

Ford Energy from Waste Limited

Ford Energy Recovery Facility - EPR/MP3904BD/A001

Schedule 5 Response No 1

Further to the Environment Agency's request for additional information in the Schedule 5 Notice dated 11th August 2021, please find our response to your queries set out below. Each question has been presented in bold text, with our response following on below it.

1. Provide a revised Noise Impact Assessment (NIA) addressing the following points:

- a. A revised baseline sound survey is required to determine the background sound levels at the nearest sensitive receptors (NSRs). This must include both week and weekend, day and night periods. Monitoring locations must be representative of the background sound climate at the NSRs.**

An updated NIA incorporating a supplementary baseline sound survey is presented in Appendix A.

- b. Receptors and sources should be modelled at appropriate heights to be representative.**

An updated NIA, which includes for the assessment of the impact at receptors at appropriate heights, is presented in Appendix A. Potential sources have been modelled at appropriate heights.

- c. Additional receptors must be included to represent The Landings, the proposed residential scheme located to the west of the proposed installation.**

An updated NIA, which includes for additional receptors considered to be representative of yet to be consented residential scheme The Landings, is presented in Appendix A.

- d. Provide additional information in relation to the 'benchmark measurements' made of sound sources at the existing Lakeside EfW facility in Slough, in particular for the Air Cooled Condensers (ACCs) (including, but not necessarily limited to: source dimensions and the distance between the plant and measurement microphone).**

Benchmarking noise measurements were undertaken by the noise consultants supporting the project, Ramboll, on 21/02/2019 at Lakeside EfW located in Colnbrook, Slough. The measurements captured the noise levels in all the main areas of the facility and specific items of plant. The measurement noise spectra were used to inform and refine the noise emissions calculations for the proposed Ford ERF.

Methodology

Ramboll has advised that:

- all measurements were undertaken by a suitably qualified acoustician and in accordance with BS 7445-1:2003 'Description and measurement of environmental noise. Guide to quantities and procedures'¹; and
- all measurements were short-term attended and no unattended noise monitoring was completed.

The measurements that are relevant to the Ford ERF model are:

- Tipping hall/bunker;
- Boiler hall;
- Turbine Hall; and
- Air Cooled Condensers (ACCs).

Measurements in these areas were taken, as far as practically possible, in the middle of each space to be representative of the reverberant noise level, and near key items of plant (near field). The field condition of each measurement and proximity to plant items is specified within Table 1.

Each measurement was taken at 1.5m above local ground level.

Equipment Details

The following equipment was used for the benchmarking measurements:

- Bruel and Kjaer 2250 Sound Level Analyser (serial no. 3002075)
- Bruel and Kjaer 4231 Sound Calibrator (serial no. 3004168)

The sound level analyser was calibrated on site before and after the survey, and Ramboll reported that no significant drift in calibration was detected. It is understood that all equipment owned or hired by Ramboll, for the monitoring, was subject to regular calibration traceable to national standards in accordance with the manufacturer's recommendation.

Results

The results of the noise measurements are presented in Table 1:

Table 1: Results of benchmarking noise measurements

Location	Notes	Duration (hh:mm:ss)	L _{Aeq,T} (dB)	L _{AFmax} (dB)
Tipping hall	General operation, middle of the space, representative of reverberant level	00:06:00	75	88
Bunker	Bottom ash, representative of reverberant level	00:05:00	73	86
Main plant area	Level 17.5m	00:05:00	72	83
Main plant area*	Top of bag filters at 1 m	00:05:00	82	97
Main plant area	Outside incinerator viewing window at 1 m	00:05:00	81	86
Main plant area	Fan level 6, east side	00:05:00	81	95

¹ British Standards Institution, 2003. British Standard 7445:2003 Description and measurement of environmental noise. Guide to quantities and procedures. BSI.

Location	Notes	Duration (hh:mm:ss)	L _{Aeq,T} (dB)	L _{AFmax} (dB)
Main plant area	Ground floor by bottom ash sieve at 1 m	00:05:00	80	88
Main plant area	Ground floor, hydraulic oil tank at 1 m	00:00:30	81	82
Main plant area	Ground floor, primary fan exhaust at 1 m (noisiest side)	00:00:30	80	81
Main plant area	Induced draft fans at 1 m	00:01:00	86	87
Air Cooled** Condensers	1.5 m above fans	00:01:00	79	88
Air Cooled** Condensers	Below fans, 1.5 m above ground	00:00:30	79	80
Turbine Hall	Reverberant level south side	00:05:00	78	81
Turbine Hall*	Reverberant level, middle	00:01:00	82	82
Turbine Hall	Reverberant level, north side	00:05:00	80	81

