NORTH HORSHAM PARISH COUNCIL
PLANNING, ENVIRONMENT AND TRANSPORT COMMITTEE
THURSDAY 26th MAY 2022 AT 7.30pm
AT ROFFEY MILLENNIUM HALL

CLERK'S REPORT TO BE READ IN CONJUNCTION WITH THE AGENDA
Numbers relate to those on the agenda.

3. Public Forum

The Public Forum will last for a period of up to 15 minutes during which members of the public may put questions to the Council or draw attention to relevant matters relating to the business on the agenda. Each speaker is limited to 3 minutes. Business of the meeting will start immediately following the public forum or at 7.45pm whichever is the earlier.

5. Declaration of Interests

Members are advised to consider the Agenda for the meeting and determine in advance if they may have a **Personal, Disclosable Pecuniary or Other Registrable Interest** in any of the Agenda items. If a Member decides they do have a declarable interest, they are reminded that the interest and the nature of the interest must be declared at the commencement of the consideration of the Agenda item; or when the interest becomes apparent to them. Details of the interest will be minuted.

If the interest is a **Disclosable Pecuniary Interest**, Members are reminded that they must take no part in the discussions of the item at all; or participate in any voting; and must withdraw from the meeting chamber, unless they have received a dispensation.

Where you have an **Other Registrable Interest** (which is not a Disclosable Pecuniary Interest), Members are reminded that they must withdraw from the meeting chamber after making representations or asking questions.

7. Chairman's Announcements

1. Lists of planning compliance cases received from Horsham District Council (HDC) since 28th April 2022 has been circulated to members of the Planning Committee.

2. A resident of Denne Neighbourhood Council (DNC) has expressed concerns for road safety due to the on road parking at the end of Pondtail Road, by Chestnut Gardens. The sight lines for road users upon exiting Chestnut Gardens is impact by the parked cars. The resident is looking to extend the double yellow lines further along the road. It has been suggested to pursue a Traffic Regulation Order application and to contact West Sussex County Council (WSCC) and DNC.

3. Notification of changes to Biffa's operation and waste receiving hours over, and following, the June 2022 Jubilee bank holiday weekend has been received. This has been agreed with by WSCC:
    - Thursday 2nd June – both Crawley Borough Council as well as Horsham District Council will be allowed to deliver waste from 07:00 – 15:00
    - Friday 3rd June – Horsham District Council will be allowed to deliver waste from 07:00 – 15:00
    - Saturday 4th June – normal Saturday operating hours 07:00 – 12:00
    - Saturday 11th June – Crawley Borough Council will be allowed to deliver waste from 07:00 – 15:00

4. WSCC has provided an updated regarding 'Special Project' status for the scheme to fix the inconsistent HGV signs around Horsham Enterprise Park's locality, include a dedicated HGV sign posted route for the Horsham Enterprise Park, and to inform Satellite Navigation companies of any regulatory changes. The scheme is going to be included alongside the Community Highway Scheme programme for 2022/2023. It will be submitted to a long-term consultant (WSP) for feasibility and design in 2023/24, with implementation in 2024/25.

8. Street Naming in the development north of Horsham

HDC has received a list of proposed road names (Annex 1) for the Mowbray site, located on the north of Horsham development. HDC has stated they do not want to use names of people as road names: HDC will refuse Sonia Bartlett Place but will agree to Bartlett Place.

9. A24 Horsham to Dorking corridor joint Feasibility Study

Cllr R. Turner attended a webinar meeting on 12th May 2022 regarding Surrey County Council and WSCC's joint feasibility study of potential improvements to the A24 Horsham to Dorking corridor. Attendees feedback was requested by 13th June 2022. Cllr R. Turner is producing feedback on behalf of the Planning, Environment and Transport Committee which will be circulated to Committee members and available at the meeting.

10. WSCC roadworks procedures (Temporary Traffic Regulation Orders) and Consultation Policy

Cllr P. Burgess has highlighted concerns regarding WSCC roadworks procedures/consultation policy, following the lack of consultation and late notice for the ceasing of right turns from Rusper Road onto A264. Cllr P. Burgess has been notified that WSCC do not consult on these matters.

The Parish Office has requested WSCC for further information regarding their procedures and consultation process.

11. Department for Levelling Up Housing and Communities: Technical consultation on street naming

On the 9th May 2022 the Parish Council was informed by the Society of Local Council Clerks that the Government's Department for Levelling Up Housing and Communities is undertaking a Technical consultation on street naming. The Consultation ends on 22nd May 2022. The Parish Council has requested an extension for a response however, a response is yet to be received.

The current system for street naming relies upon three Acts which date from the early 20th century and create nationally inconsistent and unclear procedures for changing street names. The government is considering legislation to ensure there is a common requirement across England for votes on proposed changes of street names and is interested in views on how this would be implemented.
The consultation can be viewed online here:
https://www.gov.uk/government/consultations/technical-consultation-on-street-naming/technical-consultation-on-street-naming

12. Recycling, Recovery and Renewable Energy and Ancillary Infrastructure (Incinerator) at the former Wealden Brickworks

The Environment Agency (EA) has considered Britaniacrest's Environmental Permit application with its associated documents and is considering permitting the variation. See Briefing Note Update (Annex 2) and the Decision Document (Annex 3) attached. The EA have written a draft permit variation document and a draft decision document and opened them for consultation. The consultation ends on 26th June 2022.

The Parish Council's response to the Environmental Permit application is attached (Annex 4).

13. Novartis update and Parish Liaison Meeting

At the Annual Meeting of the Parish held on 5th May 2022 a West Sussex County Cllr A. Baldwin provided an update: '*it was reported that Muse are now progressing with the design of the phase one residential, and that the planning application will be submitted for validation by Feb 2023. At that time, Muse will also submit an overarching water neutrality statement that will allow them to progress the planning application. Muse have also commissioned a water neutrality study, and the initial findings should be made available in July 2022'*.

The next Parish Liaison meeting is in the process of being scheduled for the month of July 2022. Once a date has been confirmed participants will be informed and invited.

14. Planning Appeals

There are no Planning Appeals.

Annex 1

Name	Origin	Source	Road Name Proposal
Aldridge	Robert Aldridge, Surveyor and builder lived at 60 West Street. 1881 Census	West Sussex County Records Office	Aldridge Close
Andred	"Andred" a Saxon leader who had his name represented as part of The Weald. In 1018 The Weald is referred to Andredsweald. Edge refers to the fact that Horsham sits on the edge of the weald.	Anthony Poulton-Smith, West Sussex Place Names. Published in 2012	Andred's Edge
Arundel	To remember the former rape system introduced by the Normans. Plus Horsham has a number of historical connections with Arundel, this includes the river, the Dukes of Norfolk and the Howard family.	Victoria County History	Arundel Drive
Bartlett	Former deputy headteacher of Millais School who sadly died in a car accident.	Personal Communication	Sonia Bartlett Place
Bennett	Helena Bennett was a wellknown Horsham woman who is buried in St. Mary's Churchyard, facing Mecca because of Islamic faith.	Horsham Museum	Bennett Avenue
Booker	John Booker, a brick maker and builder lived at Fivens Green, North Heath Lane. 1911 Census. Constructed houses in Pondtail Road, Newlands Road, Worthing Road & Warnham Roads	West Sussex County Records Office	Bookers Coppice
Bramber	To remember the former rape system introduced by the Normans	Victoria County History	Bramber Way
Braun	Hugh Braun discovered the site of the motte & bailey castle. He saw the ancient landmarks from the railway. The date of discovery was in 1935.	Signboard at motte & bailey in Lemmington Way	Braun's View
Burstow	Edward Burstow was a well known Horsham celebrity. Who wrote memoirs of Horsham.	Victoria County History	Burstow Lane
Castle	The motte & bailey would have looked over the countryside. Surrounded by meadows.	Victoria County History	Castlemeads

Castle Minnis	"Castle" is the name of a local field and to represent the old Norman wooden motte & bailey. "Minnis" A piece of rising ground.	Castle from Tithe Map 1844 & Minnis from The	Castle Minnis
Chichester	To remember the former rape system introduced by the Normans	Victoria County History	Chichester Way
Coombewell (Street)	Now North Street, first recorded as Comewell. Changed to North Street in 1524.	Victoria County History	Coombewell Gardens
Crockhurst	An old manor name within the Horsham district	English Place Names Society	Crockhurst
De Chernella	William De Chernella was nephew of William Debroase. Who occupied the castle site at Chennells Brook. This is where the name Chennell comes from. Which gave its name to the brook and the farm.	Signboard at motte & bailey in Lemmington Way	Chernella Way
Dewdney	Edward Dewdney was Horsham's first scout leader. He foundered 1st Horsham in 1908. Born 1873 Died 1930	1st Horsham Our Own Story, Hugh	Dewdney Road
Dragon	The mythical beast that stalks the forest of St. Leonards	Slyfield,G.N. : Legends of St. Leonards Forest, *SCM Vol. 28, No. 2 1954*	Dragon's Keep
Etheridge	Edward Etheridge, lived at Charlotte Villas in Brighton Road. Then moved to Arthur House in Arthur Road according to the 1871 and 1881 census. Builder & Architect	West Sussex County Records	Etheridge Gardens
Grandford	Named after the house in the Carfax where Cool & Haddock are now based. An old street which was constructed in 1903 and demolished in 1970 to make way for Swan Walk & Albion Way	Horsham OS Map 1937	Grandford Way
Hastings	To remember the former rape system introduced by the Normans	Victoria County History	Hastings Avenue
Head	Stephen Head was a much loved history teacher at Tanbridge. Sadly passed away after a car accident.	Personal Experience	Stephen Head Place

Hillman	Henry Murrell worked with James Hillman at times as a company known as Hillman & Murrell, already mentioned on this group before. Henry Murrell lived in Crawley Road and James Hillman in Spencers Road. 1881 Census (Builders)	WSRO & Horsham Museum	Hillman Drive
Holbrook	Named after the house of Holbrook	Victoria County History	Holbrook Park
Hoo	Thomas Hoo of Roffey. Memorial dedicated in St. Mary's Church	Victoria County History	Hoo Gardens
Horse	Horsham used to hold markets where Horses were sold. Could be the name of a commercial area of the new development.	Victoria County History	Horse Market
Hughes	Dr Anna Hughes was a celebrated Horsham Historian who wrote a number of local books. Including the book about the motte & bailey castle at Chennells Brook.	Horsham Museum	Hughes Road
Hunt	After being a defensive motte & bailey castle. The building was converted into a hunting lodge.	Signboard at motte & bailey in Lemmington Way	Hunters Meadow
Lewes	To remember the former rape system introduced by the Normans. Horsham replaced Lewes as the county prison.	Victoria County History	Lewes Way
Linden	Named after a street which stood inbetween County Hall North and Linden House. Demolished in 1971 to make way for Albion Way	Horsham OS Map 1937	Linden Grove
Manor Forstall	"Manor" represents the old manor of Hawkesbourne. "Forstall" The house and home buildings of a farm with waste land attached.	Victoria County History & Forstall from The	Manor Forstall
Moatmead	One field named this according to Tithe Map of 1844.	Tithe Map of 1844	Moatmead
Murrell	Henry Murrell worked with James Hillman at times as a company known as Hillman & Murrell, already mentioned on this group before. Henry Murrell lived in Crawley Road and James Hillman in Spencers Road. 1881 Census (Builders)	West Sussex County Records Office	Murrell Gardens
Nightingales	Wellknown builder in Horsham during the 1920s and 30s.	West Sussex	Nightingales

Nutham	An old manor within the Horsham district close to Rusper	Victoria County History & English	Nutham Fields
Owlscastle	Owlscastle may have been one of the hiding places of the *owlers* who engaged in Surrey and Kent in the trade of smuggling wool or sheep out of England (*v.* SAC 24, 141 and NED *s. v* .). For another possibility, *v.* IPN 149, but it should be noted that no archaeological remains have been found here.	English Place Names Society	Owlers Mews
Pannett	William Pannett lived at No.1 Station Road. Wellknown for a terrace of houses bearing his name in Oakhill Road. 1881 Census (Builder)	West Sussex County Records	Pannett Road
Peters	Peter Peters was a partner in a building company, he lived in Percy Road. 1881 Census. (The name is useful to know, but some what repeated) (Builder). He operated in Keymer near Burgess Hill known for its brick and pottery works.	Horsham Museum, WSRO & Sussex Gazetteer of	Peters Way
Pevensey	To remember the former rape system introduced by the Normans. Where Saxons invaded Britain for the first time.	Victoria County History	Pevensey Drive
Potter	Henry Potter with his son Albert (trainee bricklayer) at No.3 Rushams Road. 1881 Census. His company built the Collyers School in Hurst Road in 1892.	West Sussex County Records	Potter Lane
Rowlands	Henry Rowland, was a builder employing 20 men and 3 boys as part of his business. Relation to Charles Rowland his son. They both lived at No. 47 North Street. 1881 Census. His company built Horsham Hospital in 1892 and 1922.	Friends of Horsham Hospital	Rowlands Walk
Rusper Nunnery		Victoria County History	Nunnery Walk
Scarfolkes (Carfax)	Old spelling of the Carfax	Victoria County History	Scarfolkes Mews
Sharp	George Sharp, builder and contractor employing 30 men. Lived at The Cottage in Bedford Road. 1881 Census	West Sussex County Records Office	Sharp Lane
South	Ivy South was the first female cub leader in Horsham with 1st Horsham Group.	1st Horsham Our Own Story, Hugh	South Walk
St. Edmund's	Horsham Market Day on St. Edmund's Day	Victoria County	St. Edmund's Walk

St.Thomas	The July fair, sometimes called St. Thomas's fair, (fn. 270) continued to be held in Carfax between the 16th century and the 19th. (fn. 271) In 1784 and 1831 it was chiefly for sheep. (fn. 272) As a borough fair, its tolls were paid to the bailiffs and burgesses, later called the corporation. (fn. 273) After the latter's demise in 1835 the last borough beadle continued to receive them for his own use, but despite their trifling value (fn. 274) the duke of Norfolk in 1877 claimed them as successor to the lords of the borough. (fn. 275) At the change of the calendar in 1752 the date of holding the fair was moved to 18 July. By the end of the 18th century the fair extended between that date and the following Saturday, so that it could last up to eight days. In the 19th century, however, only the first day was devoted to business, the rest being merely a pleasure fair. (fn. 276)	Victoria County History	St. Thomas Park
The Grinstead	The green place. "Grin" in Saxon means green and stead means farm or settlement.	English Place Names Society	The Grinstead
The Rookery	An old name for the Bishopric, where the markets were held. The last one was held in 1913	Victoria County History	Rookery Crescent
Upcott	Dorothy Upcott took over the Horsham Scout Troop in World War 1 when the scouts went off to fight. The Upcott family were resident at Christ Hospital from 1902-1919. The daughter did not have much to do, so she was given the scout troop along with a Miss Henderson.	1st Horsham Our Own Story, Hugh Twiddle. The Upcotts of Christ	Upcott Walk
Welsh Marches	Horsham has a long connection of history in Wales. Welsh cattle was sold in the town in the past at the markets.	Victoria County History	Marches Way
Wicken's Cross	Junction of East Street, Park Place and Denne Road. Where the old settlement of Horse hamm might have been situated.	Victoria County History	Wickens Chase
Wickersham	A well known firm in Horsham which was located on the site where Park Surgery is now. The road led from London Road up to a junction with Madiera Avenue. Wickersham Lane was the original name of the street where the business was based.	Victoria County History	Wickersham Lane

Annex 2

Briefing 9: Wealden Works Recycling, Recovery and Renewable Energy Facility, Langhurstwood Road, Horsham, RH12 4QD

Variation application number: EPR/CB3308TD/V002 16 May 2022

Summary

- Britaniacrest Recycling Limited have applied for a permit variation from us to add mechanical sorting and an energy recovery facility to its existing site off Langhurstwood Road, Horsham.
- We closed our first public consultation on this permit variation application on 2 August 2021 and have been assessing the documents since then.
- We have carefully considered all of the documents provided to us by Britaniacrest Recycling Limited, as well as your consultation comments. We cannot find any reason that would cause us to refuse the permit variation application.
- We think we may issue the permit variation to Britaniacrest Recycling Limited; this is called a 'minded to' decision.
- We have written a draft permit variation document and a draft decision document. We would like you to read them. Please send any comments by 26 June 2022 11.59pm.
- We will make our final decision once we have reviewed your comments.
- We received over 130 comments to our first consultation. We have addressed the relevant issues raised in our draft decision document.

Introduction

We let you know on 17 August 2021 that our first public consultation had closed. You can view the documentation and publicly available comments here: RH12 4QD, Britaniacrest Recycling Limited, EPR/CB3308TD/V002: environmental permit consultation - Environment Agency - Citizen Space (environment-agency.gov.uk). We have reviewed all the comments you sent us, along with the documents submitted by Britaniacrest Recycling Limited, and have considered all the evidence very carefully.

As part of this consideration, we have explored issues of concern, such as noise. Concerns like these caused us to ask for more information from Britaniacrest Recycling Limited, in the form of Schedule 5 notices, and when we received this information we made it available to you on our Citizen Space consultation portal.

We are now satisfied we have all the information we think we need and cannot find any reason to refuse this permit variation application. We are therefore 'minded to' issue this permit variation to Britaniacrest Recycling Limited. This means we think we may issue the permit variation based on what we know so far, but we have yet to make a final decision. Before we do, we would like you to read our draft decision document and let us know if there is any further information you would like us to consider.

The draft documents

We have written two documents: the draft decision document and the draft permit variation. The draft decision document explains our thought process and how we have taken on board the comments you sent us in the first consultation. The draft permit variation outlines the conditions the operator would have to meet. In these documents we frequently say 'we have decided'. This gives the impression that our mind is already made up, but as we have explained above, we have not yet done so. The language enables them to become the final documents with no more re-drafting than is necessary.

How have we reached our decision so far?

We would only issue a permit variation if we are satisfied that Britaniacrest Recycling Limited has the appropriate systems in place to operate the energy recovery facility without causing harm to the environment or human health. We have checked that the operator will use appropriate preventative measures to monitor and control issues such as dust, noise or particulate emissions, so that no significant pollution is caused. In doing this we have reviewed how the site will be operated, and whether it will have any impact on people living nearby and natural habitats. We have also consulted with a wide number of partner organisations and the responses we received are included within the draft decision document.

We understand that this may not be the news you were hoping for. We are bound by the requirements of the Regulator's Code to grant permits and issue permit variations to operators, provided we cannot find any evidence that the building or operation of such a site may cause significant harm to the environment or to human health.

How can you comment on the consultation?

Our second consultation is now open and we invite you to comment on the draft decision document and draft permit variation. These documents can be found on https://consult.environment-agency.gov.uk/psc/rh12-4qd-britaniacrest-recycling-limited-draft-dec

Copies are also available at Horsham Library, Lower Tanbridge Way, Horsham, RH12 1PJ. Call 01403 224353 to make an appointment to view the documents.

Responses can be made via the website or by email to pscpublicresponse@environment-agency.gov.uk

If you are unable to submit your comments in this way, you can post them to: Environment Agency Permitting and Support Centre, Environmental Permitting Team, Quadrant 2, 99 Parkway Avenue, Parkway Business Park, Sheffield S9 4WF marked ' Variation application number: EPR/CB3308TD/V002'.

We must receive your comments by 11:59pm on 26 June 2022

Please note that our permitting process does not take into account factors such as off-site vehicle movements, operating hours, visual impact and whether this is an appropriate location for the activity, as these are the local council's responsibility to regulate.

What happens next?

We will consider all relevant comments we receive during this second consultation. Your comments may affect our decision so we will make our final decision once the consultation has closed and we will use your comments to inform us. You can let us know if you would like your comments to be made public when you submit your responses on our Citizen Space consultation portal, or in the text of your email or letter.

Your comments will need to provide us with new information that would cause us to reconsider our decision. The information we are already aware of is outlined and considered in the draft decision document. If no new information is received, we will issue the permit variation to Britaniacrest Recycling Limited after the close of the consultation.

For general information about our permitting process please see our Citizen Space page https://consult.environment-agency.gov.uk/psc/rh12-4qd-britaniacrest-recycling-limited/ or www.gov.uk/topic/environmental-management/environmental-permits

Annex 3

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

Consultation on our decision document recording our decision-making process

The Permit Number is: EPR/CB3308TD

The Permit Variation Number is: EPR/CB3308TD/V002

The Applicant / Operator is: Britaniacrest Recycling Limited

The Installation is located at: Wealden Works 3Rs Facility, Former Wealden Brickworks, Langhurstwood Road, Horsham, West Sussex, RH12 4QD

Consultation commences on: 16/05/2022

Consultation ends on: 26/06/2022

What this document is about

This is a draft decision document, which accompanies a draft permit.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the draft permit we are proposing to issue 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.

