



CLEVE HILL SOLAR PARK

ENVIRONMENTAL STATEMENT
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SUBSTATION NOISE EMISSION DATA

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3 Substation plant noise in operation

Once in operation, the various items of plant at the substation may emit noise at varying levels. These items of plant are listed below in Table 3-1, alongside a guideline noise emission figure. Most items outlined below emit a continuous noise that will form the basis of the substation operational noise profile.

Item of plant	Noise emissions
400kV transformer (ONAN) Natural cooling	80-83 dB(A) at surface, radiator height 3.3m
400kV transformer (ONAF) Fan-assisted cooling	97-100 dB(A) at surface, radiator height 3.3m This is based on: Number of fans 6, fan diameter 1m Note that number of fans and specification could vary at detailed design.
Earthing and auxiliary transformer (2 off)	65 dB(A) at surface
Reactive compensation system (STATCOM or SVC) and associated cooling system	80-85 dB(A) at surface 90 dB(A) at surface including cooling system May include other discrete reactors or capacitors May include step-down transformers
Harmonic filter compound	95 dB(A) at surface
400kV switchgear	Impulse switching noise only, silent in normal operation 150 dB(A)
Corona discharge	Dependent on environmental conditions, likely occurring under damp or rainy conditions. This could be up to 60 db(A) for outdoor air insulated plant in wet weather.
Building climate control systems, HVAC unit	75 db(A) at surface
33kV/LV substation transformer (124 off)	65 dB(A) at surface
Tesla battery cabinet (7440 off)	<82.5 dBA at 1m [2]
Tesla inverter cabinet (744 off)	<70 dBA at 1m [2]

Table 3-1: Operational noise levels