

### **RESPONSE TO REQUEST FOR INFORMATION NOTICE** DATED 27 JUNE 2024

Permit Application Reference: S13/006

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**Technical Director** 

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# **1** INTRODUCTION

- 1.1.1 This document provides the response to the Request for more Information issued on 27<sup>th</sup> June 2024. The notice sets out further information requested by Calderdale Metropolitan Borough Council (CMBC) purportedly in the context of an application to permit a small waste co-incineration plant (SWCP) at Calder Valley Skip Hire's Belmont Industrial Estate site.
- 1.1.2 This second Request for further information is also being treated as a request made under Schedule 5 to EPR 2016.
- 1.1.3 A response to this second Request is being provided even though it is considered that the information requested is not required by CMBC to determine the permit application. To the contrary, the Request seeks information which, generally, is irrelevant to the environmental permitting process.
- 1.1.4 Without prejudice to what is set out above, section 2 of this document sets out each question in the Schedule 5 Notice followed by the response.

## **2** FURTHER INFORMATION

Confirm, by way of technical documentation supplied by the manufacturer, that the i8-1000 small waste incineration plant can facilitate a burn rate of up to 2,000kg per hour.

- 2.1.1 The manufacturers documentation provided by Inciner-8 for the i8-1000 unit is based on the standard unit with the standard feed system.
- 2.1.2 The unit installed at the CVSH site as outlined within the permit application includes an auto-loader system. This modification was designed by Inciner8 at CVSH's request. The mechanism for transferring waste from the auto loader into the primary chamber and all other aspects of the design are those of Inciner8. The i8-1000 unit with an autoloader is part of the Inciner8 range of plant. This modification was incorporated in order to improve the feed rate and increase the burn rate of the SWCP allowing a burn rate of up to 2,000 kg/hour. As part of the CVSH due diligence prior to installing the SWCP Director (at that time) Jim Moore visited an operational Inciner8 i8-1000 SWCP at a site in Stockport. This unit incorporated an Autoloader similar to the CVSH SWCP. Trials were carried out burning RDF fuels at burn rates of up to 2,000 kg/hour to prove the plant could successfully operate at this higher throughput and emissions remained compliant with IED ELVs.
- 2.1.3 Whilst manufacturers documentation is only available for the standard design with a federate of 1,000 kg/hr, as per the documentation provided with the permit application, these operational trials have proven the installed combination of autoloader and Inciner8 i8-100 unit can operate successfully at the proposed burn rate.
- 2.1.4 The information set out above is already in the possession of CMBC and has been so for 16 months. It was set out in paragraphs 2.6 and 2.14 of the RPS Response to representations made to the Appeal Hearing dated 9 March 2023 in respect of the previous application for an environmental permit for this SWCP.
- 2.1.5 It should be noted that facilities are frequently permitted, even significantly larger facilities, without a selected technology provider for any of the plant. Such permit applications are, therefore, determined on a generic basis without identification or specification of any individual manufacturer's plant. Indeed, it has commercial advantages to operators to permit on this basis which is why it is frequently the preferred approach. In these circumstances the onus is on operators via their own due diligence and commissioning to demonstrate that the plant design they ultimately select can operate within the conditions of the permit. This, too, was included in the above-mentioned RPS Response dated 9 March 2023 at paragraph 2.5, following reference at paragraph 2.4 to RPS' experience in respect of the level of detail provided for the successful determination of many other SWCP permit applications, with which the previous application was commensurate and TetraTech's review at paragraph 2.4 which agreed with RPS that the information provided met the requirements of IED, Article 44. The level of detail in this application, as regards the subject of IED, Article 44, is the same as the previous application.
- 2.1.6 The CVSH facility has already been subject to their due diligence, via the trials outlined above at a similarly configured plant. During commissioning the plant will be tested to ensure that operation at the proposed burn rate can be achieved whilst ensuring the plant performance accords with the permit requirements. In the event that commissioning trials, (or subsequently at any point during the operational life of the facility) do not support operations at the proposed burn-rate in compliance with the permit then the plant will either operate at reduced burn-rate or further modification or improvement will be proposed to enable the installed plant to operate in accordance with the permit at the higher burn rate. Should modifications to the plant be required, changes would be notified to CMBC. It is highly unlikely that any such modification would require any variation of the permit conditions.