The document is in draft at this stage, because we have yet to make a final decision. Before we make this decision we want to explain our thinking to the public and other interested parties, to give them a chance to understand that thinking and, if they wish, to make relevant representations to us. We will make our final decision only after carefully taking into account any relevant matter raised in the responses we receive. Our mind remains open at this stage: although we believe we have covered all the relevant issues and reached a reasonable conclusion, our ultimate decision could yet be affected by any information that is relevant to the issues we have to consider. However, unless we receive information that leads us to alter the conditions in the draft Permit, or to reject the Application altogether, we will issue the Permit in its current form.

In this document we frequently say “we have decided”. That gives the impression that our mind is already made up; but as we have explained above, we have not yet done so. The language we use enables this document to become the final decision document in due course with no more re-drafting than is absolutely necessary.

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/CB3308TD/V002. 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 variation is EPR/CB3308TD/V002. We refer to the proposed permit variation as “the **Permit Variation**” in this document.

The Variation Application was duly made on 08/04/2021.

The Applicant is Britaniacrest Recycling Limited. We refer to Britaniacrest Recycling Limited as “the **Applicant**” in this document. Where we are talking about what would happen after the Permit is granted (if that is our final decision), we call Britaniacrest Recycling Limited “the **Operator**”.

Britaniacrest Recycling Limited’s proposed facility is located at Wealden Works 3Rs Facility, Former Wealden Brickworks, Langhurstwood Road, Horsham, West Sussex, RH12 4QD. We refer to this as “the **Installation**” in this document.

How this document is structured

- Glossary of acronyms
- Our proposed decision
- How we reached our decision
- The legal framework
- The Installation
    - Description of the Installation and general issues
    - The site and its protection
    - Operation of the Installation – general issues
- Minimising the installation's environmental impact
    - Assessment Methodology
    - Air Quality Assessment
    - Human health risk assessment
    - Impact on Habitats sites, SSSIs, non-statutory conservation sites etc.
    - Impact of abnormal operations
- Application of Best Available Techniques
    - Scope of Consideration
    - BAT and emissions control
    - BAT and global warming potential
    - BAT and POPs
    - Other Emissions to the Environment
    - Setting ELVs and other Permit conditions
    - Monitoring
    - Reporting
- Other legal requirements
    - The EPR 2016 and related Directives
    - National primary legislation
    - National secondary legislation
    - Other relevant legal requirements
- Annexes
    - Application of the Industrial Emissions Directive
    - Pre-Operational Conditions
    - Improvement Conditions
    - Consultation Reponses

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
DAA	Directly associated activity – Additional activities necessary to be carried out to allow the principal activity to be carried out
EAL	Environmental assessment level
ELV	Emission limit value
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
HW	Hazardous waste
IBA	Incinerator Bottom Ash
IED	Industrial Emissions Directive (2010/75/EU)
I-TEF	Toxic Equivalent Factors set out in Annex VI Part 2 of IED
I-TEQ	Toxic Equivalent Quotient calculated using I-TEF
LCV	Lower calorific value – also termed net calorific value
LOI	Loss on Ignition

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
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
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)
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
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

1 Our proposed decision

We are minded to issue the varied and consolidated 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 draft 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.

2 How we reached our draft decision

2.1 Receipt of Application

The Application was duly made on 08/04/2021. 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 Public Participation Statement (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 between 13/06/2021 and 02/08/2021, which contained all the information required by the IED, including telling people where and when they could see a copy of the Application. We also placed an advertisement in the West Sussex County Times. We also sent a briefing note confirming that the Application was available to comment on to our stakeholders.

We made a copy of the Application and all other documents relevant to our determination (see below) available to view on our Citizen Space page. Anyone wishing to see a hard copy of these documents could do so at Horsham library. 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 six week period.

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

- Public Health England
- Director of Public Health
- Health and Safety Executive
- Food Standards Agency
- Horsham District Council
- Historic England
- South Downs National Parks 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.

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 draft 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 23/08/2021 and 16/02/2022. A copy of each information notice, the response received from the Applicant and associated briefing notes were

placed on our public register and on the Citizen Space page on which the original Application was advertised.

Having carefully considered the Application and all other relevant information, we are now putting our draft decision before the public and other interested parties in the form of a draft Permit, together with this explanatory document. As a result of this stage in the process, the public has been provided with all the information that is relevant to our determination, including the original Application and additional information obtained subsequently, and we have given the public two separate opportunities (including this one) to comment on the Application and its determination. Once again, we will consider all relevant representations we receive in response to this final consultation and will amend this explanatory document as appropriate to explain how we have done this, when we publish our final decision.

3 The legal framework

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

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

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

We consider that, if we grant the variation to 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 Energy Recovery Facility is an activity listed in Part 1 of Schedule 1 to the EPR and also an IED activity and therefore is subject to both sets of legislation:

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.

The materials recycling facility can be considered a Part A(1) activity or part of the incineration activity itself where the operating proposal is that it is solely in place to serve the on-site incineration activity. Some elements of the materials recycling facility relate to processing of waste which is not for input to the incineration activity but to be recovered off site. Therefore, a separate waste processing activity is included within the permit.

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.

The Waste Transfer Station, which is also on the site, remains a waste operation and is not part of the waste incineration definition because the transfer and bulking of waste is not associated with the incineration activity.

Together, the listed and directly associated activities comprise the Installation. The Waste Transfer Station or waste recycling activity are not part of the installation but together the installation and waste operations comprise a Regulated Facility.

4.1.2 <u>The Site</u>

The Site is located at the former Wealden Brickworks site off Langhurstwood Road, approximately 900 metres to the north west of Horsham and 1.3 km to the north east of the centre of Warnham. The site lies within the administrative areas of West Sussex County Council and Horsham District Council.

The National Grid reference for the site is TQ 17122 34331.

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 at 4.3.

4.1.3 What the Installation does

The Applicant has described the facility as an Energy Recovery Facility. 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 key features of the Installation can be summarised in the table below.

Waste throughput, Tonnes/line	230,000 tonnes /annum	Throughput in tonnes/hour (tph) Minimum: 17.3 tph Average: 24 tph Maximum: 34.5 tph
Waste processed	Municipal Waste (MSW), Commercial Waste (CW)	
Number of lines	1	
Furnace technology	Grate	
Auxiliary Fuel	Gas Oil	
Acid gas abatement	Dry	Hydrated lime
NOx abatement	SNCR	Ammonia or urea: To be confirmed at commissioning
Reagent consumption	Auxiliary Fuel 200 te/annum Ammonia/Urea : 1,280 te/annum Lime/Other : 3,600 te/annum Activated carbon: 90 te/annum Process water: 24,800 te/annum	
Flue gas recirculation	To be confirmed at the final design stage	
Dioxin abatement	Activated carbon	
Stack	TQ 17122 34331	
	Height, 95 m	Diameter, 2.0 m
Flue gas	Flow, 48.4 Nm^3/s	Velocity, 21.2 m/s
	Temperature 140°C	
Electricity generated	24.4 MWe	195,200 MWh
Electricity exported	21.3 MWe	170,400 MWh
Steam conditions	Temperature, 429°C	Pressure, 6370 kPa
Waste heat use	No CHP scheme in place from the outset. Primary and secondary air will be preheated using steam to increase plant efficiency.	

4.1.4 Key Issues in the Determination

The key issue arising during this determination was air quality and noise and 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 is accessed from a private shared estate road, which connects to the public highway of Langhurstwood Road. Langhurstwood Road links directly to the A264 approximately 750 m to the south.

The Site, as defined by the site boundary, comprises approximately 3.8 hectares (ha) of land within the former Warnham and Wealden Brickworks site, a 24.4 ha site. The site includes a large building formerly housing brick kilns, currently in use as a Waste Transfer Station/Materials Recycling Facility, surrounded by hardstanding and several smaller buildings.

The southern boundary of the Site is defined by the internal access road, beyond which lies the Weinerberger brickworks factory (also known as Warnham Brickworks). The London-Horsham railway line lies immediately to the west of the Site, beyond which there are mature tree belts and open countryside. The Warnham train station is located on the London-Horsham (via Dorking & Sutton) line approximately 300 m south of the Site.

The eastern boundary of the Site is defined by an internal access road, beyond which lies the Brookhurst Wood Mechanical and Biological Treatment (MBT) Facility, which is operated by Biffa under contract with West Sussex County Council. The MBT Facility commenced receiving waste in 2014 and covers approximately 5.6 ha of land. To the north of the MBT Facility lies an ecological habitat area, which has been established in accordance with Condition 8 of the planning permission for the MBT Facility.

Two ponds are located within dense scrub to the immediate north of the Site. The land to the immediate north and beyond the ponds is currently vacant and comprises several derelict former brickworks buildings.

Approximately 315m to the north of the Site boundary is located an Aggregate Treatment and Recycling Facility (ATRF). Further north and east of the ATRF is the recently active Brookhurst Wood Landfill Site, which covers an area of approximately 34 ha. The landfill had planning permission to receive waste until the end of 2016. However, a further planning application to extend the date for completion of restoration of the landfill until December 2023 has been approved.

The following habitats and conservation sites have been identified within the relevant screening thresholds:

Warnham Site of Special Scientific Interest (SSSI) 620 m north east of the site.

In addition to these designated sites there are 17 non-statutory sites recorded within 2 km of the site.

There will be no change to the existing permit boundary as a result of this variation application

4.2.2 Proposed site design: potentially polluting substances and prevention measures

The table below identifies the storage tanks and containment for the main raw materials and wastes produced on site by the operations.

Waste	Expected Amount	Storage	Disposal/Recovery Route
Bottom Ash (including boiler ash)	48,400 tpa	690 m^3 ash room (flat floor)	Bottom ash will be sent to an offsite facility where metals will be extracted, and bottom ash will be sent off for re-use within aggregates.
Air Pollution Control Residues	8,160 tpa	400 m^3 APC storage silo	Disposal to landfill, following treatment, or recovery if feasible.
Oversized material (including PVC)	600	36.8 m^3 container	Transfer off-site to a suitable disposal/recovery facility
Metals	8,000	70 m^3 external covered bay	Sold to a third party for recovery/recycling.
Inert materials	10,000	70 m^3 external covered bay	Transfer off site to a suitable disposal/recovery facility.
Wood	2,000	70 m^3 external covered bay	Sold to a third party for recovery/recycling.
Sludge from process water pit	Variable	Process water pit	Tankered off site for disposal.

The incoming waste material storage bunkers will be constructed of impervious concrete and will be and subject to routine visual checks when waste volumes in the bunker are low and during annual routine maintenance shutdowns.

All process areas will be located on hard standing.

All bunds provided for chemical and oil storage tanks will be manually inspected to ensure they remain empty.

Bunds will all be designed to contain at least 110% of the contents of the largest storage tank or 25% of the total tankage, whichever is the greater and will be resistant to the material which they are designed to contain. Any rainwater accumulated within the bunds will be tested for pH and visible solids and oil. Should the tests indicate that there was no contamination; the clean rainwater would be discharged to surface water via the existing outfall. In the event that the water is found to be contaminated the waters be tankered for off-site disposal.

Underground structures will be limited to:

• the lower part of the bunker;
• the lower part of the boiler;
• site drains;
• drainage sumps; and
• incoming clean water systems.

The ERF bunker will be subject to integrity checks during commissioning and prior to accepting waste. During commissioning the underground surface drains and foul drains will be subject to integrity testing and will be certified as sound prior to the ERF operations commencing. These drains will subject to a testing and maintenance programme. The condition at that time will be confirmed by CCTV inspections and will subsequently determine the inspection frequency for further inspections.

The ERF is proposed to be built on land already covered by a site permitted under the Environmental Permitting Regulations. In the instance that the permit is at some point surrendered, the land would need to be returned to a satisfactory state based on the condition of the land prior to it being originally permitted. We have therefore not assessed any information on site condition at this moment in time as this is not relevant as a baseline. We have however, assessed the introduction of any new raw materials or wastes which could have a potential impact on the soil or groundwater to ensure that risk of contamination is prevented or where this is not possible, minimised.

Based on the measures included in the application we consider that the risk of pollution is low.

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. 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.

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 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.

During the determination concerns were raised about whether the Applicant was a competent Operator. This was based on the performance of Britaniacrest Recycling Limited with reference to both the operation of their existing site, the permit for which is being variation and also to their business model.

We regulate the existing site and do not have any fundamental concerns that would lead us to decide the Applicant was not competent.

The existing Waste Transfer Station on site is a Specified Waste Management Activity and therefore Technical Competence in the form of WAMITAB is required. This was already in place for this activity prior to the permit variation and therefore is not being assessed again.

The S5.1 activity including both the incineration activity and the materials sorting and materials recovery facility (see section 4.1.1 for further description) is not listed as Specified Waste Management Activity within EPR and therefore Technical Competence in the form of a WAMITAB certificate is not required.

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. We requested additional information through a Schedule 5 notice dated 16/02/2022 including clarification on maximum length and width of waste piles and bunker cleaning proposals.

We are satisfied that the information contained in the FPP and the additional information provided to address the points above combined with the information required through pre-operational condition PO10 will be adequate to meet our FPP guidance. Full design details about the firewater provision and containment design 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
Fuel 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 waste, coded by the

European Waste Catalogue (EWC) number, which the Applicant will accept in the waste streams entering the plant.

We requested additional information about a number of the waste codes proposed for input to the incineration process to ensure that they are suitable for incineration via a Schedule 5 notice dated 23/08/2021.

We had concerns that tyres were listed for incineration when these can be recycled. The Applicant confirmed that tyres are not in fact planned for incineration and therefore we removed the associated waste code from the proposed waste table associated with the incineration activity. Tyres are permitted to be accepted into the materials recycling or waste transfer station.

We had concerns that digestate was listed for incineration when this can be recycled. We did not consider that adequate information was provided in respect to handling and management of odour associated this waste type and therefore we have not included this waste type for acceptance in the permit.

We had concerns that several particularly dusty waste types were listed for input to the facility such as 10 01 01 and 10 01 15. We did not consider that adequate information was provided in respect to the handling and dust associated with these waste types and therefore we have not included this waste types for acceptance in the permit.

The application also included waste type 20 03 99. We do not include 99 codes unless these are required to cover a specific waste not covered elsewhere in the EWC list. The Applicant confirmed that this is not the case and agreed to removal of the code from the permit.

Asbestos will not be treated and will only be stored on site as part of the waste transfer station activity prior to onward transfer to another suitably licenced waste facility. We requested additional information on storage volumes in a Schedule 5 notice dated 16/02/22. In response the applicant confirmed that asbestos will be stored in a single skip on site with a maximum volume of 27m^3.

We have specified the permitted waste types, descriptions and where appropriate quantities which can be accepted for incineration at the installation in Table S2.3.

We are satisfied that the Applicant can accept the wastes contained in Schedule 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.

(iv) these wastes are unlikely to contain harmful components that cannot be safely processed at the Installation.

The incineration plant will take some municipal waste, which has not been source-segregated or separately collected or otherwise recovered, recycled or composted. Conditions 2.3.5 and 2.3.6 in the permit specify that separately collected fractions of waste can only be incinerated if:

- they are unsuitable for recovery by recycling; and
- incineration delivers the best environmental outcome in accordance with regulation 12 of the Waste (England and Wales) Regulations 2011.

We have limited the capacity of the Installation to 230,000 tonnes per annum.

The nominal design point for the ERF is 11.5 MJ/kg however the range of CVs that will be accommodated is between 7 – 15 MJ/kg. Similarly, the design throughput of the ERF is 24 tonnes per hour (tph) although the facility will accommodate waste throughputs between 17.3 tph and 34.5 tph.

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.

An existing waste transfer activity will remain in the permit. Several waste codes have been added to the permit for acceptance at the waste transfer station but we do not consider that these will change the level of risk associated with this element of the activity.

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 cogeneration 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 a number of measures that will be implemented at the Installation in order to increase its energy efficiency:

- the ERF will be designed and constructed to avoid uncontrolled air ingress;
- the boiler will be equipped with an economiser and superheaters to optimise thermal cycle efficiency without prejudicing boiler tube life;
- air pre heat is minimised by extracting secondary air form the highest and warmest point in the building, making use of natural warming of air;
- low grade heat will be extracted from the turbine and used to preheat combustion air in order to increase the combustion efficiency of the thermal cycle;
- the furnace section will be effectively insulated and lined to retain heat;
- boiler heat exchange surfaces will be cleaned on a regular basis to ensure efficient heat recovery
- optimisation of the ERF layout to avoid excessive transfer of materials; and
- a plant maintenance regime will be in place to maintain energy efficiency over time and reduce down time or outages.

The Application states that the specific energy consumption, a measure of total energy consumed per unit of waste processed, will be 107.83 kWh/tonne. The installation capacity is 230,000 tonnes per year and the total energy consumption is stated to be 3.1MWe. The calculation is based on an operation of 8,000 hours per year.

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 7 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 confirms 21.3 MW of electricity produced for an annual burn of 230,000 tonnes (excluding the parasitic load), which represents 9.3 MW per 100,000 tonnes/yr of waste burned (0.75 MWh/tonne of waste). The Installation is therefore at the top of the indicative BAT range.

The Applicant provided a calculation of the gross electrical efficiency and compared it to the BAT AEEL specified in BAT conclusions BAT 20.

The gross electrical efficiency was calculated as 31.8%.

The BAT AEEL for gross electrical efficiency is 25-35 for new plants.

The value calculated by the Applicant is in the upper half of the BAT range. In accordance with BAT 2 table S3.2 of the Permit requires the gross electrical efficiency to be measured by carrying out a performance test at full load.

The SGN 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.

Waste heat is used on site in the following ways:

- the boiler will be equipped with an economiser and superheaters to optimise thermal cycle efficiency without prejudicing boiler tube life;

- air pre-heat is minimised from extracting secondary air from the highest (which is also the warmest) point in the building, making use of natural warming of the air; and

- 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.

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 and provided a CHP-R assessment as part of their application, which showed there was potential to provide district heating to local businesses; suitable opportunities are being explored, though there are no firm commitments at this stage. There is provision within the design of the steam turbine to extract low-grade steam 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 have made comments about this to the planning authority in our role as a statutory consultee for the planning application.

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 submitted an R1 assessment with the application which had incorrect input data so we requested this to be updated via a Schedule 5 notice dated 16/02/2022.The response and updated information was received on 17/03/2022.

The Applicant has presented a calculation of the R1 factor (as defined under the WFD 2008). The R1 formula is a measure of the extent to which energy is recovered from incineration plant. The formula is:

$$R1 = (Ep – (Ef + Ei)) / (0.97 \times (Ew + Ef))$$

Where:

- Ep means annual energy produced as heat or electricity. It is calculated in the form of electricity being multiplied by 2.6 and heat for commercial use being multiplied by 1.1 (GJ/yr).
- Ef means annual energy input to the system from fuels contributing to the production of steam (GJ/yr).

- Ew means annual energy contained in the treated waste calculated using the net calorific value of the waste (GJ/yr).
- Ei means annual energy imported excluding Ew and Ef (GJ/yr)
- 0.97 is a factor accounting for energy losses due to bottom ash and radiation.

Where municipal waste incinerators can achieve an R1 factor of 0.65 or above, the plant will be considered to be a 'recovery activity' for the purposes of the Waste Framework Directive. Again, whether or not an installation achieves an R1 score of >0.65 is not a matter directly relevant to this determination. However, by being classified as a 'recovery activity' rather than as a 'disposal activity', the Operator could draw financial and other benefits.

The Applicant has determined an R1 value of 0.88 based on the design data. This will need to be reassessed and verified based on the operational data of the plant once available.

The R1 factor can only be determined from operational data over a full year. At application stage it is only possible to make a provisional assessment. Ep measures the energy recovered for use from the incinerator. This energy will have been recovered not just from the combustion of waste (Ew), but also from the combustion of the support fuel at start up and shut down and where required to maintain the 850 ºC combustion temperature (Ef). Ei is additional energy imported, which will primarily be electricity from the grid. These parameters will depend on the way in which the plant is operated, e.g., number of start ups and shut downs.

Note that the availability or non-availability of financial incentives for renewable energy such as the ROC and RHI schemes is not a consideration in determining this application.