**Note that the measured noise spectra were input to the model. Although the measured sound pressure levels were 82 dB(A), the reverberant internal noise levels in the model were calibrated to 85 dB(A) (after consultation with Fichtner) to present a worst-case assessment.*

***It is understood from site layout drawings that the ACCs dimensions are 39m x 26m. The top of the ACC screen was understood to be at a height of 15.50m. These dimensions and the height of the ACCs could not be confirmed on site due to the size of the equipment. The noise measurements from the ACCs were deemed to be undertaken in the near field given the equipment dimensions.*

e. Provide further explanation of how the ACCs have been modelled and how they are configured in relation to the screen.

The site section drawings (Refer to the except in Figure 1, with the full drawing presented in Appendix C) show the bottom of the Air Cooled Condensers (ACCs) at 8.0m above the 0.0m ground level. An area source has been input to the noise prediction model at an absolute height of 8m above ground level as shown in Figure 1.

The noise spectrum applied to the ACCs in the model was taken from the benchmarking measurements completed at the Lakeside EfW facility. The noise emissions were calibrated so that a sound pressure level of 79 dB(A) was achieved in the model (as per the benchmarking measurements), at a height of 1.5m above the 0.00m ground level. This equates to the area source having a sound power level of 80 dB LwA per m² (a total sound power of 110 dB LwA).

A screen was input to the model, as per the site section drawings. The bottom of the screen is modelled at a height of 8.50m above 0.00m ground level, and the top of the screen is modelled at 23.50m above the 0.00m ground level, refer to Figure 1.

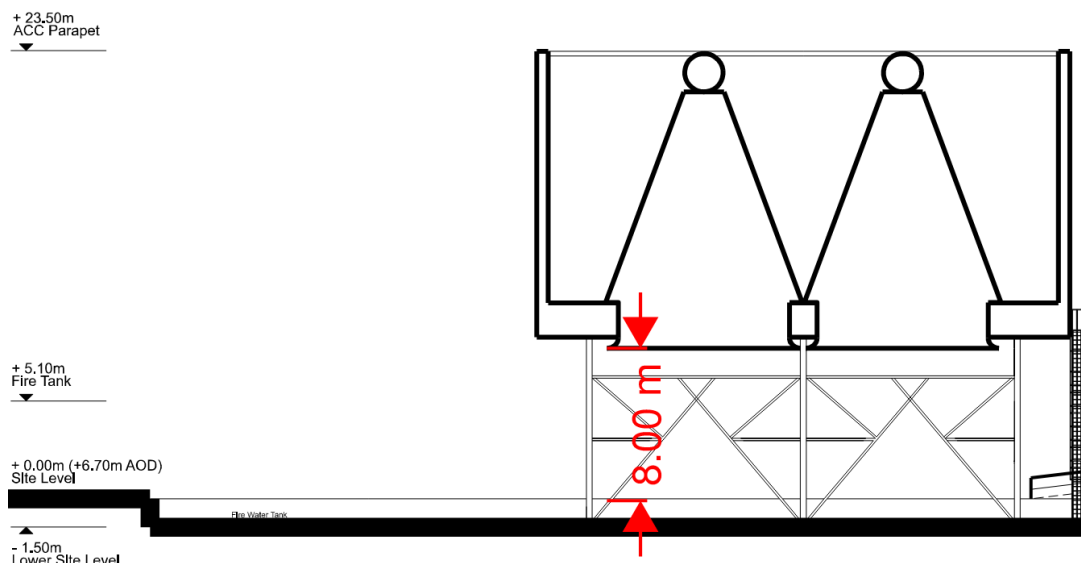


Figure 1: Excerpt from site section drawing

The ACCs are elevated to allow sufficient air flow to the bottom of the ACCs. As the ACCs will draw in air flow from the bottom of the ACCs, the bottom of the ACCs is considered to be the key noise source.

Therefore, the area source was input to the model at the bottom of the ACCs (8.00m above the 0.00m Site Level), just below the proposed screen (8.50m above the 0.00m ground level). This approach allows the noise emissions from the ACCs to propagate around the bottom of the ACC screen; therefore, this does not over predict the noise attenuation that will be provided by the proposed screen. Modelling the ACCs in the middle of the proposed screen could underestimate the resultant noise levels at the nearest receptors.

We trust that the information contained within this Schedule 5 Response is acceptable to the Environment Agency. If the Environment Agency has any questions on the information contained within this correspondence, please contact either of the undersigned.

Yours sincerely

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A Revised Noise Impact Assessment

B Modelling files

C Site section drawing