



Peartree Hill Solar Farm

Environmental Statement

Volume 4

Appendix 12.3: Construction Noise Assessment Details

Revision 2 (tracked)

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Planning Act 2008
Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009 –
Regulation 5(2)(a)

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1 Construction Noise Details

1.1 Construction Phases

1.1.1 It is anticipated the following phases of construction works will be required, broadly categorised into preparatory works, construction of Proposed Development infrastructure and cable installation works. More detail on the works involved in each stage below is set out in **ES Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1]**.

- Preparatory Works:
 - 1. Installation of culverts in watercourses
 - 2. Stripping of topsoil, trenching, storage and capping
 - 3. Site establishment; mobilisation areas, running tracks, construction compounds and fencing
 - 4. Construction of access tracks and laydown areas
 - 5. Delivery of plant and materials to site
- Construction of Proposed Development infrastructure:
 - 6. Installation of solar PV modules, support structures and mounting
 - 7. Installation of supporting infrastructure including inverters, transformers, DC-DC converters, switchgear and BESS.
 - 8. Construction of on-site substations
 - 9. Installation of storage containers
 - 10. Installation of construction drainage with pumping (if required)
- Cable installation:
 - 11. Set-up of temporary construction compounds
 - 12. Stripping of topsoil
 - 13. Trenching and installation of cabling
 - 14. Horizontal directional drilling - crossing methodology

1.2 Noise Model Settings

1.2.1 The predicted noise emissions generated by the construction phases outlined above have been calculated at the surrounding noise sensitive receptors using the computational noise modelling software SoundPLAN (v9.0). The modelling software calculates noise in accordance with the methodology set out in BS 5228-1:2009+A1:2014.

1.2.2 A full list of the sensitive receptors considered in this assessment is shown in **Volume 4, Appendix 12.1: Full list of sensitive receptors [EN010157/APP/6.4]**.



1.2.3 The modelling parameters used are detailed in Table 1.

Item	Setting
Algorithms	BS 5228-1:2009+A1:2014
Façade Corrections	Predictions are at 1m from a given façade, in free-field conditions. No façade corrections have been applied.
Ground Absorption	An absorption coefficient of 0.9 due to the high proportion of soft ground.
Terrain	Surrounding terrain has been derived from https://environment.data.gov.uk/survey as 2m contours
Site Layout	Digitised based on site layout provided.
Maximum number of reflections	3
Receiver heights	1.5m from ground for 1st storey, 4m from ground for 2nd storey

Table 1 Modelling Parameters

1.3 Plant List and Sound Power Levels

1.3.1 Table 2 details the plant used in the construction assessment for each phase of works and the sound power levels for each item of plant in octave bands where the information was available.



Plant	Plant Ref	L _p (at 10 m) dB(A)	No. of Plant Items	On-Time %	Screening (dB)	Total Correction (dB)	Total L _p (at 10 m) dB(A)
1. Prep works: Installation of temporary culverts under watercourses							
Tracked excavator	C2.24	73	2	70	0	1	74
Dumper	C4.4	76	1	80	0	-1	75
Lorry with lifting boom	C4.53	77	1	10	0	-10	67
Total							78
2. Prep works: Stripping of topsoil, trenching, storage and capping							
Tracked excavator	C2.24	73	1	80	0	-1	72
Dumper	C4.4	76	1	70	0	-2	74
Articulated dump truck	C8.15	79	1	80	0	-1	78
Tipper lorry	C8.20	79	1	50	0	-3	76
Total							82
3. Prep works: Site establishment; mobilisation areas, running tracks, construction compounds and fencing							
Tracked excavator	C5.18	80	1	50	0	-3	77
Dumper	C4.4	76	1	50	0	-3	73
Lorry with lifting boom	C4.53	77	1	10	0	-10	67
Bulldozer	C5.15	83	1	40	0	-4	79
Vibratory roller	C5.20	75	1	20	0	-7	68
Tractor with Auger	D9.50	71	1	50	0	-3	68
Total							82



Plant	Plant Ref	L _p (at 10 m) dB(A)	No. of Plant Items	On-Time %	Screening (dB)	Total Correction (dB)	Total L _p (at 10 m) dB(A)
4. Prep works: Construction of access tracks and laydown areas							
Tracked excavator	C5.18	80	1	60	0	-2	78
Tipper lorry	C8.20	79	1	30	0	-5	74
Bulldozer	C5.15	83	1	60	0	-2	81
Vibratory roller	C5.20	75	1	20	0	-7	68
Total							83
5. Prep works: Delivery of plant and materials to site							
Lorry with lifting boom	C4.53	77	1	10	0	-10	67
Telescopic handler	C4.55	70	1	30	0	-5	65
Road lorry (full)	C6.21	80	1	10	0	-10	70
Total							73
6. Construction of Proposed Development infrastructure: Installation of solar PV modules, support structures and mounting							
Tracked excavator	C5.18	80	1	30	0	-5	75
Mini piling rig	C3.17	76	2	60	0	1	77
Compressor for mini piling	C3.19	75	2	60	0	1	76
Lorry	C2.34	80	1	10	0	-10	70
1.5kg Impact Wrench	M2.1	73	1	10	0	-10	63
Telescopic handler	C2.35	71	1	20	0	-7	64
Total							81