(v) Choice of Cooling System

There are three main types of cooling systems commonly used at facilities generating energy from wastes. These are:

• once through sea or river water;

• evaporative cooling tower; and

• air cooled condenser.

The ERF will use the latter option. There are advantages and disadvantages in using each of these types of cooling system. The application confirms that the air-cooled system has been selected for the ERF for the following reasons:

• the site is not located in close proximity to an adequate supply of water;

• air cooled systems do not require the use of chemical treatment or biocides which evaporative systems do;

• there is no visible plume from air cooled systems; and
• there is no requirement for water input.

We accept that this choice of cooling system is BAT for this installation.

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

New thermal electricity generation installations with a total aggregated net thermal input of more than 20MW need to carry out a cost-benefit assessment (CBA) of opportunities for cogeneration (also known as combined heat and power) or supplying a district heating or cooling network when they apply for a new incineration activity.

The applicant submitted an Article 14 assessment with the application which was inadequate in several areas so we requested this to be updated via a Schedule 5 notice dated 16/02/2022.The response and updated information was received on 17/03/2022.

The applicant has carried out an assessment of the potential for operating the installation as a high-efficiency cogeneration installation and has considered heat loads within 15km of the proposed facility. They concluded the largest potential heat users are domestic comprising 92% of the total heat demand. The 'Land North of Horsham' is referred to in the application as a potential user. The search also identified a single large heat load recorded as 'unknown operator' just over 10km from the facility.

The operator has calculated that the Primary Energy Savings calculations are above 10% and that it is likely to be cost beneficial to operate in cogeneration mode if a user can be secured. At present the applicant confirms that a user has not been secured but that discussions have been held regarding the supply of heat from the facility to the proposed residential development and other potential users. Further investigation into this and reporting on progress relating to this is required as per section (vii) on permit conditions below.

(vii) 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., and Schedule 5, including consumption of lime, activated carbon and urea / 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. 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, air pollution control residues and recovered metals.

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. Table S3.3 specify limits for total organic carbon (TOC) of <3%. 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.

In order 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 S3.3 requires the Operator to carry out an ongoing programme of monitoring.

The Application states that metal fractions will be recovered from the bottom ash and sent for recycling. The Application also proposes that, where possible, bottom ash will be transported to a suitable recycling facility, from where it could be re-used in the construction industry as an aggregate.

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

No climate change adaptation risk assessment is required at this stage as this is only required for new bespoke permit applications.

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:

- Ambient Air Directive Limit Values
- Ambient Air Directive and 4th Daughter Directive Target Values
- UK Air Quality Strategy Objectives
- Environmental Assessment Levels

Where an Ambient Air Directive (AAD) Limit Value exists, the relevant standard is the AAD Limit Value. Where an AAD Limit Value does not exist, AAD 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 AAD limit values, AAD target and AQS objectives. In a very small number of cases, e.g. for emissions of lead, the AQS objective is more stringent that the AAD value. In such cases, we use the AQS objective for our assessment.

AAD target values, AQS objectives and EALs do not have the same legal status as AAD 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 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 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 exceedences 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 exceedences are considered likely, the application is subject to the requirement to operate in accordance with BAT.

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

If, as a result of reviewing 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 of air quality is set out in the following documents:

- Environmental Statement, Chapter 7, Air Quality and Odour, dated February 2018
- Air Quality Assessment of Abnormal Operations, dated September 2020; and
- Human Health Risk Assessment, dated September 2020.

The assessment comprises:

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

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the incinerator chimney and its impact on local air quality. The impact on conservation sites is considered in section 5.4.

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon local conservation sites and human health. These assessments predict the potential effects on local air quality from the Installation's stack emissions using the ADMS 5 dispersion model, which is a commonly used computer model for regulatory dispersion modelling. The model used 5 years of meteorological data collected at the weather station at Charlwood approximately 9km north-east of the facility between 2011 and 2015. The

impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling.

The BAT Conclusions for the Waste Incineration sector were published after the original air dispersion modelling was carried out and therefore an additional Appendix was submitted which considered the new BAT AELs. We also took this into account when assessing their impact assessment.

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)
- Second, they assumed that the Installation operates continuously at the relevant long-term or short-term ELVs, i.e., the maximum permitted emission rate.
- 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 drawn from data in the Waste Incineration BREF and are considered further in section 5.2.2.

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

- The Applicant has used the following public sources to establish background concentrations of pollutants for use in their air quality impact assessment:
- Defra maps, which show estimated pollutant concentrations across the UK in 1 km grid squares;
- Published results of local authority Review and Assessment studies of air quality and local monitoring; and
- Results published by national monitoring networks.

We carry out sensitivity analysis on meteorological data as part of determination. As a result of the sensitivity assessment we concluded that using a different set of metrological data would not have changed the conclusions of the air quality impact assessment.

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 impact assessment did not include Gaseous and vaporous organic substances, expressed as Total Organic Carbon (TOC) (usually expressed as benzene). We have conducted our own checks against the relevant Environmental Standard.

The impact assessment did not include ammonia (NH3) emissions as a parameter for assessment against human health. We have conducted our own checks against an assumed ammonia slip of 10 mg/Nm^3 (at 273K, 101kPa, 11% oxygen, dry).

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. Where the prediction is superseded by the updated Appendix taking the new BAT AELs into account we have used the updated figures.

The Applicant's modelling predicted peak ground level exposure to pollutants in ambient air and at discrete receptors. The tables below show the ground level concentrations.

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.

Assessment of Emissions to Air – non-metals

Pollutant	EQS / EAL		Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	µg/m³		µg/m³	µg/m³	% of EAL	µg/m³	% of EAL
NO_2	40	1	11.9	0.3	0.75	12.2	30.5
	200	2	23.8	3.5	1.8	27.3	13.7
PM_{10}	40	1	24	0.02	0.05	24.0	60.1
	50	3	24	0.1	0.20	24.1	48.2
$PM_{2.5}$	25	1	11	0.02	0.08	11.02	44.1
SO_2	50	1	1.57	0.1	0.20	1.67	3.3
	266	4	3.14	2.9	1.1	6.04	2.3
	350	5	3.14	2.3	0.66	5.44	1.6
	125	6	3.14	0.7	0.6	3.84	3.1
HCl	750	7	0.39	0.8	0.1066667	1.2	0.16
HF	160	7	2.46	0.1	0.06	2.56	1.6
CO	10000	9	250	4.6	0.05	255	2.5
PAH	0.00025	1	2.30E-04	1.20E-05	4.80	0.000242	96.8
NH_3	180	1	1	0.04	0.02	1.04	0.58
PCBs	0.2	1	6.44E-05	2.39E-10	0.00	0.00006	0.03
	6	10	6.44E-05	2.39E-10	0.00	0.00006	0.0
Dioxins			2.67E-08	1.60E-10		2.69E-08	

1 Annual Mean
2 99.79th %ile of 1-hour means
3 90.41st %ile of 24-hour means
4 99.9th ile of 15-min means
5 99.73rd %ile of 1-hour means
6 99.18th %ile of 24-hour means
7 1-hour average
8 Monthly average
9 Maximum daily running 8-hour mean
10 1-hour maximum

Assessment of Emissions to Air - metals

Pollutant	EQS / EAL		Back-ground	Process Contribution		Predicted Environmental Concentration	
	µg/m³		µg/m³	µg/m³	% of EAL	µg/m³	% of EAL
Cd	0.005	1	0.00025	0.0001	2.0	0.00035	7.0
Tl				0.0026		0.0026	
Hg	0.25	1	0.00247	0.0001	0.04	0.00257	1.03
	7.5	2	0.00247	0.0026	0.03	0.00507	0.068
Sb	5	1		0.0012	0.02	0.0012	0.02
	150	2		0.0285	0.02	0.02850	0.019
Pb	0.25	1	0.01124	0.0012	0.48	0.01244	4.98
Co			0.00012	0.0385		0.03862	
Cu	10	1	0.01553	0.0012	0.01	0.01673	0.167
	200	2	0.01533	0.0385	0.02	0.05383	0.027
Mn	0.15	1	0.00569	0.0012	0.80	0.00689	4.59
	1500	2	0.00569	0.0385	0.00	0.04419	0.0029
V	5	1	0.001	0.0012	0.02	0.0022	0.04
	1	3	0.001	0.0385	3.85	0.03950	3.95
As	0.006	1	0.00099	0.0012	20.00	0.00219	36.5
Cr (II)(III)	5	1	0.0043	0.0012	0.02	0.00550	0.110
	150	2	0.0043	0.0385	0.03	0.04280	0.0285
Cr (VI)[4]	0.0002	1		5.99E-07	0.30		
Ni	0.02	1	0.00088	0.0012	6.00	0.00208	10.4

1 Annual Mean
2 1-hr Maximum
3 24-hr Maximum
4 Arsenic EAL updated from 0.003µg/m³ to 0.006 µg/m³ during permit determination.
5 Blank cell in table for background levels indicates no local monitoring data available.

(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:

- Nitrogen dioxide, PM10, PM2.5, sulphur dioxide, hydrogen chloride, hydrogen fluoride, carbon monoxide, PCBs, ammonia, mercury, antimony, lead, copper, chromium II and chromium III.

Although the Applicant did not present an impact assessment for assessment of ammonia which could be generated by ammonia slip against human health standards they did include an assessment within the habitats risk assessment. We used the maximum modelled on the grid and compared with

the ES for human health. We consider that emissions of ammonia would be insignificant compared to the ES for human health.

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.

- PAHs, cadmium, vanadium, arsenic and nickel.

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

All emissions either screen out as insignificant or where they do not screen out as insignificant are considered unlikely to give rise to significant pollution.

For these emissions, the Applicant has argued that the process contribution to the Predicted Environmental Concentration is negligible. 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.

In any case, with respect to these pollutants, 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.

We have also carefully considered whether additional measures are required above what would normally be considered BAT in order to prevent significant pollution. Consideration of additional measures to address the pollution risk from these substances is set out in section 5.2.2.

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 less than 1% of the ES and 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 these substances to be BAT for the Installation.

(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.

Emissions of SO_2 can also be screened out as insignificant in that the short term process contribution is also <10% of each of the three short term ES values. Therefore we consider the Applicant's proposals for preventing and minimising the emissions of these substances to be BAT for the Installation.

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

The above tables show that for CO, the peak long term PC is less than 1% of the ES and 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 CO to be BAT for the Installation.

The Applicant did not model VOCs within their impact assessment so we carried out sensitivity checks used the ES for benzene. The daily EAL for benzene has recently changed to 30µg/m^3 so we took this into account in our assessment. From our sensitivity check we concluded that VOCs are unlikely to give rise to significant pollution in that the predicted environmental concentration is less than 100%. For this emission, we have carefully scrutinised the Applicant's proposals to ensure that they are applying the Best Available Techniques to prevent and minimise emissions of VOCs. This is reported in section 6 of this document.

The above tables show that for PCB emissions, the peak long term PC is less than 1% of the ES and the peak 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 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 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, except for PAHs. Even so, from the table above, the emission is not expected to result in the ES being exceeded.

Although the Applicant did not present an impact assessment for assessment of ammonia which could be generated by ammonia slip against human health standards they did include an assessment within the habitats risk assessment. The ammonia emission level assessed was based on a release concentration of 10 mg/m^3 as this level of emission is consistent with the operation of a well controlled SNCR NO_x abatement system.

We used the maximum modelled on the grid and compared with the ES for human health. We consider that emissions of ammonia would be insignificant compared to the ES for human health.

Whilst all emissions cannot be screened out as insignificant, the Applicant's modelling shows that the installation is unlikely to result in a breach of the EAL. The Applicant is required to prevent, minimise and control PAH and VOC emissions using BAT, this is considered further in Section 6. We are satisfied that PAH and VOC emissions will not result in significant pollution.

(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:

- Mercury, antimony, lead, copper, chromium II and chromium III and chromium VI.

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:

- Cadmium, vanadium, nickel and arsenic.

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

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. The nearest AQMA is in Crawly, over 9km from the proposed installation.

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

We take account of the views of national and international expert bodies. The gathering of evidence is a continuing process. Although gathering evidence is not our role we keep the available evidence under review. The following is a summary of some of the publications which we have considered (in no particular order).

An independent review of evidence on the health effects of municipal waste incinerators was published by **DEFRA** in 2004. It concluded that there was no convincing link between the emissions from MSW incinerators and adverse effects on public health in terms of cancer, respiratory disease or birth defects. On air quality effects, the report concluded “Waste incinerators contribute to local air pollution. This contribution, however, is usually a small proportion of existing background levels which is not detectable through environmental monitoring (for example, by comparing upwind and downwind levels of airborne pollutants or substances deposited to land). In some cases, waste incinerator facilities may make a more detectable contribution to air pollution. Because current MSW incinerators are located predominantly in urban areas, effects on air quality are likely to be so small as to be undetectable in practice.”

HPA (now PHE) in 2009 stated that “The Health Protection Agency has reviewed research undertaken to examine the suggested links between

emissions from municipal waste incinerators and effects on health. While it is not possible to rule out adverse health effects from modern, well regulated municipal waste incinerators with complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable".

In 2012 the UK Small Area Health Statistics Unit (SAHSU) at Imperial College was commissioned by Public Heath England (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 PM10 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.

PHE 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, PHE have further stated that 'PHE's position remains that modern, well run and regulated municipal waste incinerators are not a significant risk to public health, and as such our advice to you [i.e. the Environment Agency] on incinerators is unchanged.'

The **Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (CoC) issued** a statement in 2000 which said that "any potential risk of cancer due to residency (for periods in excess of 10 years) near to municipal solid waste incinerators was exceedingly low and probably not measurable by the most modern epidemiological techniques." In 2009, CoC considered six further relevant epidemiological papers that had been published since the 2000 statement and concluded that

“there is no need to change the advice given in the previous statement in 2000 but that the situation should be kept under review”.

Republic of Ireland Health Research Board report stated that “It is hard to separate the influences of other sources of pollutants, and other causes of cancer and, as a result, the evidence for a link between cancer and proximity to an incinerator is not conclusive”.

The **Food Safety Authority of Ireland (FSAI) (2003)** investigated possible implications on health associated with food contamination from waste incineration and concluded: “In relation to the possible impact of introduction of waste incineration in Ireland, as part of a national waste management strategy, on this currently largely satisfactory situation, the FSAI considers that such incineration facilities, if properly managed, will not contribute to dioxin levels in the food supply to any significant extent. The risks to health and sustainable development presented by the continued dependency on landfill as a method of waste disposal far outweigh any possible effects on food safety and quality.”

Health Protection Scotland (2009) considered scientific studies on health effects associated with the incineration of waste particularly those published after the Defra review discussed earlier. The main conclusions of this report were: “(a) For waste incineration as a whole topic, the body of evidence for an association with (non-occupational) adverse health effects is both inconsistent and inconclusive. However, more recent work suggests, more strongly, that there may have been an association between emissions (particularly dioxins) in the past from industrial, clinical and municipal waste incinerators and some forms of cancer, before more stringent regulatory requirements were implemented. (b) For individual waste streams, the evidence for an association with (non-occupational) adverse health effects is inconclusive. (c) The magnitude of any past health effects on residential populations living near incinerators that did occur is likely to have been small. (d) Levels of airborne emissions from individual incinerators should be lower now than in the past, due to stricter legislative controls and improved technology. Hence, any risk to the health of a local population living near an incinerator, associated with its emissions, should also now be lower.”

The **US National Research Council Committee on Health Effects of Waste Incineration (NRC) (NRC 2000)** reviewed evidence as part of a wide ranging report. The Committee view of the published evidence was summarised in a key conclusion: “Few epidemiological studies have attempted to assess whether adverse health effects have actually occurred near individual incinerators, and most of them have been unable to detect any effects. The studies of which the committee is aware that did report finding health effects had shortcomings and failed to provide convincing evidence. That result is not surprising given the small populations typically available for study and the fact that such effects, if any, might occur only infrequently or take many years to appear. Also, factors such as emissions from other pollution sources and variations in human activity patterns often decrease the likelihood of determining a relationship between small contributions of

pollutants from incinerators and observed health effects. Lack of evidence of such relationships might mean that adverse health effects did not occur, but it could mean that such relationships might not be detectable using available methods and sources."

The **British Society for Ecological Medicine (BSEM) published a report in 2005** on the health effects associated with incineration and concluded that "Large studies have shown higher rates of adult and childhood cancer and also birth defects around municipal waste incinerators: the results are consistent with the associations being causal. A number of smaller epidemiological studies support this interpretation and suggest that the range of illnesses produced by incinerators may be much wider. Incinerator emissions are a major source of fine particulates, of toxic metals and of more than 200 organic chemicals, including known carcinogens, mutagens, and hormone disrupters. Emissions also contain other unidentified compounds whose potential for harm is as yet unknown, as was once the case with dioxins. Abatement equipment in modern incinerators merely transfers the toxic load, notably that of dioxins and heavy metals, from airborne emissions to the fly ash. This fly ash is light, readily windborne and mostly of low particle size. It represents a considerable and poorly understood health hazard."

The BSEM report was reviewed by the HPA and they concluded that "Having considered the BSEM report the HPA maintains its position that contemporary and effectively managed and regulated waste incineration processes contribute little to the concentrations of monitored pollutants in ambient air and that the emissions from such plants have little effect on health." The BSEM report was also commented on by the consultants who produced the Defra 2004 report referred to above. They said that "It fails to consider the significance of incineration as a source of the substances of concern. It does not consider the possible significance of the dose of pollutants that could result from incinerators. It does not fairly consider the adverse effects that could be associated with alternatives to incineration. It relies on inaccurate and outdated material. In view of these shortcomings, the report's conclusions with regard to the health effects of incineration are not reliable."

A **Greenpeace** review on incineration and human health concluded that a broad range of health effects have been associated with living near to incinerators as well as with working at these installations. Such effects include cancer (among both children and adults), adverse impacts on the respiratory system, heart disease, immune system effects, increased allergies and congenital abnormalities. Some studies, particularly those on cancer, relate to old rather than modern incinerators. However, modern incinerators operating in the last few years have also been associated with adverse health effects."

The Health Protection Scotland report referred to above says that "the authors of the Greenpeace review do not explain the basis for their conclusion that there is an association between incineration and adverse effects in terms of criteria used to assess the strength of evidence. The weighting factors used to derive the assessment are not detailed. The objectivity of the conclusion cannot therefore be easily tested."

From this published body of scientific opinion, we take the view stated by the HPA that “While it is not possible to rule out adverse health effects from modern, well regulated municipal waste incinerators with complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable”. We therefore 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 in order 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 mathematic 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 in order to allow for different body size, such as for children of different ages. In the UK, the COT has set a TDI for dioxins, furans and dioxin like PCB’s of 2 picograms I-TEQ/Kg-body weight/day (N.B. 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 PCB’s, 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 therefore not usually necessary to model the human body intake.

Concern was raised about the potential human intake of mercury linked to fisheries. We usually consider that if there are no fisheries within 10km that there is no significant risk. In this instance there are several sites listed as ‘fisheries’. Based on records from the Centre for Environment, Fisheries and

Aquaculture Science (CEFAS) and information available on line, we have concluded that these are catch and release fisheries and therefore we consider that the risk of metals getting into the food chain via this route is low. Specific consideration of accumulation of metals is not required in this case. We are satisfied that impacts from mercury will not be significant.

The Committee on the Medical Effects of Air Pollutants (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". COMEAP has issued a statement expressing some reservations about the applicability of applying its methodology to small affected areas. Those concerns generally relate to the fact that the exposure-response coefficients used in the COMEAP report derive from studies of whole urban populations where the air pollution climate may differ from that around a new industrial installation. COMEAP identified a number of factors and assumptions that would contribute to the uncertainty of the estimates. These were summarised in the Defra review as below:

- Assumption that the spatial distribution of the air pollutants considered is the same in the area under study as in those areas, usually cities or large towns, in which the studies which generated the coefficients were undertaken.
- Assumption that the temporal pattern of pollutant concentrations in the area under study is similar to that in the areas in which the studies which generated the coefficients were undertaken (i.e. urban areas).
- It should be recognised that a difference in the pattern of socio-economic conditions between the areas to be studied and the reference areas could lead to inaccuracy in the predicted level of effects.
- In the same way, a difference in the pattern of personal exposures between the areas to be studied and the reference areas will affect the accuracy of the predictions of effects.

