

Thameside Energy Recovery Facility Limited

Thameside Energy Recovery Facility

Schedule 5 Response

1 Introduction

Thameside Energy Recovery Facility Limited (TERFL) submitted an application to the Environment Agency (EA) to vary the Environmental Permit (EP) (Ref: WP3007LM) to increase the capacity of the Thameside Energy Recovery Facility (the Facility). TERFL submitted a technical note setting out the design basis for the air quality assessments which underpin the application to justify a proposed increase in capacity to 379,658 tonnes per annum.

The Environment Agency has subsequently issued a Schedule 5 Request, dated 16 October 2023, requesting an explanation on how the proposed increase in capacity will impact on the non air quality considerations. Taking this into consideration, this note considers the increase in capacity in relation to the following:

- Raw material consumption;
- Residues generation;
- Energy efficiency;
- Fire prevention plan;
- Noise; and
- Odour.

2 Environmental Considerations

2.1 Raw material consumption

Due to the proposed increase in capacity the quantities of raw materials consumed will increase. The estimated consumption of consumables, based on the proposed maximum capacity of the Facility, is provided in Table 1.

Table 1: Consumables and residue comparison

Consumable / Residue	Units	Proposed maximum capacity
Auxiliary fuel	tpa	100
SNCR reagent (24.9% Ammonia solution)	tpa	2,900
Hydrated lime	tpa	6,970
Powdered Activated Carbon (PAC)	tpa	230

2.2 Residues generation

A comparison of the residues generated from the consented design and the maximum capacity is presented in Table 2:

Table 2: Estimated residue generation

Residue	Units	Consented estimated residue generation	Proposed maximum capacity residue generation
Incinerator Bottom Ash (IBA)	tpa	30,900	103,500
Air Pollution Control residues (APCr)	tpa	7,700	17,400

There will be no change to the storage capacity of incoming waste or residue storage facilities associated with the Facility.

2.3 Energy efficiency

With the proposed design the Facility will export a minimum of 40 MW_e, which is comparable to the export capacity stated in Condition 1.1.4 of the EP. Furthermore, the Facility will have a parasitic load of approximately 4 MW_e. Therefore, the Facility will generate approximately 44 MW_e.

On the basis that the Facility is operational for 8,760 hours per annum, it will generate approximately 385,440 MWh and export 350,400 MWh of electricity.

The electrical output of the maximum capacity has been compared with the benchmark data for MSW incineration plants, given in the EA Guidance Note EPR5.01 and in the BREF for Waste Incineration (BREF WI) as presented in Table 3.

Table 3: Facility design parameters comparison table

Parameter	Unit	Maximum capacity	Benchmark
Net power generation, nominal design	MWh/t waste	0.92	0.6 - 0.9
Internal power consumption, nominal design	MWh/t waste	0.09	0.06 - 0.19
Power generation (assumed gross) for 100,000 tpa of waste	MW _e	11.59	5 - 8

Benchmark sources: EPR5.01 for power generation per 100,000 tpa of waste, WI BREF otherwise

As shown in Table 3, the design of the Facility compares favourably with the relevant energy efficiency benchmarks.

2.4 Fire Prevention Plan

The volumes or types of waste stored at the Facility will not change as a consequence of the increase in capacity. Therefore, the Fire Prevention Plan will not change, and no updates are required.

2.5 Noise

The increase in capacity will not require the installation of any additional equipment for the processing of waste, and the assessment was undertaken on the basis of continuous operation. Therefore, the noise assessment will not change, and no updates are required.

2.6 Odour

The proposed increase in capacity will not result in any additional odour risks associated with the operation of the Facility. Therefore, the risk of odour from the Facility will not change, and no updates are required.

3 Conclusions

This technical note has been developed to consider how the proposed increase in capacity will impact on the following:

- Raw material consumption;
- Residues generation;
- Energy efficiency;
- Fire prevention plan;
- Noise; and
- Odour.


As demonstrated within this note, whilst the increase in capacity will result in an increase in raw material consumption and residue generation, it will not change the conclusions of the assessments.

Yours sincerely

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