Preliminary Environmental Information Report

Volume III - Appendices

Appendix 11B: Operational Noise Information

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

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Net Zero Teesside

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11B. Operational Noise Information

11.1 Noise Model Settings

Data Sources – Proposed Power Plant Site:

- PEI Report Chapter 4: Proposed Development (PEI Report, Volume I);
- Ordnance Survey (OS) mapping of the Proposed Development and surrounding area; Topographical data (LIDAR data) and aerial photography;
- surrounding area ground heights – downloaded from Open Survey Data (www.environment.data.gov.uk/DefraDataDownload); and
- sound power level data from similar power projects.

Modelling Assumptions:

- building dimensions will be as provided;
- receptor buildings heights – all two storey houses assumed to be 6.5 m, all one storey houses assumed to be 4 m;
- receptor heights 1.5 m for ground floor, 4 m for first floor;
- ground absorption –industrial areas and hardstanding 0.0, vegetation 0.7, road surfaces 0.0, water bodies 0.0;
- source sound power levels from previous power projects with high levels of embedded mitigation have been used, to allow for a possibly lower level of mitigation at this site a correction of +7 dB has been applied to the source sound power data for sources in the model;
- the noise emitted by each building façade was calculated based on the total sound power level for the building, distributed according to the proportional surface area of each façade;
- stacks have been modelled as individual point sources, located 0.1 m above the top of each stack; and
- the booster station has been assumed to be 10 m wide, long and tall and produce a sound pressure level (A-weighted) of 85 dB at 1 m.

Table 11B-1: Source Data Inputs

Details	Linear sound power levels each frequency band dB									Number in power plant	L_{WA} dB
	31	63	125	250	500	1k	2k	4k	8k		
400kV substation	99	105	97	84	68	49	55	64	66	3	85
Stack	101	92	91	94	91	82	77	65	68	3	91
Stack elbow	94	85	84	87	84	75	70	58	61	3	84
HRSG	131	122	110	101	97	96	93	91	98	3	104
Gas turbinehall	116	108	101	84	79	82	75	76	74	3	89
Steam turbinehall	125	117	110	93	88	91	84	85	83	3	88
Gas compressor	98	102	101	90	79	72	70	68	65	3	88
Cooling pump	98	102	101	90	79	72	70	68	65	3	88
Hybrid cooling tower	118	113	116	111	98	90	95	95	91	3	106
Workshop	109	104	102	86	62	48	46	58	63	1	88
GSUT	80	92	105	103	89	90	82	70	69	2	97
Wastewater treatment area	102	96	98	88	80	74	74	66	59	1	86

Details	Linear sound power levels each frequency band dB									Number in power plant	L_{WA} dB
	31	63	125	250	500	1k	2k	4k	8k		
Wastewater treatment plant	97	101	100	89	78	71	69	67	64	1	86
Booster station	127	131	130	119	118	101	99	97	94	1	119