The use of the COMEAP methodology is not generally recommended for modelling the human health impacts of individual installations. However it may have limited applicability where emissions of NO_x, SO_2 and particulates cannot be screened out as insignificant in the Environmental Impact assessment, there are high ambient background levels of these pollutants and we are advised that its use was appropriate by our public health consultees.

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 model 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 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 of dioxin intake are detailed in the table below (worst – case results for each category are shown). The results 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 maximum contribution of the facility to the COT TDI is 3.3% for the Farmer East 2 child receptor and 2.2% for the Farmer East 2 adult receptor. This assumes as a worst-case that these receptors produce their own home reared and home-grown food at the location of maximum impact for the area and represents an extreme worst-case. This assumes that both arable and pasture land are available at this location. Therefore, it is considered that the predicted impacts for this receptor and for other farmer receptors represent a worst-case. For the residential receptors, the maximum contribution of the facility to the COT TDI is 0.1% for the Resident Station Road receptor. Therefore, the contribution of the facility to the intake of dioxins/furans and dioxin-like PCBs is low. We have conducted our own HHRA screening using the HHRAP, assuming exposure at the maximum point of impact and agree with the conclusions drawn in the assessment submitted with the Application.

Receptor	adult	child
Farmer East 2	0.045	0.065
Residential Horsham 4	0.00039	0.0011
Residential Station Road	0.00075	0.0022
Residential Warnham 1 and 2	0.00033	0.00095

Calculated maximum daily intake of dioxins by local receptors resulting from the operation of the proposed facility (pg I-TEQ/ kg-BW/day)

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 PHE) 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 $\mu g/m^3$ 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."

PHE 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 a 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

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

Taking into account all of the expert opinion available, we agree with the conclusion reached by PHE that "While it is not possible to rule out adverse health effects from modern, well regulated municipal waste incinerators with complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable."

In carrying out air dispersion modelling as part of the Environmental Impact assessment and comparing the predicted environmental concentrations with European and national air quality standards, the Applicant has effectively made a health risk assessment for many pollutants. These air quality standards have been developed primarily in order to protect human health.

The Applicant's air quality impact assessment concluded that all Installation emissions screen out as insignificant except for PAH, cadmium, vanadium, arsenic and nickel; where the impact of emissions of PAH, cadmium, vanadium and arsenic nickel have not been screened out as insignificant, the assessment still shows that the predicted environmental concentrations are well within air quality standards or environmental action levels.

The Environment Agency has reviewed the methodology employed by the Applicant to carry out the health impact assessment and agreed that it was appropriate and sufficiently precautionary.

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 carcinogenic or non-carcinogenic risk to human health.

Public Health England and the Local Authority Director of Public Health were consulted on the Application and 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 it concluded that it is unlikely that there will be any unacceptable effects on the human food chain as a result of the operations at the Installation. Details of any responses provided by Public Health England, the Local Authority Director of Public Health and the FSA to the consultation on this Application can be found in Annex 4.

The Environment Agency is therefore satisfied that the Applicant's conclusions presented above are soundly based and we conclude that the potential emissions of pollutants including dioxins, furans and metals from the proposed facility are unlikely to have an impact upon human health.

5.4 Impact on Habitats sites, SSSIs, non-statutory conservation sites etc.

5.4.1 Sites Considered

There are no Habitats (i.e. Special Areas of Conservation, Special Protection Areas and Ramsar) sites within 10km of the proposed installation.

There is one Site of Special Scientific Interest located within 2km of the proposed installation:

- Warnham SSSI, 602m from the proposed installation.

The following non-statutory local wildlife and conservation sites are located within 2km of the proposed installation:

- Brockhurst Wood & Gill & Morris's Wood LWS, 556m from the proposed installation.
- Warnham Mill Pond LWS, 1048m from the proposed installation.
- Brockhurst Wood & Gill & Morris's Wood LWS, 556m from the proposed installation.

There are also 14 sites of Ancient Woodland within 2km of the site, the closest of which are:

- Ancient Woodland (unknown name), 207m from proposed installation.
- Ancient Woodland (unknown name), 780m from proposed installation.
- Ancient Woodland (unknown name), 1301m from proposed installation.
- Ancient Woodland (unknown name), 1342m from proposed installation.

5.4.2 SSSI Assessment

Warnham SSSI is approximately 600m north-east of the site. It is designated for geological reasons and the Applicant has therefore concluded that it is not sensitive to air pollution and have not considered it further. We agree with these conclusions and approach.

5.4.3 Assessment of other conservation sites

The Application contains an assessment of the maximum grid process contributions compared with the critical levels and critical loads for the protection of ecosystems. These are presented in following table:

Pollutant	ES ($\mu g/m^3$)	Process Contribution (PC) ($\mu g/m^3$)	PC as % of ES
Direct Impacts[2]			
NO_x Annual	30	0.80	3
NO_x Daily Mean	75	6.91	9

Pollutant	ES (µg/m³)	Process Contribution (PC) (µg/m³)	PC as % of ES
SO_2 Annual	10 (1)	0.20	1
Ammonia	1 (2)	0.04	4
HF Weekly Mean	0.5	0.026	5
HF Daily Mean	5	0.034	1
Deposition Impacts			
N Deposition (kg N/ha/yr)	5 - 20	0.47	2 - 9
Acidification (Keq/ha/yr)	1.173 - 3.01	0.044 - 0.081	3 - 4
Note 1: Critical Level for SO2 is 20 for higher plants or 10 for sensitive lichen communities & bryophytes and ecosystems where lichens & bryophytes are an important part of the ecosystem's integrity. In this case, the lowest value has been used. Note 2: * Critical Levels for NH_3 range between 1 and 3 µg/m^3. In this case, the lowest value has been used.			

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 other conservations site it can be concluded that a proposed installation will not cause significant pollution if the PC is less than 100% of the relevant Critical Level or Load.

The tables above show 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.

5.5 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:

- NO_x emissions of 400 mg/m^3
- Particulate emissions of 150 mg/m^3 (5 x half hourly BAT AEL value)
- SO_2 emissions of 250 mg/m^3 (1.25 x half hourly BAT AEL value)
- HCl emissions of 1000 mg/m^3 (16 x normal half hourly BAT AEL value)
- Dioxin emissions of 10 ng/m^3 (100 x IED limit)
- Metal emissions other than mercury are 5 times those of normal operation
- Mercury emissions are 5 times those of normal operation

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.

Assessment of Emissions to Air – Abnormal emissions

Pollutant	EQS / EAL		Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	µg/m³		µg/m³	µg/m³	% of EAL	µg/m³	% of EAL
NO_2	120	2	23.8	11.5	9.6	35.3	29.4
PM_{10}	50	3	24	0.2244	0.45	24.2244	48.4
SO_2	266	4	3.14	24	9.0	27.14	10.2
	350	5	3.14	18.8	5.37	21.94	6.3
HCl	750	6	0.39	128.3	17.106667	128.7	17.16
HF	160	6	2.46	1.3	0.8125	3.76	2.4
Hg	7.5	1	0.00247	0.0321	0.43	0.03457	0.461
Sb	150	1	0	0.3207	0.21	0.32070	0.214
Cu	200	1	0.01553	0.3207	0.16	0.33623	0.168
Mn	1500	1	0.00569	0.3207	0.02	0.32639	0.0218
Cr (II)(III)	150	1	0.0043	0.3207	0.21	0.32500	0.2167

1 1-hr Maximum
2 99.79th %ile of 1-hour means
3 90.41st %ile of 24-hour means
4 99.9th ile of 15-min means
5 99.73rd %ile of 1-hour means
6 1-hour average

From the table above the emissions of the following substances can still be considered insignificant, in that the PC is still <10% of the short-term ES.

- NO_2, PM_{10}, SO_2, HF, Hg, Sb, Cu, Mn, Cr(II)(III)

Also from the table above emissions of 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% of short term ES.

- HCl

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 10 ng/m^3 for the maximum period of abnormal operation, this would result in an increase of by a factor of approximately 1.67 in the TDI reported in section 5.3.2. In these circumstances the TDI would be as set out in the table below. At this level, emissions of dioxins will still not pose a risk to human health.

The results 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 maximum contribution of the facility to the COT TDI from abnormal emissions is 5.5% for the Farmer East 2 child receptor and 3.75% for the Farmer East 2 adult receptor. This assumes as a worst-case that these receptors produce their own home reared and home-grown food at the location of maximum impact for the area and represents an extreme worst-case. This assumes that both arable and pasture land are available at this location. Therefore, it is considered that the predicted impacts for this receptor and for other farmer receptors represent a worst-case. For the residential receptors, the maximum contribution of the facility to the COT TDI is 0.19% for the Resident Station Road receptor child. Therefore, the contribution of the facility to the intake of dioxins/furans and dioxin-like PCBs is low. We have conducted our own HHRA screening using the HHRAP, assuming exposure at the maximum point of impact and agree with the conclusions drawn in the assessment submitted with the Application.

Receptor	adult	child
Farmer East 2	0.075	0.11
Residential Horsham 4	0.00065	0.0018
Residential Station Road	0.0013	0.0037
Residential Warnham 1 and 2	0.00055	0.0016

Calculated maximum daily intake of dioxins by local receptors resulting from abnormal operation of the proposed facility (pg I-TEQ/ kg-BW/day)

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 (see section 5.2 for further detail).

- 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 emission limit values. 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 Conclusions shall be the reference for setting the permit conditions, so it may be possible and desirable to achieve emissions below the limits referenced in Chapter IV. The BAT conclusions were published on 03/12/2019.

Even if the Chapter IV limits are appropriate, operational controls complement the emission limits 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 who sought to operate its installation continually at the maximum permitted level would almost inevitably breach those limits regularly, simply by virtue of normal fluctuations in plant performance, resulting in enforcement action (including potentially prosecution) being taken. Assessments based on, say, Chapter IV limits are therefore "worst-case" scenarios.

Should the Installation, once in operation, emit at rates significantly below the limits included in the Permit, we will consider tightening ELVs appropriately. We are, however, 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) • Municipal and other • heterogeneous solid wastes • Can accept a proportion of sewage sludge and/or medical waste with municipal waste • Applied at most modern • MSW installations	• 1 to 50 t/h with most projects 5 to 30 t/h. • Most industrial applications not below 2.5 or 3 t/h.	• Widely proven at large scales. • Robust • Low maintenance cost • Long operational history • Can take heterogeneous wastes without special • 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: LCV 10 – 20 GJ/t	Same as air-cooled grates	As air-cooled grates but: • higher heat value waste is treatable • Better combustion control possible.	As air-cooled grates but: • risk of grate damage/ leaks • 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 Solid feeds more limited than grate (due to refractory damage) often applied to hazardous Wastes	<16 t/h	• Very well proven • Broad range of wastes • 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) • Only finely divided • consistent wastes. • Limited use for raw MSW • Often applied to sludges co fired with RDF, shredded MSW, sludges, poultry manure	Up to 25 t/h	• Good mixing • Fly ashes of good leaching quality	• Careful operation required to avoid clogging bed. • Higher fly ash quantities.	TOC <1%	FGT cost may be lower. Costs of waste preparation
Fluid bed - circulating	• Wide range of CV (6-25 MJ/kg) • Only finely divided consistent wastes. • Limited use for raw MSW • Often applied to sludges co-fired with RDF, coal, wood waste	Up 70 70 t/h	• Good mixing • High steam parameters up to 500oC • Greater fuel flexibility than BFB • Fly ashes of good leaching quality	• Cyclone required to conserve bed material • Higher fly ash quantities	TOC <1%	• FGT cost may be lower. • Costs of waste preparation
Spreader - stoker combustor	• RDF and other particle feeds • Poultry manure • Wood wastes	No information	• Simple grate construction • Less sensitive to particle size than FB	Only for well defined mono-streams	No information	No information
Gasification - fixed bed	• Mixed plastic wastes • Other similar consistent streams • Gasification less widely used/proven than incineration	Up to 20 t/h	• Low leaching residue • Good burnout if oxygen blown • Syngas available • Reduced oxidation of recyclable metals	• Limited waste feed • Not full combustion • High skill level • Tar in raw gas • Less widely proven	• Low leaching bottom ash • 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 • Other similar consistent streams • Not suited to untreated MSW • Gasification less widely used/proven than incineration	Up to 10 t/h	• Low leaching slag • Reduced oxidation of recyclable metals	• Limited waste feed • Not full combustion • High skill level • Less widely proven	low leaching slag	• High operation/ maintenance costs • High pre-treatment costs
Gasification - fluidised bed	• Mixed plastic wastes • Shredded MSW • Shredder residues • Sludges • Metal rich wastes • Other similar consistent streams • Gasification less widely used/proven than incineration	5 – 20 t/h	• Can use low reactor temperatures e.g. for Al recovery • Separation of main non combustibles • Can be combined with ash melting • Reduced oxidation of recyclable metals	• Limited waste size (<30cm) • Tar in raw gas • Higher UHV raw gas • Less widely proven	If combined with ash melting chamber ash is vitrified	Lower than other gasifiers
Pyrolysis	• Pre-treated MSW • High metal inert streams • Shredder residues/plastics • Pyrolysis is less widely used/proven than incineration	~ 5 t/h (short drum) 5 – 10 t/h (medium drum)	• No oxidation of metals • No combustion energy for metals/inert • In reactor acid neutralisation possible • Syngas available	• Limited wastes • Process control and engineering critical • High skill level • Not widely proven • Need market for syngas	• Dependent on process temperature • 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
- Fluidised Bed
- Gasification
- Pyrolysis

The Applicant has proposed to use a furnace technology comprising moving grate.

The Applicant has justified the selection of furnace technology as a well proven, reliable and effective technique for combustion of waste materials comprising or derived from MSW or commercial wastes. They confirm that demonstrable and well understood performance was a key objective in the selection of the chosen technology which is identified in the tables above as being considered BAT in the BREF or TGN for this type of waste feed.

The Applicant discounted gasification because,
'*operationally, a homogeneous incoming waste stream with a high organic content is required to obtain consistent gas quality. Therefore, this technology is better suited to applications where the incoming waste material has been pre-treated'*. The BAT justification also stated that the gasification process would require energy input from supplementary combustion to achieve the temperature required for thermal treatment. We accept their justification.

The Applicant also concluded that gasification and pyrolysis systems are recognised as emerging techniques however, their availability and reliability are yet to be proven technologies within the UK at the scale proposed for this facility.

The Applicant discounted Fluidised Bed (FB) technology because it requires a homogenous feedstock and therefore would not be suited to all of the types of waste material proposed for the ERF. We accept this justification.

The Applicant proposes to use gasoil as support fuel for start-up, shut down and for the auxiliary burners. The Applicant has justified its choice of low sulphur gas oil as the support fuel on the basis that there is guaranteed availability compared to natural gas and due to the intermittent use of the fuel and we agree with that assessment. LPG was also considered but was concluded to increase fire risk on site and therefore discounted.

<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 matter to below 5mg/m^3	Max temp 250°C Higher energy use than ESP Sensitive to condensation and corrosion	Multiple compartments Bag burst detectors	Most plants
Wet scrubbing	May reduce acid gases simultaneously.	Not normally BAT. Liquid effluent produced	Require reheat to prevent visible plume and dew point problems.	Where scrubbing required for other pollutants
Ceramic filters	High temperature applications Smaller plant.	May “blind” more than fabric filters		Small plant. 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 Risk of dioxin formation if used in 200-400^{o}C 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. May increase overall energy recovery	Some applications experience corrosion problems. 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 Reduces CO, VOC, dioxins	Expensive. 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. Can be used with NH_3 as slip catalyst with SNCR
Selective non-catalytic	NOx emissions 80 -180 mg/m^3	Relies on an optimum	Port injection locations	All plant unless lower

reduction (SNCR)	Lower energy consumption than SCR Lower costs than SCR	temperature around 900 °C, and sufficient retention time for reduction May lead to Ammonia slip		NOx release required for local environmental protection.
Reagent Type: Ammonia	Likely to be BAT	More difficult to handle Lower nitrous oxide formation 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 reduces the consumption of reagents for secondary NO_x control and can increase overall energy recovery, although in some applications there can be corrosion problems. The Applicant has confirmed that the decision on including FGR will depend on the final design of the furnace and will be confirmed prior to start of commissioning.

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 ^oC 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 / urea as the reagent.

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

The amount of urea / ammonia used for NO_x abatement will need to be optimised to maximise NO_x reduction and minimise NH_3 slip. Improvement condition IC5 requires the Operator to report to the Environment Agency on optimising the performance of the NO_x abatement system. The BAT AEL for ammonia has been set and the Operator is also required to monitor and report on N_2O emissions every 6 months.

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 Low solid residues production Reagent delivery may be optimised by concentration and flow rate	Large effluent disposal and water consumption if not fully treated for re-cycle Effluent treatment plant required May result in		Used for wide range of waste types Can be used as polishing step after other techniques where emissions are high or variable

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 plume Energy required for effluent treatment and plume reheat		
Dry	Low water use Higher reagent consumption to achieve emissions of other FGC techniques but may be reduced by recycling in plant Lower energy use Higher reliability Lowest visible plume potential	Higher solid residue production Reagent consumption controlled only by input rate		All plant
Semi-dry (also described as semi-wet in the Bref)	Medium reaction rates Reagent delivery may be varied by concentration and input rate	Higher solid waste residues than wet but lower than dry system		All plant
Direct injection into boiler	Reduced acid loading to subsequent cleaning stages. 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. Can affect bottom ash quality. Corrosion problems in flue gas cleaning system.		Partial abatement upstream of other techniques in fluidised beds

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:**
Reagent Type: Sodium Hydroxide	Highest removal rates Low solid waste production	Corrosive material ETP sludge for disposal		HWIs
Reagent Type: Lime	Very good removal rates Low leaching solid residue Temperature of reaction well suited to use with bag filters	Corrosive material May give greater residue volume if no in-plant recycle	Wide range of uses	MWIs, CWIs
Reagent Type: Sodium Bicarbonate	Good removal rates Easiest to handle Dry recycle systems proven	Efficient temperature range may be at upper end for use with bag filters Leachable solid residues 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 low sulphur gas oil as the support fuel on the basis that there is guaranteed availability compared to natural gas and due to the intermittent use of the fuel and we agree with that assessment. LPG was also considered but was concluded to increase fire risk on site and therefore discounted.
- 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. Direct desulphurisation is only applicable for fluidised bed furnaces and so is not applicable in this case.

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.

In this case, the Applicant proposed the dry injection of hydrated lime into the boiler post-combustion area for the reduction of acid gases. The Environment Agency is satisfied that this is BAT.

Periodic measurement of HF will be carried out at the ERF. Continuous measurement of HF is not proposed on the basis that the acid gas abatement system will operate to a design guarantee that the emission limit for HCl will not be exceeded.

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. 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.

In this case the Applicant proposes separate feed 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. 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. 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 removal in downstream removal method.	Consumption of aqueous bromine. Can lead to formation of polybrominated dioxins. Can damage bag filter. Effects can be limited use is restricted to dealing with peak emissions		Not suitable for pyrolysis or gasification. Can deal with mercury peaks.

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 and we are satisfied their proposals are BAT. Dosing of hydrated lime will be linked to emissions monitoring and activated carbon will be controlled at the optimum rate determined at commissioning.

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 Section 6 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]

entachlorobenzene (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

During heavy rain fall, clean surface water run-off will be discharged to surface water via an interceptor.

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.

The proposed drainage strategy is provided in Appendix P of the Application. However, as the final design is not complete a preoperational condition specifies that a final drainage design should be submitted prior to commissioning under PO10. The final emission point to surface water will be included in the final drainage plan and will need to be agreed with the Environment Agency.

6.5.2 Emissions to sewer

There will be no discharge to sewer. The previous permit originally had a discharge listed for the welfare facilities on site. We requested additional information relating to this discharge in Schedule 5 notice dated 23/08/2021. The Applicant confirmed that there is a sealed septic tank on site and the effluent is tankered away and that there is no discharge to foul sewer from the welfare activities.

There will be no process discharges to sewer from the facility. In the event of a full boiler maintenance the ERF boilers will need to be emptied and the effluent would be tankered and either removed from site or re-used. Where possible, excess water will be used within the bottom ash quench system.

No treatment of effluent or discharge of process effluent is permitted at the facility.

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.

Fugitive releases have been identified and assessed as part of the Environmental Risk Assessment (see Appendix D). The assessment indicates that the proposed measures for control of fugitive releases will prevent or minimise fugitive releases from the facility.

