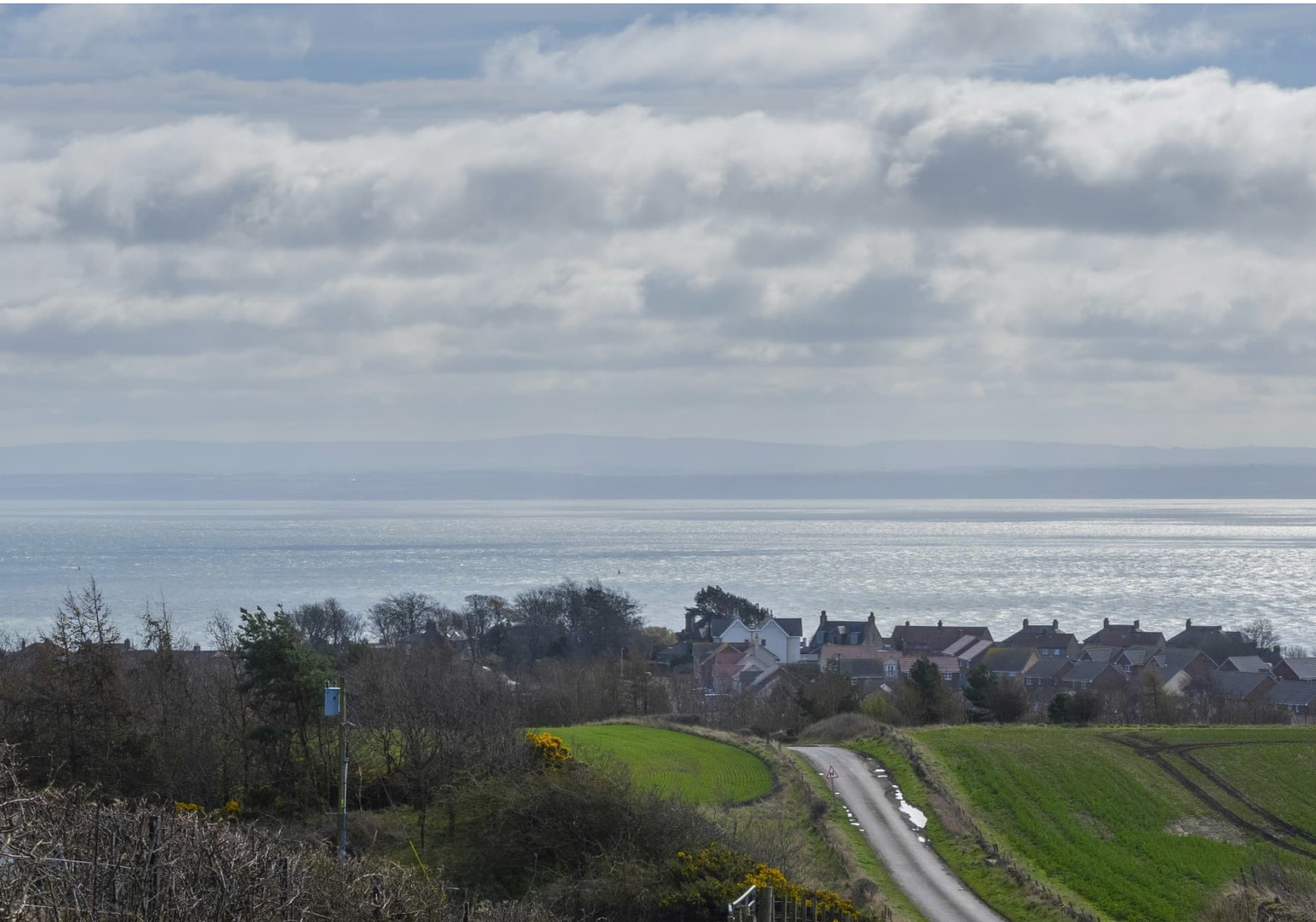
Eastern Green Link 4:

Scottish Onshore Scheme

Volume 4: Appendices

Appendix 11.4 Model Setup

December 2025



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1. Model Setup

The following table presents the input data for each source representing the noise generative plant as given by the client. It is understood that some of these items may include a correction for their potential tonality. For each plant item, unmitigated and mitigated sound power levels are provided, this information has been provided by the client and represent the influence of potential noise reducing interventions.
The sound propagation model was prepared using CadnaA 2025 and configured to use the methodology set out in ISO 9613-2: 2024 "*Attenuation of sound during propagation outdoors*". The number of sound reflections calculated was set to a maximum of 5, increasing the maximum reflection order was noted to have a negligible affected on the predicted sound levels at receptors.

The surrounding area's terrain was imported from Ordinance Survey Topography data (grid NT29, contours at 10m resolution). The terrain data within the site boundary was based on contours provided by the client.

The default ground absorption is set to 1 within CadnaA to represent acoustically absorptive ground, and a concrete area has been represented conservatively by setting a reflective surface (G=0) up to the boundary of the converter station development.

Buildings and equipment have been assigned an absorption coefficient (α) set to 0.21, which equates to a 1 dB reflection loss.

