

Thameside Energy Recovery Facility Limited  
**Thameside Energy Recovery Facility**  
Capacity Increase

## 1 Introduction

Thameside Energy Recovery Facility Limited (TERFL) has 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). Within this technical note TERFL has set out the design basis for the environmental assessments which underpin the application.

## 2 Capacity Increase

The EP application included a Supporting Information document<sup>1</sup> and Dispersion Modelling Assessment<sup>2</sup>. Section 2.2 of the Supporting Information defines the basis for the capacity of 350,000 tpa as follows:

Table 1: Design basis of the proposed capacity

	Unit	Proposed Design
Thermal Input at design point	MW <sub>th</sub>	126.4
Fuel NCV (Nominal design)	MJ/kg	10.5
Hourly fuel input (assuming the Nominal design)	t/h	43.34
NCV Range	MJ/kg	7 – 13

Therefore, if it is assumed that the Facility will have an availability of 8,000 hours per annum, the maximum capacity can be calculated as follows:

$$\begin{aligned} \text{Maximum capacity} &= \text{Hourly fuel input} \times \text{annual availability} \\ &= 43.34 \times 8,000 \\ &\approx 350,000 \text{ tpa} \end{aligned}$$

However, the theoretical maximum capacity of the Facility is 8,760 hours per annum based on continuous operation and preventative maintenance requiring a shutdown of the plant being undertaken every 18 months. Therefore, the theoretical maximum capacity can be calculated as follows:

<sup>1</sup> Ref: S3265-0310-0007SDR Supporting Information r6

<sup>2</sup> Ref: S3265-0030-0001RSF Dispersion Modelling Assessment for EP Variation\_r1

$$\begin{aligned} \text{Theoretical maximum capacity} &= \text{Hourly fuel input} \times \text{annual availability} \\ &= 43.34 \times 8,760 \\ &= 379,658 \text{ tpa} \end{aligned}$$

As detailed in section 5.2 of the Dispersion Modelling Assessment the dispersion modelling was based on operation at the design point detailed in Table 1 and for 100% availability, i.e. 8,760 hours operation. As such, the dispersion modelling was based on an annual capacity of 379,658 tpa and is already representative of the theoretical maximum capacity. Therefore, no updates to the Dispersion Modelling Assessment are required. The Dioxin Pathway Intake Assessment<sup>3</sup> and Abnormal Emissions Assessment<sup>4</sup> submitted with the application to vary the EP were based on the results of the dispersion modelling, so these assessments are also already representative of a capacity of 379,658 tpa and no updates are required.

We trust that this information is sufficient to allow the EP determination to progressed with the theoretical maximum capacity of 379,658 tpa.

Yours sincerely

FICHTNER Consulting Engineers Limited



Stuart Nock  
Associate Senior Environmental Consultant



James Sturman  
Lead Consultant

<sup>3</sup> S3265-0030-0002RSF Dioxin Pathway Intake Assessment\_r1\_comp

<sup>4</sup> S3265-0030-0003RSF Abnormal Emissions Assessment\_r1