Good housekeeping practices will be in operation to ensure that any spillages of potentially dusty materials are cleared up at the earliest opportunity. Spill kits will be available for clean-up of all chemicals (i.e. boiler water treatment chemicals) and oils (i.e. fuel oil and maintenance oils) stored and used within the facility and will be located in proximity to the relevant storage areas and/or delivery points. Site procedures will detail those actions which should be followed in the event of a spillage.

The dust management plan (DMP) in Appendix S of the Application sets out the primary sources of dust from the facility and the proposed dust control measures under normal and abnormal operation.

Appendix D of the Application identifies litter release from the waste tipping hall, waste processing hall and from delivery vehicles as a potential risk. The assessment states that all waste will be transported to the facility in enclosed vehicles and that procedures will be developed to ensure all waste is removed from vehicles before leaving the site. In addition the Application states that the doors to the tipping hall and waste processing hall will remain closed at all times other than for access and where access is required, fast-acting roller shutters will minimise the duration that doors are open.

The incoming waste material storage bunkers will be constructed of concrete and will be impervious and subject to routine visual checks when waste volumes in the bunker are low and during annual routine maintenance shutdowns. All process areas will be located on hard standing. All bunds provided for chemical and oil storage tanks will be manually inspected to ensure they remain empty. Bunds will all be designed to contain at least 110% of the contents of the largest storage tank or 25% of the total tankage, whichever is the greater and will be resistant to the material which they are designed to contain. Any rainwater accumulated in bunds will be tested for pH and visible solids and oil. Should the tests indicate that there was no contamination, the clean rainwater would be discharged to surface water via an existing outfall as shown on Drawing 3 – Drainage Layout. In the event that the water is found to be contaminated the waters would be tankered for off-site disposal.

Underground structures will be limited to:

- the lower part of the bunker;
- the lower part of the boiler;
- site drains;

- drainage sumps; and
- incoming clean water systems.

The proposed drainage strategy is provided in Appendix R of the Application. The ERF bunker will be subject to integrity checks during commissioning and prior to accepting waste. During commissioning the underground surface drains and foul drains will be subject to integrity testing and will be certified as sound prior to the ERF operations commencing. These drains will subsequent to a preventative maintenance and testing programme. The condition at that time will be confirmed by CCTV inspections and will subsequently determine the inspection frequency for further inspections.

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

The Applicant submitted an Odour Management Plan with their application. The odour management plan includes the following measures for minimising production and potential impacts from odour from the facility:

- Waste acceptance procedures will be in place for all incoming loads
- Acceptable waste will be delivered to the facility in covered vehicles or containers.
- Deliveries will be scheduled to reduce build-up of waste on site.
- Deliveries, handling and storage of waste will be undertaken in an enclosed environment.
- The access to and from the mechanical sorting hall and bunker for waste delivery will be via entrances fitted with fast-acting doors which will remain closed during non-delivery periods.
- Bunker waste will be rotated to allow the oldest waste to be prioritised for the combustion process.
- Full containers of waste will be stored for no longer than 72 hours with the majority being serviced in 24 hours.
- No putrescible materials will be managed or stored within the sorting and material recovery area.
- Non-conforming wastes identified during pre-acceptance checks will not be accepted on to the site and returned to source
- Non-conforming wastes identified after pre-acceptance checks will be quarantined and removed to an appropriate treatment or disposal facility.
- combustion air for the ERF will be drawn from within the building in order to maintain negative pressure to reduce the potential for odours from leaving the facility building.

In the case of shutdown, the amount of waste in storage will be minimised by stopping/diverting deliveries and/or having run down waste beforehand (if a planned shutdown). There will also be an filtering system in place which will discharge through the main stack. Management of unplanned shutdowns will be set out in relevant procedures within the EMS.

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.

6.5.5 Noise and vibration

The application contained a noise impact assessment (NIA) which identified local noise-sensitive receptors (NSR), potential sources of noise at the proposed installation and noise attenuation measures.

We did not consider the weather data presented was adequate in the original noise impact assessment submitted with the application. We also concluded that a number of sensitive receptors had been omitted in the assessment. We requested a revised noise impact assessment to be submitted via a Schedule 5 notice dated 28/09/2021. The Applicant submitted a revised noise impact assessment on 18/10/2021 and the associated modelling files on 20/10/2021. We considered that the issues raised through the Schedule 5 notice had been corrected and we based our assessment on the revised impact assessment, dated 15/10/2021.

While much of the plant will be located internally, the following externally located plant were identified as requiring consideration within the assessment:

- Air Cooled Condenser (ACC) plant, substation and transformer

BS4142:2014 assessment

The Applicant also considered the potential for noise impact due to HGV movements around the site associated with the delivery of waste.

The Applicant's assessment of the potential noise impact during operation of the installation was based on the modelling software package SoundPLAN, which is a commonly used computer model for regulatory noise modelling. The assessment considered operations during both the daytime and the night-time period.

The potential impact due to the operation of the installation has been determined in accordance with the methodology in British Standard BS4142:2014, '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.

Modelling predictions were made at 7 noise sensitive receptors. The closest existing receptor, Langhurst Moat Cottage and Wealdon is located approximately 210m to the south-east of the proposed installation. The other closest residential properties are located approximately 330m to the north-east and south of the site. The closest receptors to the west and north-west of the site have also been considered. The land earmarked for the consented residential development on Land North of Horsham (North Horsham Scheme) is located approximately 450m south-east of the site. We considered these locations to be representative of the nearest NSRs.

The Applicant undertook environmental sound surveys at three locations close to the NSRs between the 8th and 16th September 2020 and then at one further additional location during the daytime on the 8th September 2020 and during the evening and night-time of the 15th to 16th of September 2020 in order to establish background sound levels. Meteorological data were taken from the weather station in Holbrook located approximately 1.2km to the south-west of the site. During the survey period wind speeds did not exceed 5 m/s and there were no recorded precipitation events. In general we considered that the data has been used 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.

The results of the Applicant's daytime (07:00 - 19:00 hours) assessment are shown in the table below. Although we did not obtain the same numerical outcomes during our checks, we did reach the same conclusions as the applicant as set out below.

Receptor name	**Measured background noise level (dB)**	**Modelled rating level (dB)**	**Rating minus background (dB)**

Receptor name	Measured background noise level (dB)	Modelled rating level (dB)	Rating minus background (dB)
Station Road	40	37	-3
Andrews Farm	40	30	-10
Cox Farm	39	32	-7
Graylands Lodge	43	38	-5
Haybarn Cottage	43	39	-4
Langhurst Moat Cottage	46	45	-1
North Horsham Scheme	43	36	-7

The results show that during the daytime the background level would not be exceeded at any of the noise sensitive receptors, with the predicted sound level at receptors ranging from 10db less than the background level to 1db less than background level. These predictions would indicate a low impact in accordance with BS4142.

The results of the Applicant's evening (19:00 - 23:00 hours) assessment are shown in the table below. Although we did not obtain the same numerical outcomes during our checks, we did reach the same conclusions as the applicant as set out below.

Receptor name	Measured background noise level (dB)	Modelled rating level (dB)	Rating minus background (dB)
Station Road	39	35	-4
Andrews Farm	39	30	-9
Cox Farm	39	31	-8
Graylands Lodge	42	38	-4
Haybarn Cottage	42	34	-8
Langhurst Moat Cottage	45	37	-9
North Horsham Scheme	42	31	-11

The results show that during the evening time the background level would not be exceeded at any of the noise sensitive receptors, with the predicted sound level at receptors ranging from 11 to 4db less than the background level. These predictions would indicate a low impact in accordance with BS4142.

The results of the Applicant's night-time (23:00 - 07:00 hours) assessment are shown in the table below.

Receptor name	**Measured background noise level (dB)**	**Modelled rating level (dB)**	**Rating minus background (dB)**
Station Road	37	37	0
Andrews Farm	37	30	-7
Cox Farm	33	32	-1
Graylands Lodge	39	39	0
Haybarn Cottage	35	35	0
Langhurst Moat Cottage	42	38	-4
North Horsham Scheme	35	32	-3

The results show that during the night time the background level would not be exceeded at any of the noise sensitive receptors, with the predicted sound level at receptors ranging from 7db less than the background level to an equal level as the background level. These predictions would indicate a low impact in accordance with BS4142.

Having reviewed the Applicant's revised noise impact assessment and carried out our own checks and sensitivity analysis we consider that worst case Rating levels at noise sensitive receptors may be slightly higher than presented by the Applicant. We agree that a low impact is likely at the majority of the noise sensitive receptors (NSR) for day, evening and night periods, depending on context. The worst impacted NSR is Langhurst Moat Cottage where a below adverse impact is possible during daytime hours. This impact could be reduced to low when considering the predicted site emissions in the context of the existing sound climate. Therefore while we do not agree with the absolute numerical predictions presented by the Applicant we are in agreement with their conclusions.

Application of BAT

The Waste Incineration BAT Conclusions require that in order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques below:

- Appropriate location of equipment and buildings
- Operational measures
- Low-noise equipment

- Noise Attenuation
- Noise-control equipment / infrastructure.

The Applicant has stated that all of the techniques will be used one way or another (subject to final design), the key measures being indicated below:

- all plant and/or processing activities located indoors where possible
- doors on Tipping Hall will be closed during tipping of waste
- all internal noise generating equipment will be fitted with acoustic enclosures
- tonal exhaust noise from the main stack minimised through fitting of silencer within the stack
- the use of an appropriate preventative maintenance program to ensure no deterioration of plant or equipment that would give rise to an increase in noise.
- low noise fans need to be selected with a maximum sound power level of 97 dB L_{WA}.
- acoustic screens will be installed around the perimeter of the ACCs.
- front end shovels moving waste within the waste sorting area will only operate during the daytime and vehicles will be fitted with white noise reversing alarms.
- HGV movements will be limited to 20mph.

We consider that the above measures represent BAT and broadly follow the noise control hierarchy outlined in our web guidance on Noise and vibration management: environmental permits.

We have specified a pre operational condition requiring that the applicant confirm the final sound level of the ACCs and demonstrate that it is no higher than the proposed level within the noise impact assessment. The final design of the proposed acoustic screens should also be submitted including justification of how these will ensure that noise from the ACCs is minimised at receptors.

Conclusion

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site.

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 03/12/2019.

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

Below we consider whether, for those 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).

(ii) National and European ESs

There are no additional National or European EQSs that indicate that IED limits are insufficient to protect the local environment.

(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.

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 their permit variation 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 a condition in 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 IC10 and IC11 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 5 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 the Planning Inspectorate to grant planning permission on 27/02/2020.
- The decision notice of the Planning Inspectorate accompanying the grant of planning permission.
- The response of the Environment Agency to the local planning authority in its role as consultee to the planning process.

From 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.

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 draft decision in this case has been reached following a programme of extended public consultation, on the permit variation 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.

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

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

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

(iii) Section 7 (Pursuit of Conservation Objectives)

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 area.

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.

(iv) 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.

(v) 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.

(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.

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

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.
Paragraph 1.3 of the guidance says:
"The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation."
We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.
We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

7.2.3 **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.

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

Section 85 of this Act imposes a duty on Environment Agency to have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty (AONB). There is no AONB which could be affected by the Installation. The closest AONB is approximately 3km from the installation.

7.2.5 **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.

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

Section 40 of this Act requires us to have regard, so far as is consistent with the proper exercise of our functions, to the purpose of conserving biodiversity. We have done so and consider that no different or additional conditions in the Permit are required.

7.2.7 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.

7.2.8 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.

There is no National Park which could be affected by the Installation.

7.3 <u>National secondary legislation</u>

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

We have assessed the Application in accordance with guidance agreed jointly with Natural England. There is no European Site within the screening distance

of 10km from the installation and therefore we can conclude that there will be no likely significant effect on any European Site.

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

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.

7.4 Other relevant legal requirements

7.4.1 Duty to Involve

S23 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. S24 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 and the Environment Agency's Building Trust with Communities toolkit.

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 S2.3 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 S2.3 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 and S3.1(a) in Schedule 3 of the Permit. No process water discharged to water from the site.
45(1)(d)	The permit shall include the requirements for pH, temperature and flow of wastewater 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 and S3.1(a) in Schedule 3 of the Permit.
45(1)(f)	The permit shall include the maximum permissible period of unavoidable stoppages, disturbances or failures of the purification devices or the measurement devices, during which the emissions into the air and the discharges of wastewater may exceed the prescribed emission limit values.	Conditions 2.3.12 and 2.3.13.
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 – hazardous waste not incinerated
45(2)(b)	The permit shall include the minimum and maximum mass flows of those hazardous waste, their lowest and maximum calorific values	Not Applicable – hazardous waste not incinerated

IED Article	Requirement	Delivered by
	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 2.3.1 and 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 and S3.1(a).
46(2)	Emission into air shall not exceed the emission limit values set out in parts 4 or determined in accordance with part 4 of Annex VI.	Not applicable
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. 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 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. Limits on dust (150 mg/m3), CO and TOC not to be exceeded during this period.	Conditions 2.3.12 and 2.3.13
47	In the event of breakdown, reduce	Condition 2.3.11

IED Article	Requirement	Delivered by
	or close down operations as soon as practicable. Limits on dust (150 mg/m3), 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 and 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, tables S3.1 and S3.1(a).
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 PO7
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 S4.2
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 and 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 S3.3
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 S3.2
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
50(4)(a)	Automatic shut-down to prevent	Condition 2.3.9

IED Article	Requirement	Delivered by
	waste feed if at start up until the specified temperature has been reached.	
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 concerning delivery and reception of Wastes, to prevent or minimise pollution.	Conditions 2.3.1, 2.3.3, 3.3, 3.4, 3.5 and 3.7
52(2)	Determine the mass of each	Condition 2.3.4(a) and

IED Article	Requirement	Delivered by
	category of wastes, if possible according to the EWC, prior to accepting the waste.	Table S2.3 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 – hazardous waste not incinerated
52(4)	Prior to accepting hazardous waste, the operator shall carry out the procedures set out in Article 52(4).	Not Applicable – hazardous waste not incinerated
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 S3.3
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 S3.3 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. Permit table S3.2
3	Monitor key process parameters	Condition 3.6.1 and table S3.2
4	Monitoring emissions to air	Condition 3.6.1 and tables S3.1 and S3.1(a)
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 S3.3
8	Analysis of hazardous waste	Not applicable for the energy recovery facility
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 as no bottom ash treatment to be carried out on site.
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 and 3.8, table S1.2 and pre operation 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, 3.5.1 and table S3.3
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
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 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 and 3.3.2. 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 as no treatment of slags and ashes proposed on site.
24	Techniques to prevent or reduce diffuse emissions to air from treatment of slags and ashes	Not Applicable as no treatment of slags and ashes proposed on site.

BAT conclusion	Criteria	Delivered by
25	Minimisation of dust and metal emissions and compliance with BAT AEL	Section 5.2 of this decision document. Permit conditions 2.3.1, table S1.2, 3.4.1, 3.3.1, 3.3.2. 3.1.1 and 3.1.2 and table S3.1
26	Techniques and BAT AEL for dust emissions from enclosed slags and ashes treatment	Not Applicable as no treatment of slags and ashes proposed on site.
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 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. 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. Section 5.2 of this decision document. 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. Section 5.2 of this decision document. 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. Section 5.2 of this decision document. Permit conditions 2.3.1, table S1.2, 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 Sections 4.2.2, 6.5.1 and 6.5.3 of this decision document. Permit conditions 2.3.1, table S1.2, 3.1.1, 3.1.2 and table S3.2

BAT conclusion	Criteria	Delivered by
33	Techniques to reduce water usage and prevent or reduce waste water	Measures described in the Application. Sections 4.2.2 and 4.3.8 of this decision document Permit conditions 1.3.1, 2.3.1, table S1.2
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. 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 S1.4 Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
PO1	Energy Recovery Facility	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. 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: • a list of potential OTNOC situations that are considered to be abnormal operation under the definition in Schedule 6 of this permit. • a definition of start-up and shut-down conditions having regard to any Environment Agency guidance on start-up and shut-down. • any updates on the design of critical equipment to minimise OTNOC since the permit application 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. 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	Energy Recovery Facility	Prior to the commencement of commissioning of the Energy Recovery Facility, 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,

Table S1.4 Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
		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	Energy Recovery Facility	Prior to the commencement of commissioning of the Energy Recovery Facility, 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.
PO4	Energy Recovery Facility and Materials Recovery Facility	Prior to the commencement of commissioning of the Energy Recovery Facility, 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	Energy Recovery Facility	Prior to the commencement of commissioning of the Energy Recovery Facility, 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. The procedure shall be implemented in accordance with the written approval from the Environment Agency.
PO6	Energy Recovery Facility	No later than one month after the final design of the Energy Recovery Facility 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

Table S1.4 Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
		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	Energy Recovery Facility	At least three months before (or other date agreed in writing with the Environment Agency) the commencement of commissioning of the Energy Recovery Facility, 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 to comply with Environment Agency guidance notes M1, M2 and M20. The report shall include the following: • Plant and equipment details, including accreditation to MCERTS • Methods and standards for sampling and analysis Details of monitoring locations, access and working platforms
PO8	Energy Recovery Facility	At least 3 months before the commencement of commissioning of the Energy Recovery Facility (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.
PO9	Energy Recovery Facility	At least 3 months before the commencement of commissioning of the Energy Recovery Facility (or other date agreed in writing with the Environment Agency) the Operator shall submit, for approval by the Environment Agency, an updated specification of the air cooled condensers (ACCs) to demonstrate that the combined power sound power level does not exceed 97 dB L_{WA}. The final design of the proposed acoustic screens should also be submitted including justification of how these will ensure that noise from the ACCs is

Table S1.4 Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
		minimised.
PO10	Energy Recovery Facility and Materials Recovery Facility	The operator shall submit an updated Fire Prevention Plan which meets the relevant criteria set out within the Environment Agency's Fire Prevention Plan guidance. The following elements which were not finalised when the first version was submitted shall be addressed in detail: • Provision of adequate firewater • Drainage, pollution control and firewater containment including a finalised drainage plan clearly marking emission point W1 • Identification of individual storage areas for the different waste types to be accepted on site. • Information on prevailing wind conditions. 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 on the implementation of its Environmental Management System (EMS) for the regulated facility 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 of the regulated facility
IC2	The Operator shall submit a written proposal to the Environment Agency 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 PM_{10}, and $PM_{2.5}$ 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 of the Energy Recovery Facility
IC3	The Operator shall submit a written report to the Environment Agency on the commissioning of the Regulated Facility. 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 of the Regulated Facility
IC4	The operator shall notify the Environment Agency of the proposed date(s) that validation testing for the Energy Recovery Facility is planned for.	Notification at least 3 weeks prior to validation testing
	During commissioning of the Energy Recovery Facility 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	Validation tests completed before the end of commissioning of the Energy Recovery Facility

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	approved through pre-operational condition PO8.	
	The operator shall submit a written report to the Environment Agency on the validation of residence time, oxygen and temperature whilst the Energy Recovery Facility is 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 of the Energy Recovery Facility
IC5	The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of: • The lime/sodium bicarbonate injection system for minimisation of acid gas emissions • The carbon injection system for minimisation of dioxin and heavy metal emissions. • 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, N_2O and NH_3 emissions that can be achieved under optimum operating conditions.	Within 4 months of the completion of commissioning of the Energy Recovery Facility
	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/Nm^3 as a daily average, including a description of any relevant cross-media effects identified. If an ELV for NOx of 100 mg/Nm^3 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 of the Energy Recovery Facility
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: • Cadmium, nickel, arsenic and vanadium A report on the assessment shall be made to the Environment Agency. Emissions monitoring data obtained during the first year of operation of the Energy Recovery Facility 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	15 months from the completion of commissioning of the Energy Recovery Facility

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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.	
IC7	The Operator shall submit a written summary report to the Environment Agency 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 BS 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 of the Energy Recovery Facility Full summary evidence compliance report to be submitted within 18 months of completion of commissioning of the Energy Recovery Facility.
IC8	During commissioning of the Energy Recovery Facility, 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 3 months of completion of commissioning of the Energy Recovery Facility
IC9	For the Energy Recovery Facility, the operator shall carry out a programme of dioxin and dioxin like PCB 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 dioxin emissions can be considered to be stable.	Within 3 months of completion of commissioning of the Energy Recovery Facility or as agreed in writing with the Environment Agency
IC10	From the Energy Recovery Facility, 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	Within 3 months of completion of commissioning of the Energy Recovery Facility or as agreed in writing with the

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	proven to have a low and stable mercury content.	Environment Agency
IC11	The Operator shall submit a report to the Environment Agency for approval on start-up and shut-down conditions over the first 12 months of operation of the Energy Recovery Facility. The report shall identify any amendments to the start-up and shut-down definitions that were described in the application.	Within 15 months of completion of commissioning of the Energy Recovery Facility or as agreed in writing with the Environment Agency

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 13/05/2021 to 02/08/2021 and in the West Sussex County Times on 13/05/2021. A digital version of the Application could be viewed via the Environment Agency's Citizen Space page. Additionally, a hard copy of the Application was placed at Horsham Library.

