| Several concerns that the approval of this application is related to money and corruption. | We completely refute this. Our determination is impartial and takes into account only the environmental impacts within our remit. |

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| Concern about what will happen to waste vehicles in the event the access road to the island is closed. | We would expect the Operator to manage waste imports and exports from the site appropriately and have plans for this eventuality. Any vehicles already on the island will be accepted and unloaded in accordance with the permit. The subsequent destination and management of vehicles not already on the island fall outside of the remit of this permit. However, we would expect the Operator to have contingency plans for this eventuality. For instance, we would not anticipate the continuation of waste deliveries by road if there were a likelihood that the waste vehicles would be unable to leave the Isle thereafter. |
| Concern that the application does not contain enough detail to enable a full assessment | We are satisfied that the application contains sufficient detail for us to undertake a full assessment and issue a permit. Some of the finer detail can only be determined at the detailed design. We have set pre-operational conditions so that management plans are updated if required after the detailed design but we do not expect the main principles to change. If any significant changes were proposed, then we would require the Permit to be varied and we would consult on this as appropriate. Pre-operational conditions will be assessed by the Environment Agency. The site cannot commence operations until all pre-operational conditions have completed satisfactorily. |
| Concern over general downgrading of the area including damage to the economy and house prices. | Some of these issues may be a relevant consideration for the granting of planning permission. Our remit relates to whether the incinerator can operate in an environmentally acceptable manner or not. Given that we consider it can there is no reason why these impacts should occur. |
| Concern the incinerator will have a detrimental impact on local businesses, the hospitality sector, tourism, blue flag status, leisure, heritage assets, Portland & Weymouth towns of culture 2025 status, and local culture. | |
| Concern that emissions from the installation will impact the ability to grow organic food in the area | Ingestion of locally grown food was taken into account in the HHRA. The HHRA is very much a worst-case assessment with based on the dose of dioxins and furans that would be received by local receptors if all their food and water were sourced from the locality where the deposition of dioxins, furans and dioxin like PCBs is predicted to be the highest. |
| Concern that this Decision Document is not detailed enough | We are satisfied that the Decision Document contains sufficient information and addresses all necessary aspects comprehensively. |
| **Comments about the consultation** | |
| Concern that the opinions of local people have not been taken into account | We consider that our public consultations have been extensive and effective, and the responses received have been considered and the main points summarised in this section of this decision document. |

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| Concern that the consultation was not in line with the Aarhus Convention | As explained in Section 2.2 of this Decision Document: We carried out consultation on the Application in accordance with the EPR, our statutory PPS and our own internal guidance RGS Note 6 for Determinations involving Sites of High Public Interest. We consider that this process satisfies, and frequently goes beyond the requirements of the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, which are directly incorporated into the IED, which applies to the Installation and the Application. |
| Concerns that not all comments submitted have been addressed in the Decision Document | We have not ignored previously submitted comments. We review all comments in line with our public participation statement. For incineration applications we often receive a very large number of consultation responses and not all of these are relevant to our determination. It is not possible or necessary to include word for word every comment that we receive. All consultation comments are considered, and the decision document includes a brief summary of the key issues raised from the consultation. |
| A number of concerns raised that responses were not received and this led to us reopening the consultation | This was not the case, the decision to reopen the consultation was due to concerns about access rather than a problem with us receiving responses. We originally consulted on our draft decision from 12 July– 11 August 2024. However, we received correspondence that one of the links given in the Briefing Note wasn't working correctly. We therefore took the decision to reopen the final consultation on our draft decision. We reassured the public at the time that if they had already responded to the consultation that closed on 11 August we would have received their comments and there was no need for them to re-submit their response. |

d) Representations on issues that do not fall within the scope of this permit determination

A number of issues were raised that were outside the scope of the determination. Some of these have been covered above and some others are summarised here.

| Brief summary of issues raised: | Environment Agency comment: |
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| Multiple questions and concerns regarding the planning process. Including the outcome of the planning appeal, public enquiry and Secretary of State decision. | We are unable to answer questions regarding the planning process and outcomes as this does not fall within our remit.<br><br>We are responsible only for the determination of the Environmental Permit. |

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| Land, including buildings, walls and habitat, has already been cleared without consent | This may be a matter for the planning process and not something we can consider through environmental permitting. We are responsible only for the determination of the Environmental Permit. |
| This installation is not in line with Government Net Zero targets, or other ambitions to reduce emissions. | We are responsible only for the determination of the Environmental Permit. The Government's current waste strategy does not exclude waste incineration with energy recovery as an acceptable waste management option for unavoidable, unrecyclable waste. |
| The site should be used to generate renewable energy such as from wind or solar. Or that different sources of power should be used, such as electric generators. | We are responsible only for the determination of the Environmental Permit. We have to determine the application made to us and decide whether incineration is acceptable in this location. |
| More investment should be made into recycling schemes | We are responsible only for the determination of the Environmental Permit. |
| Concerns about Portland Port | Portland Port are not the Applicant/ Operator. Therefore, this falls outside the scope of the permit determination. |
| Waste incinerator projects often lock local councils into restrictive long-term contracts with private waste operators | Local waste management arrangements are a matter for the local authority. |
| The incinerator is not in line with the Dorset Waste Plan | Local waste management arrangements are a matter for the local authority. |
| Concerns that the installation will undo the legacy of the 2012 Olympic Games in the area | Our remit relates to whether the incinerator can operate in an environmentally acceptable manner or not. |
| Other Countries, including Scotland and Wales have instigated a moratorium on future waste incinerators – the same should be done in England | The Environment Agency does not have the power to call a moratorium. Our remit relates to whether the incinerator can operate in an environmentally acceptable manner or not. |