- 2.1.7 Paragraph 21 of the Appeal Decision of the Permitting Inspector dated 5 July 2023 is also relevant in this respect. In this paragraph it is noted that the permit applicant does not need to demonstrate as regards specific plant that such specific plant is designed, equipped and will be maintained and operated in such a manner that the requirements of IED, Chapter IV are met. The permit applicant only needs to set out the measures which are envisaged to guarantee those requirements and the Permit Inspector was satisfied that the then application, which in these respects was identical to the current application, reasonably complies with IED, Article 44 because it describes the measures contemplated to guarantee that the specified requirements would be met.
- 2.1.8 The Permitting Inspector included paragraph 21 in his Appeal Decision because objectors had made extensive allegations questioning the design and equipping of the plant and contending that it allegedly did not meet the requirements of IED Article 44 which contention the Permitting Inspector rejected in the said paragraph 21.
- 2.1.9 The measures <u>contemplated</u> to guarantee the specified requirements of IED, Article 44 are set out in the application and supporting documents and, as stated above, are, to all intents and purposes, identical to the previous application. As also stated above, it is commonplace for permit applications to be made on the basis of generic plant and, for that reason, the measures contemplated to meet the specified requirements do not need to be tied to or confined by any specific plant or any specific technology provider. Equally, in determining the permit application, and for much the same reason, the regulator should, in the event that any specific plant has been identified, proceed on the basis that it is open to the operator to modify or even replace such plant.
- 2.1.10 Against the backdrop of the above-mentioned allegations made by objectors at the appeal in respect of the previous application CMBC, as advised by its counsel, stated the following in its Closing at paragraph 1.15 (d) and (e):
  - "(d) The exercise is concerned with an objective and technical consideration of the application so as to determine whether it is compliant with the EPR and especially whether it can be operated without harm to the environment and human health.
  - (e) In doing so no consideration is required as to the specification or suitability of the precise pieces of plant that are proposed to be operated. The object of the Hearing is to determine the specification of the resultant emissions that have to be achieved – it is a result driven exercise. If the plant acquired is not fit for purpose and is incapable of meeting the emission level set that is Operator's concern and is incapable of substantiating a justification for some other and lower level."
- 2.1.11 That (amongst others) was the basis for the conclusion at paragraph 1.16 of the Closing on behalf of CMBC that there is no proper basis to conclude that the proposed incinerator cannot be operated in a manner consistent with the EPR. The Closing bearing the name of CMBC's counsel is dated 31 May 2023. It is, with respect, to be deprecated that over a year later CMBC has purported to issue a second request for further information which it is submitted is inconsistent with the reasoning and conclusion of CMBC, as professionally advised, as set out in its Closing at the appeal hearing into what was, as stated above, to all intents and purposes as regards IED, Article 44 an identical application.
- 2.1.12 Further, whilst the application seeks to permit the operation of the plant at burn rates up to 2,000 kg/hr it is also limiting the annual throughput to 8,000-10,000 tonnes per annum (tpa) and conditions are included within the permit to reflect this. The SWCP can operate continuously for 5 days per week, 24 hours per day and up to 50 weeks per annum. On this basis the SWCP can operate for 6,000 hours per annum. The average burn rate would be 1.66 tphr for the maximum annual throughput of 10,000 tpa, reducing to 1.33 tphr at an annual throughput of 8,000 tpa. Therefore, whilst the application seeks to operate the facility at up to 2,000 kg/hr, the facility will not be operating at this maximum capacity at all times or even most of the time.
- 2.1.13 Based upon the measures contemplated in the application in the context of IED Article 44 condition 1.4 of the draft permit provides that the maximum input of waste that may be co-

incinerated in the small waste co-incineration plant is 10,000 tonnes per annum, at a rate not exceeding two tonnes per hour.

It is unclear within the text of the Air Quality Assessment whether the burn rate has been used to inform any of the emissions calculations. Confirm if the burn rate has been used, and if so, specify what burn rate has been used.

- 2.1.14 The air quality assessment was informed by flow data provided by the Inciner-8 technical team. The flowrate is the same flowrate that was used to inform the air quality assessment for the original ES and the revised ES that has informed the issued planning consent for the SWCP at a capacity of 1-2 tonnes per hour. Planning permission for the SWCP was granted on appeal by the Planning Inspector on 4 February 2020 after a most thoroughgoing evaluation of the air quality assessments and the air quality evidence. On the basis of those air quality assessments the Planning Inspector in his Appeal Decisions attached condition 5 to the planning permission which he granted to the effect that the throughput of the SWCP thereby approved shall be no greater than 2 tonnes per hour.
- 2.1.15 The trials overseen by Jim Moore as detailed above confirmed that operation of a similarly configured SWCP at a burn rate of 2,000 kg/hr could successfully achieve compliance with IED emission limits for incinerators and operate in compliance with the trial site's environmental permit.

Confirm by way of technical documentation supplied by the manufacturer that the abatement equipment fitted to the i8-1000 incinerator can achieve the Industrial Emissions Directive (IED) limit values that have been used within the Environmental Statement Addendum Additional Air Quality Assessment and ES Addendum to the 2017 ES Chapter 7: Air Quality at a higher burn rate of 2,000kg.