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

- Health and Safety Executive
- UK Health Security Agency (formerly Public Health England)
- Director of Public Health
- Environmental Health – Horsham District Council
- Planning Department – Horsham District Council
- Food Standards Agency
- Historic England
- South Downs National Parks Authority

1) Consultation Responses from Statutory and Non-Statutory Bodies

We received responses from the following:

Response Received from Director of Public Health on 21/06/2021	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Advice that the recommendations from Public Health England are taken into account.	See response from Public Health England

Response Received from Historic England on 08/06/2021	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
No comments provided	No action required

Responses Received from Planning Department, Horsham District Council on 05/08/2021 and 08/03/2022.	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Horsham District Council confirmed	

that it has no objections to the principle of the proposal. However, they also provided the following comments:	
Comments about the order and naming of application documentation.	The Application documents placed on Citizen Space were named as submitted. We considered the naming and order of the documents adequate to enable us to determine the Application and to fulfil our requirements under the Public Participation Statement.
Comments about the fact that no description was given for the model scenarios associated with the air quality impact assessment.	We consider that the model scenarios in the air quality impact assessment were adequately described. We audited the air quality impact assessment submitted with the Application and carried out sensitivity checks on the modelled scenarios and parameters used. We are satisfied that the relevant environmental standards (ES) for pollutants emitted from the facility will not be exceeded as a result of pollutants emitted from the Installation as set out in section 5.2 of this decision document.
Statement that it should be ensured that the process conditions remain the same as modelled.	The permit links the proposed operating techniques through table S1.2. There are also a number of pre operational and improvement conditions included in the permit which require validation of proposed process conditions – see Annex 2 and Annex 3 of this document for details.
Statement that it should be ensured that the composition of the waste to be incinerated is uniform.	The permit specifies which waste codes can be burnt in the incinerator. Waste acceptance criteria will be in place as part of the EMS which will specify the checks that will be carried out on incoming waste. Waste blending and mixing will be carried out in the waste bunker using an overhead crane.
Questions about whether waste material will undergo regular tests for heavy metal content.	Waste acceptance criteria will be in place as part of the EMS which will specify the checks that will be carried out on incoming waste. Checks will

	be appropriate to the nature of the waste received. High heavy metal content is not anticipated in the wastes listed for input to the incinerator.
Suggestion that where emissions to air do not screen out as insignificant that tighter limits for the pollutants should be set.	We are satisfied that the relevant environmental standards (ES) for pollutants emitted from the facility will not be exceeded as a result of pollutants emitted from the Installation as set out in section 5.2 of this decision document. We do not consider that tighter limits than the AELs need to be set for any of the pollutants.
Suggestion that the proposed frequency of monitoring for hydrogen fluoride, heavy metals and dioxins is not sufficient and should be more frequent.	Improvement conditions IC10 and IC11 require the operator to carry out a programme of dioxin and mercury monitoring over a period of frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether emissions can be considered stable. Monitoring frequency will only be reduced if this can be demonstrated. Periodic measurement of HF will be carried out at the ERF. Continuous measurement of HF is not proposed on the basis that the acid gas abatement system will operate to a design guarantee that the emission limit for HCl will not be exceeded.
Concern about existing odour issues at the Biffa site nearby to the proposed facility and therefore limited confidence on the proposed control measures for odour.	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.
Comments about noise and dust impacts from construction.	Emissions produced by construction are not within our remit.
Reference to their recommendation for monitoring of dust during the construction phase.	Emissions produced by construction are not within our remit.

Response Received from South Downs National Park Authority on 28/05/2021	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No comments provided	No action required

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 and Parish Council

Representations were received from North Horsham Parish Council, who raised the following issues.

Response Received from North Horsham Parish Council on 17/06/2021	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Concerns that no consideration has been given to turbulence created by aircraft impacting particulate emissions.	We are satisfied that the relevant environmental standards (ES) for pollutants emitted from the facility will not be exceeded as a result of pollutants emitted from the Installation as set out in section 5.2 of this decision document.
Concerns over emissions from vehicular movements impacting on air quality.	Impacts of offsite vehicular traffic are within the remit of the local planning authority and are not within the remit of the Environment Agency. The environmental risks from vehicle movements on site have been assessed in the air quality risk assessment and we consider the risk not to be significant.
Concern over vehicles generating odour.	Vehicles operating outside of the installation is within the remit of the local planning authority. We are satisfied that the proposed control measures will prevent any significant emissions of odour from the operations on the site. Section 6.5.4 has further details.
Concern over vehicles causing noise.	Only noise from traffic movements on

	the installation are within the remit of the Environmental Permitting Regulations. We audited the Applicant's final noise assessment. We are satisfied that the revised noise assessment was appropriate and that noise will not be a significant issue. Pre operational condition PO9 requires final confirmation of sound power levels of the air cooled condensers on site to ensure that the noise risk is in line with that assessed as part of the permit application.
Concern about vehicles causing a safety hazard and loss of amenity for residents.	Movement of vehicles outside of the installation is not within our remit.
Concern about vehicles using the site causing congestion.	Movement of vehicles outside of the installation is not within our remit. The location of the site is an issue relevant for the planning process.
Request for evidence to be provided that the National Planning Policy Framework is being adhered to.	Wider issues of policy are outside our remit. We have to assess the environmental impacts of what is proposed which is an activity that can be authorised under EPR.
Confirmation that the Council also support the concerns raised by the No Incinerator 4 Horsham Community Group.	See section (b) below for details of this response and a summary of actions taken / how this has been covered.

Representations were received from MP Jeremy Quinn, who raised the following issues.

Response Received from MP Jeremy Quinn	
We received a number of response from MP Jeremy Quinn. The concerns raised are outlined below:	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Concern whether documents relating to the Application would be available during the initial advertising and consultation period.	The consultation section of this decision document sets out how we publicised the application. We are satisfied we have fulfilled our obligations in this regard. See the consultation section of this decision document for more information.
Concern that there were missing documents during the advertising of the Application.	We did not consider that any documents required for duly making of the Application were missing.

Concern that the advertising period should be extended to allow adequate time for the public to view the Application documents.	We extended our advertising period from our legal obligation of 4 weeks to 11 weeks to ensure that the public and consultees had adequate time to access the Application documents.
Concern about the amount of hazardous and non hazardous waste which will be going to the incinerator and its impact on residential streets.	No hazardous waste will be input to the incinerator. Movement of vehicles outside of the installation is not within our remit.
Concern about the carbon emissions from the site and its impact on Net Zero.	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. Our assessment of global warming potential is covered in sections 6.3 and 6.6 of this decision document.
Concern about whether the energy generated will be available for the North Horsham development.	See section 4.3.7 for our assessment of CHP ready and Article 14 relating to energy efficiency.
Concern about the potential impact on the local natural environment.	We have assessed the potential impact of the proposed operations on sites of conservation and are satisfied that the proposed installation would not cause significant pollution if the process contribution is less than 100% of the relevant Critical Level or Load. See section 5.4 for further detail.
Concerns Regarding the Assessment of the Health Impacts of Municipal Waste Incinerators	The Applicant submitted a Human Health Risk Assessment (HHRA) that considered the 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). Further details are in section 5.3 of this decision document.

b) Representations from Community and Other Organisations

Representations were received from No Incinerator 4 Horsham Community Group and from the Countryside Charity, Sussex. A summary of their comments and any action taken or how this has been covered are set out below.

Response Received from		
Minded to decision document: 16/05/22	Page 114 of 141	Variation Application Number EPR/CB3308TD/V002

No Incinerator 4 Horsham Community Group	
We received a number of submissions from No Incinerator 4 Horsham Community Group which included attached supporting documents and reports. The main concerns identified are split into 6 sections in the document submitted by the group as follows:	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
General concerns	
Concern about lack of public consultation by the Environment Agency.	The consultation section of this decision document sets out how we publicised the application. We are satisfied we have fulfilled our obligations in this regard. See the consultation section of this decision document for more information.
Concern about Application documents being unavailable for review.	The consultation section of this decision document sets out how we publicised the application. Application documents required for duly making of the Application were available to view during the initial consultation. Where we received additional documents during the determination, we made these available via our Citizen Space page. All Application documents required for the determination of the variation are available during the 'Minded to' consultation. We are satisfied we have fulfilled our obligations in this regard.
Concern about errors in referencing in the Application.	We did not consider that any errors in referencing within the Application impacted on the information available for determination of the variation.
Management activities	
Concern about whether the Applicant has the necessary experience to build and manage an incinerator.	We have assessed the applicant's competence. See section 4.3.2 for further details.
Concern about no CHP provision.	See section 4.3.7 for our assessment of CHP ready and Article 14 relating to energy efficiency.
Concern about the amount of electricity proposed for generation from the incinerator.	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

	decision document.
Concern about a lack of clarity of the tonnage of hazardous and non-hazardous waste tonnage proposed for input to the facility.	The only hazardous waste which will be accepted onto site is asbestos. No treatment or incineration of asbestos will be permitted on site. We requested additional information on the quantity of hazardous waste to be stored at the facility. Further information on this can be found in section 4.3.6 of this document. The maximum tonnage of waste to be accepted is specified in the waste tables in the permit.
Concerns about information missing from the mass balance diagram.	We consider that the mass balance diagram with the other documentation in the Application gives us adequate information about the inputs to and outputs from the site.
Concern about ash and hazardous residues being transported off site.	We consider that the ash and residues will be handled and disposed of appropriately.
Operations	
Concern about the content of the risk assessment.	We have assessed the environmental risk assessment submitted and are satisfied that it demonstrates that the facility will not pose a significant risk to human health or the environment. See section 5 of this decision document for further details.
Concern about contradictions in numbers and missing numbers relating to functioning of the plant.	The Applicant is required to provide us with adequate information at the determination stage to demonstrate that the environmental impact associated with the facility would not be significant. Additional information is required to be submitted through pre operational conditions and improvement conditions and will be assessed by the Environment Agency.
Concern about lack of information on processes and techniques used to minimise risks to As Low As Reasonably Practicable (ALARP).	We have assessed the environmental risk assessment submitted and are satisfied that it demonstrates that the facility will not pose a significant risk to human health or the environment. See section 5 of this decision document for further details.

Emissions and monitoring	
Concern about lack of in-combination impact in the odour management plan.	We consider that the odour management plan sets out adequate measures to control odour so that it will not result in odour pollution outside of the installation boundary. Condition 3.4 of the permit enables us to request an updated Odour Management Plan if necessary.
Concern about a lack of pest management plan.	A Pest Management Plan was submitted with the Application. We consider this includes appropriate techniques to minimise the risk associated with pests. Condition 3.7 of the permit enables us to request an updated Pest Management Plan if necessary.
Concern about the Construction Dust Assessment being out of date.	Emissions produced by construction are not within our remit.
Impacts	
Concern about conservation sites within 2km of the proposed facility.	We have assessed the potential impact of the proposed operations on sites of conservation and are satisfied that the proposed installation would not cause significant pollution if the PC is less than 100% of the relevant Critical Level or Load. See section 5.4 for further detail.
Concern about lack of plans for protection of species.	We have considered impacts on sites of nature conservation and have concluded that the impacts are unlikely to result in significant pollution at the sites as set out in section 5.4 of this decision document.
Concern about release of toxic pollutants from the proposed incinerator.	We are satisfied that the relevant environmental standards (ES) for pollutants emitted from the facility will not be exceeded as a result of pollutants emitted from the Installation.
Concern about the background data used in the noise impact assessment.	We audited the Applicant's noise assessment and have carried out sensitivity checks. We required additional information relating to the background monitoring. We are

	satisfied that the revised noise assessment was appropriate
Concern about release of carbon dioxide from the proposed incinerator.	Our assessment of global warming potential is covered in sections 6.3 and 6.6 of this decision document.
Concern about breach of incinerator emission limits.	The operator would be required to report any exceedance of emission limits to us. They would be required to take actions to resolve any exceedances and outline these actions and timescales to the Environment Agency. In certain circumstances they would be required to shut the incinerator down if an exceedence occurred.
Concern about the lack of a site closure plan.	A site closure plan will form part of the EMS that is subject to pre-operational condition PO1. Section 4.2.3 of this decision document has further details.
Best available techniques	
Concern because a catalytic bag filter system has not been proposed.	We are satisfied that we have assessed BAT for abatement of pollution in an appropriate way. The way we have done this is set out in section 6 of this decision document.

Response Received from	
The Countryside Charity, Sussex	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
General concerns	
Concern that the BAT Assessment was not made available during the advertising and consultation of the Application.	The document 'Appendix G – BAT Assessment' was made available during the advertising and consultation of the Application.
Concern that the proposal is not in line with the Environment Agency's plan 'EA2025 Creating a Better Place'.	We assess the environmental impacts of what is proposed in an activity that can be authorised under EPR. We use proportionate, risk based regulation to protect the environment. We are satisfied that the relevant environmental standards (ES) will not be exceeded and that the proposed control

	measures for emissions pollutants are appropriate.
Operations	
Concern that the facility would rely on HGVs.	Guidance specific to the sector does not specify that an alternative to HGVs is BAT. 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 e.g. use of particular types of vehicle, are outside our remit.
Emissions and monitoring	
Concern about the levels of emissions of nitrous oxides from the facility.	We are satisfied that the relevant environmental standards (ES) for pollutants emitted from the facility will not be exceeded as a result of pollutants emitted from the Installation. Improvement condition IC5 requires the operator to assess the performance and optimisation of the abatement plant for minimisation of nitrous oxides.
Concern about a lack of quantification of how much ozone would be created by the process and what impact it would have.	Our assessment of global warming potential (GWP) is covered in sections 6.3 and 6.6 of this decision document.
Concern about the findings of a case study by Zero Waste Europe from November 2018.	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.
Concern that emissions of greenhouse gases are not calculated and quantified for the lifetime of the facility.	Our assessment of GWP is covered in sections 6.3 and 6.6 of this decision document.
Concerns that emissions from the facility could contribute to climate change and that impacts on climate change should be taken account in the Application.	Our assessment of GWP is covered in sections 6.3 and 6.6 of this decision document.
Impacts	
Concerns that deposition rates and concentrations of pollutants have	The long term Environmental Standards take into consideration

been stated for the lifetime of the facility and what consequences they will have on people and the environment.	potential long term impacts on human health and the environment. We are satisfied that the relevant pollution standards (ES) will not be exceeded due to emissions from the Installation.
Concern that cumulative impact of pollutants has not been considered in the impact assessment.	The Applicant's health risk assessment included consideration of accumulation in the food chain. The impact from dioxins/furans is described in more detail in section 5.3 of this decision document. We are satisfied that potential impacts will not be significant.
Concern about how the dimensions of the incinerator were determined for the Human Health Impact Assessment.	We have audited the Human Health Risk Assessment submitted with the Application and are satisfied that appropriate parameters have been used for the assessment.
Concern that a justification for PCDD/F emission levels assumed for the Human Health Impact Assessment is not given.	We have audited the Human Health Risk Assessment submitted with the Application and are satisfied that appropriate parameters have been used for the assessment.
Concern that toxicity data for pollutants that would be emitted by the facility was not included in the Application.	Data relating to the pollutants emitted by incinerators of this type is widely available and the associated Environmental Standards where applicable are available on our website.
Best available techniques	
Concern that design of the furnace has not been finalised.	The design of the furnace will be finalised prior to commissioning. Pre-operational condition PO6 and Improvement condition IC4 require verification that the relevant conditions for adequate combustion of the waste is achieved by the facility.
Concern whether the facility is capable of combusting the chemical complexity of the waste listed.	We are satisfied that the proposed facility will be able to combust the wastes proposed for incineration and the relevant application documents are linked to the permit through operational techniques table S1.2. Condition 2.3.9 is included in the permit specifying the required waste

	combustion temperature in line with IED. Pre-operational condition PO6 and Improvement condition IC4 require verification that the relevant conditions for adequate combustion of the waste is achieved by the facility.

c) Representations from Individual Members of the Public

A total of 132 responses were received from members of the public. Their comments are summarised below. Many responses overlapped in terms of content therefore we have only included comments below that are not already addressed above in our response to queries from statutory consultees, local MPs, parish/town community councils and community groups/organisations.

Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Comments about air emissions and air risk assessment	
Several reports, papers and articles were cited to support the claim that the incinerator would cause health impacts due to air emissions.	We considered the reports, papers and articles that were submitted. Our view is that the Installation will not have a significant impact on health. This view is supported by Public Health England. Further details on in section 5.3 of this decision document.
Concern that the development at the Land North of Horsham is not included as a receptor.	The Applicant has reported maximum concentrations in the modelled grid, these represent 'worst case' predictions and do not necessarily represent public exposure. However, the predicted impacts have been shown to be not significant at the point of maximum impact and therefore at the Land North of Horsham proposed development site. As a result making predictions at further discrete receptor locations is not required as these will be less than the reported maximums which are already considered to be permissible and not cause any significant air quality pollution issues.
Concern that the meteorological data used in the air dispersion model was out of date.	We carried out sensitivity analysis on meteorological data as part of determination. As a result of the sensitivity assessment we concluded that using a different set of metrological data would not have changed the conclusions of the air quality impact assessment.
Concern that the meteorological data does not adequately reflect local	We carry out sensitivity analysis on meteorological data as part of determination. As a result of the sensitivity assessment we

conditions and may not take inversions or localised weather conditions including fog.	concluded that using a different set of metrological data would not have changed the conclusions of the air quality impact assessment. The dispersion model used by the Applicant does not explicitly predict complex conditions relating to vertical profiling such as temperature inversion, complex terrain stagnation or fumigation. There are alternative dispersion models that can model these conditions. However, we have conducted a number of case studies investigating the likely dispersion impacts of such conditions, including the assessment of the initial Rookery Pit ERF application in 2011, and found that although these conditions could lead to increases in the long-term and short-term Process Contributions (PCs) the variability is within any modelling uncertainties. As a result the Applicant's conclusions would not be likely to change.
Concern that emissions might lead to exceedences of Air Quality Standards.	We are satisfied that the relevant pollution standards (ES) will not be exceeded due to emissions from the Installation.
Concern about the methodology of the dioxin impact assessment.	We audited the Applicant's methodology and are satisfied that the method used was appropriate.
Concern that ash residues could be released to atmosphere.	Bag filters will minimise the emission of particles relating to APC residues to atmosphere. Fugitive emission of bottom and or APC residues will be minimised. The measures are set out in section 6.5.3 of this decision document.
Comment that periods of OTNOC could result in significantly higher levels of airborne dioxin emissions.	The Permit allows emission limits to be exceeded for short periods during certain circumstances, known as abnormal operation. The reason we allow this is explained in section 5.5 of this decision document. We have assessed the impact from abnormal operation and we are satisfied that there will not be a significant impact, this is also explained in section 5.5. Pre operational condition PO1 requires a full OTNOC management plan to be prepared in accordance with BAT 18 of the BAT Conclusions which will form part of the Environmental Management System. The Operator will be required to identify potential OTNOC scenarios and any required monitoring in their management plan and will require our approval of scenarios before they can be classed as OTNOC.