Table 1 Sound Power Level Data provided by the Client

Name	Source Type (Point/ Area/ Box)	Total Area of 5 sides (m^2)	Height (m)	Sound Power Level (dBA)
AC Filter 1	BOX	619	8	79
AC Filter 2	BOX	619	8	79
Amenities	BOX	1444	5.7	93
Control Building	BOX	2880	9	95
Converter Cooler 1	BOX	1520	5.7	95
Converter Cooler 2	BOX	1511	5.7	95
Converter Hall 1	BOX	6079	22	90
Converter Hall 2	BOX	6080	22	90
DC Hall 1	BOX	6120	22	87
DC Hall 2	BOX	6127	22	87

Name	Source Type (Point/ Area/ Box)	Total Area of 5 sides (m^2)	Height (m)	Sound Power Level (dBA)
PLC Filter 1	AREA*	260*	11.6	82
PLC Filter 2	AREA*	260*	11.6	82
Storage	BOX	1676	10	75
Transformers 1	BOX	2718	10	92
Transformers 2	BOX	2718	10	92
AHU 1-8	POINT	n/a	5.5	96

* PLC Filters have been represented as a horizontal area at a height of 11.6m, without a building or structure

Note: The items represented as BOX have been setup such that the quoted sound power level is spread evenly over the total surface area forming the boxes 5 surfaces.

Table 2 Sound Power Level Spectrum Library

	Lw Spectrum ID	Type	Weight	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	A	lin
Transformer	TRAN	Lw	A				73.0	71.0	81.0	101.0	82.0	74.0	93.0	74.0	75.0	88.0	75.0	76.0	75.0	71.0	70.0	66.0	58.0	57.0	53.0	50.0	49.0	46.0	46.0	50.0	102.0	120.4
Cooler Tower	COOLER	Lw	A	33.2	34.9	39.3	44.2	49.6	54.3	61.2	62.3	61.0	63.0	65.1	65.3	66.0	68.7	69.2	69.4	70.1	70.5	68.6	67.7	67.0	65.7	62.4	59.8	56.6	53.6	47.7	79.5	87.7
Reactor/ Harmonic Filter	HF	Lw	A				55.3	53.5	63.0	83.0	64.0	56.3	75.2	56.4	57.6	70.3	57.4	57.9	57.4	52.9	52.0	48.0	40.1	38.8	35.0	31.9	30.8	28.3	27.9	32.6	84.0	102.5
Substation	SUB	Lw	A		51.0			65.0			79.0			81.0			86.0			86.0			82.0			76.0			70.0		90.8	99.0
Cooling Fan	AHU	Lw	A	37.3	48.2	53.3	59.5	56.3	55.9	59.9	65.9	68.8	82.1	84.2	74.8	79.4	81.3	80.6	80.5	80.9	80.0	78.8	77.5	75.6	72.7	69.6	66.0	62.4	57.9	52.0	91.3	99.1

Note: Representative spectra adapted to meet SWL values provided by client

Plate 1 Model Layout

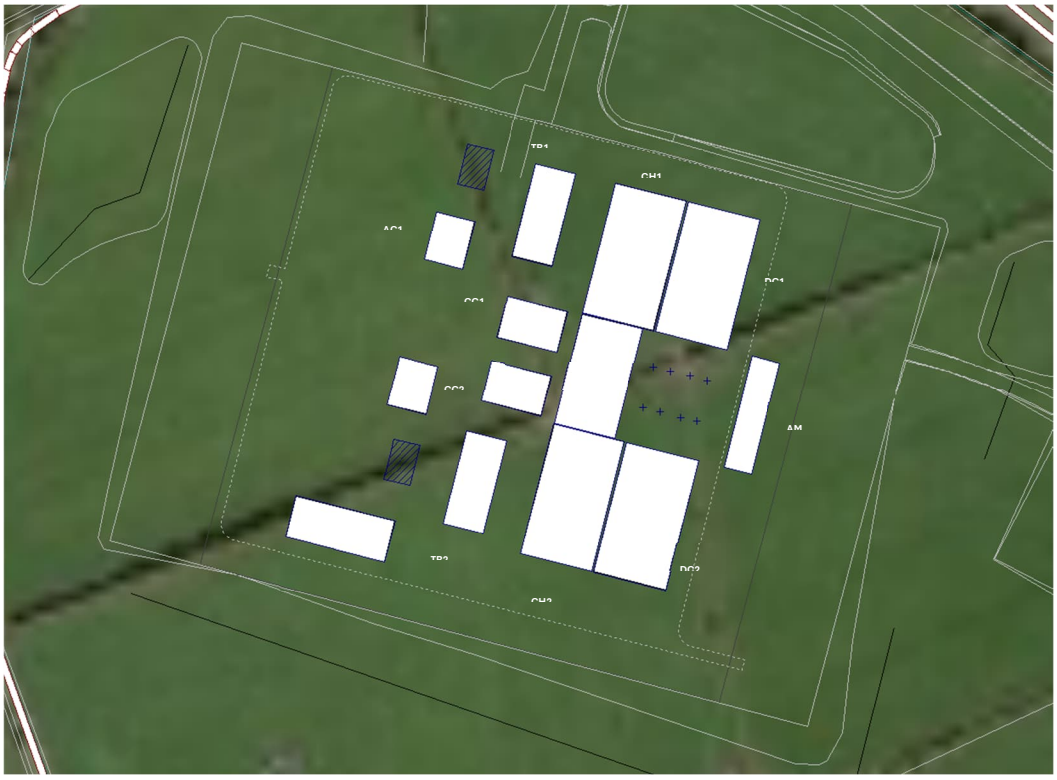

Plate 2 Model Layout 3D View