- 2.1.16 A technical specification for the pollution control system was provided within Appendix D of the permit application. The CVSH plant includes the control and abatement systems listed in this specification. The technical specification notes that the pollution control system is designed to meet the Waste Incineration Directive<sup>1</sup> (WID) requirements. The requirements of the WID for new incineration plant were recast in the IED, including emission limit values.
- 2.1.17 The trials at the existing i8-1000 unit in Stockport demonstrated that operation at the higher burn rate of 2,000 kg/hr could comply with the IED emission limits with the standard abatement plant provided by Inciner-8, similar to the abatement installed at the CVSH plant.
- 2.1.18 Paragraphs 2.1.2 to 2.1.11 of this Response are repeated in this context.
- 2.1.19 Emissions from the CVSH SWCP facility will be monitored in accordance with the permit. During commissioning the emissions performance will be monitored to demonstrate that all permitted ELVs can be met. In the unlikely event that emissions performance, during commissioning or subsequently during the operational life of the facility, cannot meet the permit requirements CVSH will be required to cease operation until such times as modifications can be made to ensure emissions comply with the permitted limits.
- 2.1.20 Conditions to be included within the permit will require this:

<sup>&</sup>lt;sup>1</sup> Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste.

- Under condition 3.1 of the draft permit the operator should not operate the SWCP unless the systems described in section 3.3 of the application are functioning correctly.
- Under condition 3.4 of the draft permit an automatic system shall be in place to stop waste feed into the primary combustion chamber if any continuous measurement shows that any emission limit value is exceeded due to disturbance or failure of the abatement equipment.
- Condition 3.8 also provides for an automatic system to ensure that waste shall not be charged, or shall cease to be charged, if (amongst other circumstances) any continuous emission limit is exceeded (other than under permissible periods of abnormal operation) or any monitoring results demonstrate that compliance with continuous emission limit values are unavailable, again other than during permissible periods of abnormal operation.

# Confirm the flow rate simulation report remains accurate if the burn rate increases to 2,000kg per hour.

- 2.1.21 Solid Solutions have confirmed that the computational fluid dynamics (CFD) modelling submitted within the permit application was carried out using measurements taken on site and information from the manufacturer's specification. On this basis the CFD study was carried out assuming a burn-rate of 1,000 kg/hr.
- 2.1.22 The CFD modelling at the burn-rate of 1,000 kg/hr made a number of conservative assumptions and therefore is likely to under-estimate the residence time at this throughput and would allow for a higher burn-rate. Of these most notably the effect of the ceramic filter was omitted from the study altogether even though it is expected that it would have a significantly beneficial influence on residence time.
- 2.1.23 As already set out in paragraphs 2.1.5 to 2.1.11, it is commonplace for permits to be issued on a generic basis and therefore in the absence of design stage CFD information. Whilst this information might not be available at the application stage it is expected that the selected design would be subject to CFD and this would subsequently be verified once the facility becomes operational. In respect of the latter, permit conditions similar to Condition 5.8 included within the draft CVSH permit are included in all new incinerator permits. Condition 5.8 of the permit makes it clear that verification while the plant is operating under the most unfavourable conditions anticipated within one month of the plant coming into service must demonstrate the residence time of the secondary combustion chamber.
- 2.1.24 Should either further design stage CFD modelling or operational tests indicate that the 2s residence time cannot be met by the installed design at a burn-rate up to 2,000 kg/hr there are further options available to CVSH to ensure IED residence time requirements can be met. These could, for example, include the insertion of baffles or similar within the second chamber to increase residence time. It is understood that the latest versions of the i8-1000 unit incorporate a design enhancement of this kind. Should the circumstances considered in this paragraph apply, then, until the residence time is verified at the higher burn-rate operations would, by virtue of Conditions 3.7 and 5.8, be constrained to a lower throughput which achieves the required residence time.

### Confirm the total bottom ash capacity of the i8-1000 incinerator.

2.1.25 The capacity of the bottom ash compartments, as currently installed, is circa 1.8m<sup>3</sup>. However, that too may be subject to modification. Indeed, Inciner8 has introduced a completely automated deashing system which can be retro-fitted to existing i8-1000 SWCPs. The de-asher utilises a water quenched conveyor that runs through the bottom of the incinerator, catches all resultant ash and automatically transports it to an ash-bin. The current ash storage capacity would, therefore, be irrelevant. 2.1.26 This demonstrates the futility of requesting information of specific plant at this kind of granular level which is all the more inappropriate because, as stated above, it is an exercise which is irrelevant to the ambit of environmental permitting.

Stipulate the approximated amount of bottom ash generated over a 24hr period with a burn rate of 1,000kg per hr and 2,000kg per hour.

2.1.27 The i8-1000 brochure submitted with the permit application indicates bottom ash production is expected to be circa 3% of the RDF input. At 1,000 kg/hr this equates to 30 kg/hr of bottom ash and at 2,000 kg/hr approximately 60 kg/hr of bottom ash would be produced. Over a 5 day period this would equate to 3.6 to 7.2 tonnes of bottom ash.



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2024-07-29

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