Concern that the construction dust assessment is out of date.	Emissions produced by construction are not within our remit.
Concern over increased emissions at start-up and shut-down and.	The combustion units will be fired on a support fuel (gas oil), to ensure that the temperature meets the required levels before waste is permitted to be fed for incineration. This support fuel is automatically fed if the temperature of the furnace falls below a permitted level. We do not consider the impact at start-up and shut-down would be significant.
Concern that emissions to air of pollutants from the incinerator will impact human health.	We are satisfied that the relevant environmental standards (ES) for pollutants emitted from the facility will not be exceeded as a result of pollutants emitted from the Installation.
Concern over the impact on areas where background levels already exceed the Environmental Standards.	We have considered impacts at AQMAs and are satisfied that the impact will be insignificant for the relevant pollution at the AQMAs and that the contribution from the Installation will be negligible. Section 5.2.4(i) of this decision document has further details. We have also considered impacts on sites of nature conservation and have concluded that the impacts are unlikely to result in significant pollution at the sites as set out in section 5.4 of this decision document.
Concern over mercury impacts including accumulation. Concern over accumulation of other pollutants.	The impacts of mercury were compared to the ES which is considered to be protective for human health impacts. The exception would be if a fish farm was nearby in which case a human health impact assessment to consider mercury intake via fish would be required. There are two carp fisheries within 10km of the Installation, however these are catch and release fisheries and therefore we consider that the risk of metals getting into the food chain via this route is low. Specific consideration of accumulation of metals is not required in this case. We are satisfied that impacts from mercury will not be significant. Dioxins and furans can accumulate in the food chain. This is considered in section 5.3 of this decision document. The issue of accumulation is covered in section (a) above. 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. Some of the key documents we have referenced

	in relation to our conclusions are as follows: United States Environmental Protection Agency – Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. September 2005 www.epz.gov/osw Risk Assessment of Dioxin releases from Municipal Waste Incinerations, Her Majesty's Inspectorate of Pollution. March 1996
Concern about the lack of information about potential impacts on water from emissions to air including acid rain and reservoir pollution.	Acid rain can be caused by emissions of large amounts of acid gases. Historically large coal fired power stations without flue gas desulphurisation contributed to acid rain. The emission of acid gasses from the Installation will not be at a level that could cause acid rain or pollution of reservoirs. We consider the proposed control and mitigation measures to minimise emissions of acid gases from the installation to be BAT.
Concern about impacts from dust including fine particulates.	We are satisfied that the relevant environmental standards (ES) will not be exceeded and that the proposed control measures for emissions of dust are appropriate.
Concern over impacts on air quality from additional lorries using nearby roads and the cumulative impact with existing traffic.	The planning authority determines whether the activity is an acceptable use of the land. It considers matters such as traffic, which do not form part of our Environmental Permit decision making process. We consider the concern about increased traffic is outside of the remit of the Environment Agency.
Concern expressed over the emission of benzene, phenols, methane and other hydrocarbons.	The impact of VOCs was assessed assuming it is all butadiene. Even when making this worst case assessment, impacts were screened out. Section 5.2 has further details.
Concern over the emissions of PCBs.	The Applicant considered PCBs in their impact assessment. The impact was shown to be insignificant. Further information is in section 5.2 of this decision document.
Concern expressed in relation to the UKWIN report about particulate pollution and regulation.	We did not agree with the claims made in this report. Our response to the UKWIN report can be found at the link below: http://www.esauk.org/download_file/view/256/204
MSW incinerators are the dominant source of dioxin emissions to air. A 1997 HMIP report was cited.	Emissions of PCDD/F (dioxins and furans) are much lower from modern waste incinerators regulated under the IED. Modern plants make up a small proportion of total dioxin/furan emissions.
Concern over fugitive dust.	We are satisfied that the control measures will prevent significant emissions. Section 6.5.3 contains further details.
Concern that vehicle	The Dust Management Plan submitted with the

movements could lead to dust.	Application sets out measures to avoid dust on roadways including sweeping them and dampening them if required.
Concern over the cumulative, long-term impact from persistent organic pollutants.	The Applicant's health risk assessment included consideration of accumulation in the food chain. The impact from dioxins/furans is described in more detail in section 5.3 of this decision document. We are satisfied that potential impacts will not be significant.
Concern that decisions are made on available rather than complete information.	The Applicant is required to provide us with adequate information at the determination stage to demonstrate that the environmental impact associated with the facility would not be significant. Additional information is required to be submitted through pre operational conditions and improvement conditions and assessed by the Environment Agency.
Comments about other health impacts	
Several reports, papers and articles were cited to support the claim that the incinerator would cause health impacts.	We considered the reports, papers and articles that were submitted. Our view is that the Installation will not have a significant impact on health. This view is supported by Public Health England. Further details on in section 5.3 of this decision document.
Concern over impacts on children's quality of life schools within the vicinity of the incinerator.	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. We are satisfied that the relevant environmental standards (ES) will not be exceeded and that the proposed control measures for emissions pollutants are appropriate.
Reference to the legal case of Ella Adoo-Kissi.	We are satisfied that the relevant environmental standards (ES) will not be exceeded due to emissions from the Installation.
Concerns over impacts on health during construction.	Potential impacts during construction are not within our remit and are assessed during the planning application process.
Concerns over impacts on health during decommissioning.	A site closure plan will form part of the EMS that is subject to pre-operational condition PO1. This will cover decommissioning. Section 4.2.3 of this decision document has further details.
Concern over impacts on health for those with respiratory illnesses.	The Application contained an air quality impact assessment. The impact assessment concluded that there would be no significant impacts on human health. We agree with these conclusions. The Environmental Standards are applicable to all sensitive receptors.
Concern about potential	A Pest Management Plan was submitted with the

impacts from the presence of rodents and flies and lack of plans in place to manage them.	Application. We consider this includes appropriate techniques to minimise the risk associated with pests. Condition 3.7 of the permit enables us to request an updated Pest Management Plan if necessary.
Concern that the toxins released from the burning of household rubbish are a danger to public health.	Our view is that the Installation will not have a significant impact on health. This view is supported by Public Health England. Further details on in section 5.3 of this decision document.
Statement that there is evidence showing increases in serious illnesses where these facilities have been installed near built up areas.	Our view is that the Installation will not have a significant impact on health. This view is supported by Public Health England. Further details on in section 5.3 of this decision document.
Comment that precautionary principal should be applied.	Section 5.3 of this decision document covers 'The Precautionary Principle'. 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 UK Health Security Agency (formerly PHE) maintain their view on impacts from incineration.
The incinerator could have an impact on mental health.	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.
Concern that in the future incineration could be found to be linked to health impacts.	If this was to occur, we would take appropriate action as required to prevent any Installation causing a significant impact. Permits are reviewed periodically.

Concern expressed over the method used for the HHRA.	We audited the Applicant's methodology and are satisfied that the method used was appropriate.
Concern that some people could be more sensitive than others to emissions.	The ES are set to protect populations as a whole and are derived on data based on differing population dynamics.
Concern over the cancer risk estimate benchmark that was used in the HHRA.	In the HHRA the Applicant included the US-EPA cancer risk methodology. This is not used formally in the UK and we have not used this in our assessment. The way we have assessed health impacts is covered in section 5.3 of this decision document.
Concern that scientific studies assessing the health risk of municipal waste incinerators indicate adverse health effects for example cancer.	Our view is that the Installation will not have a significant impact on health. This view is supported by Public Health England. Further details on in section 5.3 of this decision document.
Concern that TDI has been reduced tenfold following disparity between limits set by the US and EU.	We checked the methodology and TDI used within the Applicant's health risk assessment and concluded that they are appropriate. The impact from dioxins/furans and the relevant TDI selection is described in more detail in section 5.3 of this decision document.
Comments about noise impacts	
Concern about impacts from noise and vibration from the operation.	We audited the Applicant's final noise assessment. We are satisfied that the revised noise assessment was appropriate, and that noise will not be a significant issue. See section 6.5.5 for further information.
Concern over noise and vibration impacts from additional lorries and the cumulative impact with the lorries already using the road.	Only noise from traffic movements on the installation are within the remit of the Environmental Permitting Regulations. We audited the Applicant's final noise assessment. We are satisfied that the revised noise assessment was appropriate and that noise will not be a significant issue.
Concern over increased noise from traffic as a result of disposal of waste produced by the incinerator.	Only noise from traffic movements on the installation are within the remit of the Environmental Permitting Regulations. We audited the Applicant's final noise assessment. We are satisfied that the revised noise assessment was appropriate and that noise will not be a significant issue.
Concern that background monitoring may not be representative as dated from 2016.	We audited the Applicant's noise assessment. We required additional information including updated background monitoring. We are satisfied that the revised noise assessment was appropriate.
Concern over vibration	We are satisfied that vibration will not be a

impacts on houses.	significant issue.
Comments about odour impacts	
Concern over odour impacts for those that live near to the site including in-combination impacts with existing sites.	We are satisfied that the proposed control measures will prevent any significant emissions of odour from this site. Section 6.5.4 has further details.
Concern over effectiveness of negative pressure in controlling odour in the reception hall.	The use of combustion air in the furnace to generate negative pressure in the reception hall is used in many incineration plants and generally works well to control odour. We are satisfied that there will not be a significant impact from odour. Improvement condition IC8 has also been set to check that it is working effectively.
Concern that the meteorological data does not adequately reflect local conditions and may not take inversions or localised weather conditions.	We have assessed the use of the meteorological data used by the Applicant during the determination and are satisfied that it is representative. See section 5.2 for further information.
Concern over odorous wastes being received.	Some wastes do have the potential to cause odour. However all waste will be delivered to the reception building which will be kept under negative pressure.
Concern that the current waste operation has resulted in odour impacts.	The operator has submitted an Odour Management Plan which we consider contains adequate measures to control odour from the facility. There are no substantiated odour complaints known to the Environment Agency in relation to the existing site.
Comments about impacts on wildlife	
Concern about the impact of the proposed operations on wildlife sites and rivers.	As part of our assessment we considered the potential impacts on sites of conservation. See section 5.4 for our assessment.
Concern about the impact of building of a new road on wildlife.	Potential impacts during construction of the road are not within our remit.
Concern over the cumulative impact.	The Applicant's health risk assessment included consideration of accumulation in the food chain. The impact from dioxins/furans is described in more detail in section 5.3 of this decision document. We are satisfied that potential impacts will not be significant.
Comments about other impacts	
Concern over the visual impact of the stack.	Visual impact is not within our remit.
Concern over the visual impact of a large building.	Visual impact is not within our remit.
Concern about light pollution.	Pollution from light is primarily a concern for considering visual impacts and as such covered

	by the planning process. In any event light pollution is not likely to have a significant effect on health or the environment.
General Comments about impacts	
Concern about how the operations will fit within the Paris Climate Agreement.	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.
Concern that green spaces are being reduced and that the planet needs to be protected for the next generation.	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.
Concern about impacts at many nearby receptors including any new housing developments.	We are satisfied that there will not be a significant impact from the Installation. Section 5 covers the risk assessment. The new housing development referenced Land North of Horsham was taken into account in both the noise and air quality impact assessment.
Concern over the impacts from the Installation combined with existing pollution.	Background levels of pollution were considered in the risk assessments where appropriate as discussed in this decision document.
Comments about BAT, emissions limits and control measures	
Concern over whether the incinerator will use BAT.	We are satisfied that we have assessed BAT in an appropriate way. The way we have done this is set out in section 6 of this decision document.
Concern about whether the abatement technology, used in order to clean the exhaust gases, is the best available.	We are satisfied that we have assessed BAT in an appropriate way including for abatement. The way we have done this is set out in section 6 of this decision document.
Comment that there is not adequate space to abate pollution through planting of vegetation.	We are satisfied that we have assessed BAT for abatement of pollution in an appropriate way. The way we have done this is set out in section 6 of this decision document.
Concern that the Fire Protection Plan states that the bunker is never to be emptied and cleaned.	Schedule 5 notice response dated 15/03/2022 confirmed that the waste at the bottom of the bunker (including corners near the base) will be dug out as far as practicable during planned outages and be subsequently processed once the plant restarts.
Concern was expressed over the level of information in the Fire Prevention Plan about hot loads.	We are satisfied that the Fire Prevention Plan contains adequate information about hot loads. The Fire Prevention Plan also contains provision for the plan to be reviewed and pre operational condition PO10 requires further update prior to commissioning of the installation.

Concern about where the fines which are produced by the shredding go and that these could be a fire risk or could cause airborne emissions or groundwater leachate.	A dust management plan will be in place. We have assessed this and consider that it contains adequate control measures to control dust. There will be no emissions to groundwater from the installation.
Concern expressed that the Applicant did not consider all forms of incineration technology.	We are satisfied that we have assessed BAT in an appropriate way. The way we have done this is set out in section 6 of this decision document.
Concern that the installation is oversized for the volume of waste generated in the local area.	We are satisfied that we have assessed BAT in an appropriate way. The way we have done this is set out in section 6 of this decision document. The local waste strategy is not something that we can take into account during the determination of an Environmental Permit.
Concern over whether the Installation will be able to keep up to date with changing technology.	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 regulatory powers necessary to vary the Permit if required.
Comments about energy efficiency	
Statement that the proposal does not meet the R1 criteria that it is required to meet in order to be defined as a Recovery operation.	An R1 assessment was submitted based on the design parameters. We have assessed this and agree with the operator's conclusions that based on the data currently available that the incinerator can be classified as a Recovery activity. The Applicant will be required to update and resubmit the assessment if the plant becomes operational to validate the data and conclusion.
Concern that a demand for heat from either the industrial or resident population has not been established.	Section 4.3.7 sets out our assessment of CHP ready and Article 14 of the Energy Efficiency Directive.
Concern over the amount of energy that will be recovered from the waste.	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 decision document.
Query about whether the R1 calculation has been checked and what the correct threshold is.	Our view on the R1 calculation provided in the Application is set out in section 4.3.7 of this decision document. We requested additional information relating to the R1 and received an updated version on 17/03/22.
Comments about pollution of water and land	
Concern that there could be pollution of waterways or groundwater from water	There are no planned emissions to land or groundwater. The only discharge to surface water permitted is discharge of uncontaminated

emissions.	surface water. Pre operational condition PO10 is in place requiring the operator to submit a finalised drainage plan prior to commissioning including details of planned discharges, containment and interceptors.
Concern about the impact of potential surface water run off in a south easterly direction to the lagoon/pond within Biffa's control under the Environmental Permit for the adjacent MBT/AD Facility. (64)	The only discharge to surface water permitted is discharge of uncontaminated surface water. Pre operational condition PO10 is in place requiring the operator to submit a finalised drainage plan prior to commissioning including details of planned discharges.
Concern that the Applicant does not cover impact on surface water or pollution prevention measures for waterways.	The only discharge to surface water permitted is discharge of uncontaminated surface water. Pre operational condition PO10 is in place requiring the operator to submit a finalised drainage plan prior to commissioning including details of planned discharges.
Concern over elevated levels of substances identified as ground contaminants and the potential impacts from those substances.	We are satisfied that any ground contamination does not pose a pollution risk from operation of the Installation. The operator has set out the pollution prevention measures that will be put in place to prevent pollution of ground and groundwater.
Concern that dioxins could contaminate ground and water.	The HHRA considered uptake of dioxins through the food chain including plants and water. The assessment showed no significant impact, we are therefore satisfied that ground and water will not be significantly impacted.
Concern that emissions from the incinerator could impact on produce being grown in gardens, allotments and fields.	The Applicant's health risk assessment included consideration of accumulation in the food chain. 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.
It is not clear where surface water will discharge to.	The only discharge to surface water permitted is discharge of uncontaminated surface water. The application states that surface water will be discharged via in interceptor. Pre operational condition PO10 is in place requiring the operator to submit a finalised drainage plan prior to commissioning including details of planned discharges.
Concern that a site closure plan has not been submitted.	A site closure plan will form part of the EMS that is subject to pre-operational condition PO1. Section 4.2.3 of this decision document has further details.
Concern over lack of plan for site decontamination post	A site closure plan will form part of the EMS that is subject to pre-operational condition PO1.

operation.	Section 4.2.3 of this decision document has further details.
Comments about monitoring	
Concern about who will monitor and regulate what is being burnt and any ongoing impact on public health and the environment.	The Environment Agency will be the regulator of the facility. The operator will be required to monitor what is being burnt and maintain records as part of their EMS. They will also be required to report this information to the Environment Agency. We consider that there is no significant risk posed by the installation and that the permit contains conditions to minimise impact on public health and the environment as set out in section 5.2 and 5.3 of this decision document.
Concern that Operator will carry out the monitoring.	The Operator's monitoring will have either MCERTS certification or MCERTS accreditation as appropriate. MCERTS is the Environment Agency's Monitoring Certification Scheme. If monitoring complies with MCERTS we can have confidence in the monitoring of emissions. In addition we will carry out audits of the Operator's monitoring. If we found problems with the monitoring we would take action to ensure this is rectified, and could do our own monitoring if required.
Concern that the sampling of flue gas and particulates are only snap shots in time.	A range of pollutants are required to be measured continuously and some sampled periodically. These frequencies are specified in guidance for this type of installation e.g. from IED and the BAT Conclusions.
Monitoring results should be publicly available.	The Permit requires that monitoring results are reported to the Environment Agency. We will make the reports available on our public register.
Monitoring of bio-accumulating heavy metals and dioxins should be carried out in the vicinity of the proposed incinerator.	Based on the HHRA submitted with the application and that we have audited, we do not consider that there is a requirement to monitor heavy metals and dioxins in the vicinity of the proposed incinerator. Monitoring of heavy metals and dioxins emitted by the incinerator would be required by the permit.
Concern that the emissions could vary considerably depending on what's being burnt and consequently emissions could exceed safe limits.	The impact assessment submitted with the Application is based on the worst case emissions that would be generated by the waste being accepted for incineration. The permit will contain emission limit values against which the Environment Agency will monitor compliance.
There should be automated alarm systems.	There are a number of alarm systems proposed for the facility e.g. to monitor the temperature of the furnace, flue gas abatement systems and emissions levels of pollutants in flue gases.

Concern about emissions monitoring at start-up and shut-down.	The emission limits do not apply at start-up and shut-down and so emissions monitoring would not be required. However we are satisfied that emissions during these periods will not lead to significant pollution.
There should be continuous monitoring.	A range of pollutants will be monitored continuously. The monitoring requirements are specified within the BAT Conclusions.
Concern that monitoring will not be audited independently.	The Environment Agency will audit the operator's monitoring. The Environment Agency is independent.
Comments about waste	
Concern that the facility will accept hazardous waste materials for treatment.	No hazardous waste will be accepted for treatment at the facility.
Concern that the quantities of non-hazardous waste and hazardous waste proposed for incineration are not clear.	No hazardous waste is proposed for incineration. The permit specifies which waste codes can be burnt in the incinerator. Waste acceptance criteria will be in place as part of the EMS which will specify the checks that will be carried out on incoming waste.
Concern about the receipt of asbestos on site and impacts on health.	Asbestos would be required to be received, stored and handled in line with appropriate guidance. Asbestos will not be treated on site.
Concern that the stack should have filters to prevent asbestos expelled from the chimney.	Asbestos will not be burnt on site and therefore no emissions of asbestos should be emitted via the incinerator stack. Asbestos would be required to be stored and handled in line with appropriate guidance.
Concerns about acceptance of Refuse Derived Fuel with no common standard or specification.	The permit specifies which waste codes can be burnt in the incinerator. Waste acceptance criteria will be in place as part of the EMS which will specify the checks that will be carried out on incoming waste.
Concern that that not all RDF will be mechanically sorted, especially fluids.	RDF will be put directly into the incinerator without prior sorting. No liquids will be input to the incinerator as specified in table S2.3.
The facility will still require around 25% of waste product to be further treated off site or buried.	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. We consider that the proposed facility including the proposed waste handling is BAT as set out in section 6 of this document.
Concern that the process flow diagram does not reflect the location of the waste processing hall.	We are satisfied that the plans provided in support of the Application show the location of the proposed waste processing.
Concern as to whether there will be sufficient capacity to	The waste bunker will have capacity for approximately 3.5 days worth of waste, we are

store the waste to prevent a backlog of waste.	satisfied that this will be a sufficient storage capacity. The Applicant stated that waste will not be accepted if there is insufficient storage capacity available.
Concern about storage time of waste in the bunker.	Bunker management techniques such as regular mixing and blending the waste with the crane are BAT and will be used to avoid long storage times.
Concern that the planned residence time of RDF in the 'Waste Processing Hall' is not specified.	The Application specifies residence times that waste will be stored in the Waste Processing Hall and ERF Storage Bunker.
Concern about how the gas and temperature in the bunker headspace will be monitored.	The bunker will be kept under negative pressure as set out in Section 6 of this documents. This will minimise the potential for build up of gas. The Application sets out how the bunker will be managed to ensure that the waste is not stored for long periods of time minimising the potential for self ignition of waste. A Fire Prevention Plan will be in place to minimise the risk of fire and set out measures of how a fire would be extinguished if it occurred. We consider the measures proposed combined with the pre operational condition for finalisation of the FPP reflect BAT for the installation.
Concern about whether the bunker has an enclosed headspace or whether it is an open vessel in an occupied, sealed building.	Vehicles will tip into the bunker from the tipping hall so it will not have a fully enclosed headspace. See section 6.5.4 for further information on odour control associated with the operation.
Concern about the contents and mix of the feedstock not being clear.	The permit specifies which waste codes can be burnt in the incinerator. Waste acceptance criteria will be in place as part of the EMS which will specify the checks that will be carried out on incoming waste. Waste blending and mixing will be carried out in the waste bunker using an overhead crane.
Concern about potentially recyclable material being burnt.	The incineration plant will take some municipal waste, which has not been source-segregated or separately collected or otherwise recovered, recycled or composted. Conditions 2.3.5 and 2.3.6 in the permit specify that separately collected fractions of waste can only be incinerated if: • they are unsuitable for recovery by recycling; and • incineration delivers the best environmental outcome in accordance with regulation 12 of the Waste (England and Wales) Regulations 2011.

Comments about residues	
Concern over the potential for lorries carrying fly ash to be involved in accidents and release load.	Movement of traffic external to the installation is not within our remit.
Concern over the production of hazardous waste.	APC residues will be hazardous waste but will be handled and disposed of appropriately.
Concern that residues will contain persistent organic pollutants.	Incineration is a method of destroying persistent organic pollutants. The residues could contain a level of persistent organic pollutants (for example the APC residue will contain dioxins removed from the flu gas with activated carbon). However we are satisfied that the wastes will be handled and recovered or disposed of appropriately. Further details are in section 4.3.9 of this decision document.
Comments about regulation	
Statement that odour issues relating to existing site are reported regularly to the Environment Agency and action is not taken.	An odour management plan will be in place. We have assessed this and consider that it contains adequate control measures to control odour. We do not know of any substantiated odour complaints relating to the existing site in the past.
Statement that the Environment Agency are investigating the link between heavy rainfall and emissions of odour and flies from the existing waste site.	The Environment Agency are not investigating a link between heavy rainfall and emissions at the existing waste site operated by Britaniacrest Recycling.
Concern over whether the Environment Agency have sufficient knowledge and skills to regulate the site.	We are satisfied that the Environment Agency has the skills and experience to regulate the site.
Concern over whether the Environment Agency have sufficient resources to deal with an incident.	A major incident is unlikely from this type of plant, however if one was to occur, we are satisfied we have sufficient resources to deal with an incident.
Comment that permit conditions are sometimes breached.	The permit requires the Environment Agency to be notified of any breaches of permit conditions. In the instance of a breach the operator would be required to take action needed to rectify the breach, minimise the recurrence of a future breach and inform the Environment Agency of the actions they have taken to support this. The Environment Agency will carry out inspections of the site an audits against the conditions set out in the permit.
Comments about the Applicant	
Concern about whether the applicant has sufficient	We have assessed the applicant's competence. See section 4.3.2 for further details.

experience.	
Concern about whether there have been adverse comments from local residents regarding existing sites run by the operator.	We have assessed both the competence of the operator (see section 4.3.2 of this decision document), and the environmental risk associated with the proposal (see section 5 of this decision document) and the best available techniques assessment (see section 6). We consider the proposal will not cause significant impact on the environment and appropriate techniques are proposed to minimise emissions from the site.
Statement that the Applicant has been fined by Horsham District Council for litter being dropped from their lorries and that they have refused to provide litter picking teams resulting in high levels of litter.	Waste will be delivered in enclosed delivery vehicles and tipped into the bunker within the reception building. We are satisfied that based on the proposed control measures set out in the Application that impacts from litter are unlikely to occur. See section 6.5.3 on fugitive emissions for further information.
Statement that odour issues relating to existing site are reported regularly to the Operator in relation to the existing waste site and no action ever appears to be taken.	An odour management plan will be in place. We have assessed this and consider that it contains adequate control measures to control odour. We do not know of any substantiated odour complaints relating to the existing site in the past.
Concern about the Applicant's business model.	The way in which we have assessed the competence of the operator is set out in section 4.3.2.
Concern as to whether employees will have sufficient experience/training.	Qualifications and experience and training requirements will all be required as part of the EMS. The Environment Agency will carry out inspections of the site an audits against the conditions set out in the permit.
The Applicant 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. The Applicant is required to be technically competent for the waste operation carried out on site as set out in condition 1.1.5.
Comments about accidents	
Concern about impacts on health during malfunctions.	Unavoidable malfunction of abatement plant is classed as abnormal operation and is covered in the tables above as well as in section 5.5. The occurrence of malfunctions will be minimised by the Operator's preventative maintenance

	programme. If a malfunction did lead to a Permit breach then we would take appropriate enforcement action.
Concern over the risk of explosion.	Our view is that there is not a significant risk of explosion from incineration plants.
Concern over storage of flammable materials.	We are satisfied that materials will be stored appropriately. A Fire Prevention Plan is in place which is required to be revised to reflect final design under pre operational condition PO10.
Concern that the Application does not contain an OTNOC, management plan.	Pre operational condition PO1 requires a full OTNOC management plan to be prepared in accordance with BAT 18 of the BAT Conclusions which will form part of the Environmental Management System.
Concern that the FPP lacks information on fire walls, quarantine area and risk from other activities on site.	The FPP covers these issues and we are satisfied with the measures proposed. The FPP is required to be updated prior to commissioning to reflect the final design of the plant in line with pre operational condition PO10.
Comments about other issues	
Statement that information submitted as part of the application was out of date.	Application documents do not have to be dated from a specific period. We carry out sensitivity analysis (for example, on meteorological data) as part of determination and may request additional information. This could include confirming that older documents are still correct and valid.
Concern that decisions are being made without the required consultation.	This permit variation application has been advertised and consulted on in accordance with our guidance. How we went about this is set out in section 2.
Concern about the timescales for public consultation.	This permit variation application has been advertised and consulted on in accordance with our guidance. Consultations periods for permit variations are defined in law and usually run for 20 working days (4 weeks). We extended the consultation on this variation to 6 weeks to allow people further time to submit comments. This consultation period was then subsequently extended further to 11 weeks.
Statement that the application was not advertised widely enough.	This permit variation application has been advertised and consulted on in accordance with our guidance.
Statement that the public were not updated regarding the consultation extension.	This permit variation application has been advertised and consulted on in accordance with our guidance.
Concern that a public engagement event was not held by the Environment	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

Agency.	extended consultation over a six week period. The information relating to the Application was available on the Citizen Space consultation page and a hard copy was placed in Horsham Library.
Concern that the Applicant has not engaged with members of the public or updated their website.	As part of the permit application determination we do not require the Applicant to engage with members of the public or update their website in relation to the Application.
Concern that the Application documents on Citizen Space are poorly labelled, not arranged in a logical order, not dated and there is no search facility.	The Application documents were uploaded to our Citizen Space page with titles as submitted by the Applicant. We consider the documents are labelled and ordered adequately for us to carry out our duly making assessment and subsequent determination. We agree that a search facility would be a positive update to our systems and have passed this comment onto the relevant team.
Request for a hard copy of the application to be provided in the local library.	A hard copy of the Application was placed in Horsham Library.
Concern that there was no provision for those who are visually impaired to access the Application.	This permit variation application has been advertised and consulted on in accordance with our guidance. How we went about this is set out in section 2.
Concern that comments could not be sent by post during the consultation.	We followed our guidance and encouraged people to comment online through Citizen Space or to contact us using the email address provided. If any other problems were encountered we requested that those wishing to comment on the application contacted our Customer Contact Centre.
Comment that the information provided during the advertising and consultation did not make it clear that the Application was being treated as a Site of High Public Interest.	This permit variation application is being treated as a Site of High Public Interest (SHPI).
Concern that the proposal is not in line with government policy to create a green 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.
Concern over whether the Environment Agency have sufficient knowledge and skills to assess the permit application.	We are satisfied that the Environment Agency has the skills and experience to assess the Application.
Concern that the proposal does not align with	We have to assess the environmental impacts of what is proposed which is an activity that can be

government commitment to achieving 'net zero' greenhouse gas emissions by 2050.	authorised under EPR. Wider issues of policy are outside our remit.
Concern that the proposal is not in line with the G7 meeting pledge.	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.
Concern about impacts on climate change.	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.
Concern that additional effort should go into creating bio-degradeable products.	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.
Concern that the options to reduce refuse, reuse, repair and recycle should be put into place ahead of incineration in accordance with the Waste Hierarchy in the Waste Framework Directive.	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.
Concern about the impact of aviation lights positioned on the stack.	Pollution from light is primarily a concern for considering visual impacts and as such covered by the planning process. In any event light pollution is not likely to have a significant effect on health or the environment.
Concern about increased traffic congestion resulting from the lorries associated with the operation.	Wider issues relating to transport are not within our remit.
Statement that the access road is too narrow.	Wider issues relating to transport including access are not within our remit.
Concern that the road network won't be able to cope with the increase in traffic.	Wider issues relating to transport are not within our remit.
Concern that there will be more HGV lorries being used by the installation.	Wider issues relating to transport are not within our remit. Measures to limit potential impacts from HGVs while on site, e.g. from dust or noise, are set out in the relevant management plans associated with the Application. We consider these measures appropriate to control emissions.
Statement that there have been many accidents on the nearby A road.	Wider issues relating to transport are not within our remit.
Comment that no sustainable	Wider issues relating to transport strategy are not

transport options have been considered as part of the proposal.	within our remit.
Concern that electrically powered vehicles should be used on site wherever possible.	Electrically powered vehicles are not a technique listed within the latest guidance or BAT Conclusions for the sector. An EMS is required to be maintained on site which includes frequent review of site operations and continual improvement in performance throughout the life of a permit.
Concern that the planning application for the proposed incinerator was dealt with by one local authority and the housing development by another.	The planning application process is not within our remit.
Comment that the site selected by the applicant is not appropriate for the proposal due to the size constraints.	Consideration of the location of the proposal is a planning consideration and is not within our remit.
Concern about the use of the land around the site.	Consideration of the location of the proposal is a planning consideration and is not within our remit.
Concern over the accuracy of the Application documents.	Where we required any clarification we requested this from the Applicant. We are satisfied that the documents including any amendments and clarifications are accurate. The Permit requires the plant to be operated as described in the Application.
Concern for in-combination impacts with other industry which may apply for an Environmental Permit.	Background levels of pollutants are taken into account within the environmental risk assessment.
Concern over whether Incineration is the best way to deal with the waste.	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. 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 decision document for more details.
Concern that incineration reduces 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.

Concern that incineration is a barrier to the 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 waste policy are outside our remit.
Concern that the UK already faces incineration overcapacity.	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.
Statement that if the proposal is not recovery, it should not be defined as a Recycling, Recovery and Renewable Energy development as this is misleading to the public.	The Applicant included an R1 assessment containing details relating to the proposed design of the plant and this indicated that the design of the plant could be considered a recovery operation. R1 status would need to be reapplied for during operation to validate the parameters used in the original R1 assessment in order for the plant to be categorised as a recovery operation.
Concern over litter.	Waste will be delivered in enclosed delivery vehicles and tipped into the bunker within the reception building. We are satisfied that based on the proposed control measures set out in the Application that impacts from litter are unlikely to occur. See section 6.5.3 on fugitive emissions for further information.

Annex 4

North Horsham Parish Council

Roffey Millennium Hall,
Crawley Road, Horsham,
West Sussex, RH12 4DT

Tel: 01403 750786 (Office & Hall Bookings)
Roffey Millennium Hall, North Heath Hall
HolbrookTythe Barn

Email: parish.clerk@northhorsham-pc.gov.uk **Website:** www.northhorsham-pc.gov.uk

Environment Agency

By e-mail to pscpublicresponse@environment-agency.gov.uk

17th June 2021

Dear Sirs,

Variation application number:- EPR/CB3308TD/V002

Environmental permit variation from Britaniacrest Recycling Ltd. The variation is to add mechanical sorting and an energy recovery facility. The facility will be known as the Wealden Works, Recycling, Recovery and Renewable (3R's) Energy Facility and is located at the existing site off Langhurstwood Road, North Horsham. The facility would be capable of treating up to 230,000 tonnes of non-recyclable non-hazardous waste each year from homes and businesses across West Sussex and its neighbouring counties. Asbestos could be accepted and stored but will not be used in the energy recovery facility. The energy recovery facility would be used to generate electricity which will be exported to the local electrical grid.

The Parish Council wishes to express concerns regarding the following potential environmental and human health impacts of the proposed activity as follows:-

1. The approved planning application dismissed any health issues associated with the incineration of waste, highlighting that new techniques for cleaning emissions before they are released into the atmosphere have improved and emissions are perfectly safe. The 90m high chimney has been designed so that any harmful fine particulate emissions will be dispersed to air and not reach the ground. However, no consideration appears to have been given to turbulence created by aircraft that may drive the fine particulate emissions from the chimney down to the ground. This could be exacerbated if proposed plans to increase flights from Gatwick Airport go ahead. The Parish Council recommends that a study be commissioned to seek professional advice on the effects of turbulence created by passing aircraft on the emissions.
2. Access to the site is through a residential estate. The Parish Council remains concerned that emissions from vehicular movements to the site are already having an impact on air quality and will affect those living in the vicinity of the proposed facility. The potential for this to be exacerbated in the future is significant.

There is also concern regarding the noise, smells and pollution from emissions associated with large vehicles attending the site. There is a potential for waiting lorries to increase the risk of pollution from idling engines and large vehicles travelling through a residential area pose a safety hazard and loss of amenity for residents. In the past it was hoped that every effort would be made to keep well below the permitted number of vehicle movements to the site. Whilst the current numbers are within the agreed limits they are approaching the maximum.

3. Given the current road layout, it will only be possible to stack one HGV waiting to enter the site via the weighbridge. If there is traffic congestion on route, vehicles will back up and delay other users of the access road. i.e BIFFA and Weinberger. Whilst currently there are no plans to introduce a "just in time" delivery procedure it is likely this will happen in the future. Vehicles arriving before their allotted slot will inevitably wait in local lay-by's and cause minor roads on the North of Horsham Development to be used for parking. Therefore, the Parish Council considers that the weighbridges must be relocated to provide adequate waiting bays for HGV's entering site and prevent blockage of the access road.
4. The Parish Council would request, on behalf of its residents', evidence that Sections 8,10 and 11 of the NPPF, which refer to healthy communities, the challenge of climate change and conserving and enhancing the natural environment along with HDPF (2015) Policy 33 and WSWLP (2014) W12 are being adhered to.
5. The Parish Council would additionally support the concerns raised in the letter from the No Incinerator 4 Horsham Community Group to the Environmental Agency dated 21st May 2021 a copy of which is appended to this letter.

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Yours faithfully

Pauline Whitehead BA (Hons) FILCM
Clerk to North Horsham Parish Council

No Incinerator 4 Horsham Community Group

Website: www.ni4h.org

Email: NoIncinerator4Horsham@gmail.com

Re: Environmental permit variation EPR/CB3308TD/V002 21 May 2021

Emailed to SSD Enquiries: SSDEnquiries@environment-agency.gov.uk

Dear Sir or Madam,

Thank you for your email sent on 13 May 2021 to No Incinerator 4 Horsham Community Group (Ni4H), notifying us that you have received and are now inviting comments on an environmental permit variation application from Britaniacrest Recycling Limited.

As a Community Group representing local residents, we are writing to you with the following concerns:

1. **Site of High Public Interest (SHPI)** - Your email to Ni4H on 6 November 2020 (copied into the email with this letter) includes: "I can confirm that this application will be treated as a Site of High Public Interest." and "I have copied Jeremy Quin MP's researcher into this email so that they are aware that the site will be treated as a SHPI." However, Britaniacrest Briefing Note 1 does not make it clear if it is being treated as a Site of High Public Interest. This continues to be of interest to Horsham MP, Jeremy Quin, as evidenced by: https://www.jeremyquin.com/news/environmental-permit-variation-application-horsham-incinerator

2. **Missing Documents and Information** - Ni4H have spent a substantial amount of time looking at the documents, poor labelling of many makes it challenging to identify, for example, the associated Appendix when it is a separate document. So far, we have found that a number of documents and pieces of vital information are missing, making it more difficult for experts, the council and other consultees and the public to participate in this consultation. Here is the missing information which we have identified so far:

   - Climate Change Risk Assessment – we have seen these included in similar EA permit applications.
   - Application for Environmental Permit Part C2: Copy of the Current Competence Management System Certificate and/or CIWM/WAMITAB Scheme Qualification Certificates, as we understand that operators cannot use ISO 14001 to cover the requirements of the CMS.
   - Air Quality Modelling Files.
   - Human Health Risk Assessment Dispersion Modelling, full list of parameters in a readable format.
   - Wealden Works 3Rs Permit Variation Application:
     - Appendix F - Site Condition and IED Baseline Report: Drawings 1/2/3
     - Appendix F - Site Condition and IED Baseline Report: Appendices F1, F2, F3, F4, F5
     - Appendix G – BAT Assessment BAT Conclusions 2019 on pages 22 to 27 'Error! Reference source not found' appears 7 times
     - Appendix G BAT Assessment: G1 - H1 Tool
     - Appendix I CHP Ready: I3 - Primary Energy Savings Spreadsheet
     - Appendix L: List of Directors

3. **Out of date documents** - Some documents are 5 years old from 2016, others from 2018. Were the latest versions available submitted with this application and if so, should they have been updated before submission? For example:

   a. 'About this consultation' document under heading Non-Technical Summary states: 'Refer to the non-technical summary which explains this application, in non-technical language. This should include a summary of the regulated facility, the key technical standards and control measures arising from the risk assessment.' As the risk assessments and several other documents are dated 2020, is the non-technical summary dated March 2018 still up to date?
   b. Local Area Potential Heat Users Report 2016, not updated for the supply of existing and new heat.

c. Appendix 7.7: Predicted Concentrations at BAT Conclusions Emissions Levels, uses very out of date meteorological data from 2011 to 2015 in Table 10.7.2: Maximum Process Contributions and Predicted Environmental Concentrations.

4. **Advertising this Consultation** – What are the plans and timeline for advertising this consultation?

5. **EA Public Consultation Information Is Unclear**
   - About This Consultation - How to Respond, states that your office is now closed, and staff are working remotely. It does not mention the option to telephone responses.
   - Confusingly it states: "We will look to make comments received publicly available at our Environment Agency public facing office." This implies the office maybe open but it does not state where it is, or how we find out about opening hours or arrangements.
   - Britaniacrest Briefing Note 1 does not mention the email option as an alternative to Citizen Space.

6. **Public Events** - Over 6 months ago, 6 November 2020 email, you said "As we can no longer hold public events at this time we will be looking at alternative arrangements to ensure we can maintain our engagement with you." What other arrangements are now in place? Ni4H would be happy to suggest local suitable venues, able to comply with the latest Covid guidance, including those able to live stream meetings. Many local people are now proficient using technology to access online meetings.

7. **Viewing printed copies of the documents** - would help facilitate those with poor eyesight or no suitable internet access and those who process information more easily in printed form, especially when needing to cross refer to so many other documents. The documents are so extensive that printing them at home is not viable or good for the environment. Covid restrictions are easing, and we anticipate will do so further on 21st June, just before this consultation ends on 24 June. West Sussex Libraries are now open for limited browsing and pre-bookable computer sessions but the EA public facing office is still not open.

8. **Handwritten Comments** – At planning and inquiry stages for this proposal, many comments were handwritten and sent by post. This EA public consultation only allows submissions online or by phone but only between 9am to 6pm Monday to Friday which may not be possible for those who work full time within those hours. Why can a postal address not be made available? This seems unjustified as letters could be left unopened for several days before being opened by EA staff.

9. **Consultees** – Who are the consultees and how do the public and consultees view comments made by others?

10. **The Community Liaison Group** has not been informed by Britaniacrest Recycling Ltd that the EA public consultation has commenced, and they have not put any information about the EA consultation on their website.

11. **Ensuring Applications Are Complete and Duly Made** - A regulator may conclude that an application is not duly made when, for instance: the information in the application is not sufficiently comprehensive or adequate to make a determination. eg inadequate and outdated Local Area Potential Heat Users Report inter alia. Source: Page 35, 6.4
    https://www.gov.uk/government/publications/environmental-permitting-guidance-core-guidance--2

12. **We respectfully ask the EA to pause this consultation** whilst reviewing these concerns, and when all the documents and appropriate consultation arrangements are organised to restart it with an updated Briefing and About this consultation, and extended consultation period as a Site of High Public Interest.

Yours faithfully,

Peter Catchpole, Chairman of No Incinerator 4 Horsham Community Group

Copied to: MP, Jeremy Quin, his Researcher and Clerk, North Horsham Parish Council