Plant	Plant Ref	L _p (at 10 m) dB(A)	No. of Plant Items	On-Time %	Screening (dB)	Total Correction (dB)	Total L _p (at 10 m) dB(A)
7. Construction of Proposed Development infrastructure: Installation of supporting infrastructure including inverters, transformers, DC-DC converters, switchgear and BESS							
Tracked excavator	C5.18	80	1	30	0	-5	75
Lorry with lifting boom	C4.53	77	1	60	0	-2	75
Vibratory roller	C5.20	75	1	40	0	-4	71
Lorry	C2.34	80	1	70	0	-2	78
Telescopic handler	C2.35	71	1	10	0	-10	61
Wheeled mobile crane	C4.43	70	1	10	0	-10	60
Total							82
8. Construction of Proposed Development infrastructure: Construction of on-site substations							
Tracked excavator	C5.18	80	1	20	0	-7	73
Lorry with lifting boom	C4.53	77	1	30	0	-5	72
Telescopic handler	C2.35	71	1	30	0	-5	66
Wheeled mobile crane	C4.43	70	1	30	0	-5	65
1.5kg Impact Wrench	M2.1	73	1	80	0	-1	72
Hand Tools	-	-	-	-	-	-	-
Total							78



Plant	Plant Ref	L _p (at 10 m) dB(A)	No. of Plant Items	On-Time %	Screening (dB)	Total Correction (dB)	Total L _p (at 10 m) dB(A)
9. Construction of Proposed Development infrastructure: Installation of storage containers							
Lorry	C2.34	80	1	20	0	-7	73
Telescopic handler	C2.35	71	1	30	0	-5	66
Wheeled mobile crane	C4.43	70	1	50	0	-3	67
Total							75
10. Construction of Proposed Development infrastructure: Installation of construction drainage with pumping (if required)							
Telescopic handler	C2.35	71	1	20	0	-7	64
Wheeled backhoe loader	C4.66	69	1	40	0	-4	65
Water pump	C4.88	68	1	40	-5	-9	59
Diesel generator	C4.86	65	1	40	0	-4	61
Tracked excavator	C5.18	80	1	60	0	-2	78
Total							78
11. Cable installation: set-up of temporary construction compounds							
Tracked excavator	C5.18	80	1	50	0	-3	77
Dumper	C4.4	76	1	50	0	-3	73
Lorry with lifting boom	C4.53	77	1	10	0	-10	67
Bulldozer	C5.15	83	1	40	0	-4	79
Vibratory roller	C5.20	75	1	20	0	-7	68
Total							82



Plant	Plant Ref	L _p (at 10 m) dB(A)	No. of Plant Items	On-Time %	Screening (dB)	Total Correction (dB)	Total L _p (at 10 m) dB(A)
12. Cable installation: stripping of topsoil							
Tracked excavator	C2.24	73	1	80	0	-1	72
Dumper	C4.4	76	1	70	0	-2	74
Articulated dump truck	C8.15	79	1	80	0	-1	78
Tipper lorry	C8.20	79	1	50	0	-3	76
Total							82
13. Cable installation: trenching and installation of cabling							
Tracked excavator	C5.18	80	2	70	0	1	81
Lorry with lifting boom	C4.53	77	1	20	0	-7	70
Vibratory roller	C5.20	75	1	10	0	-10	65
Lorry	C9.25	82	1	10	0	-10	72
Cable Powered Reeler (rope)	M3.1	76	1	80	0	-1	75
Cable Drum Mounted Trailer and Tractor Unit	M4.1	79	1	80	0	-1	78
Cable percussion drilling rig	C2.43	74	1	80	0	-1	73
Total							85



Plant	Plant Ref	L _p (at 10 m) dB(A)	No. of Plant Items	On-Time %	Screening (dB)	Total Correction (dB)	Total L _p (at 10 m) dB(A)
14. Cable installation: horizontal directional drilling - crossing methodology							
Tracked excavator	C5.18	80	1	60	0	-2	78
Lorry	C9.25	82	1	10	0	-10	72
Tracked drilling rig with hydraulic drifter	C3.15	82	1	40	0	-4	78
Diesel surface water pump	C8.22	71	1	30	-5	-10	61
Diesel generator for submersible pump	C8.23	62	1	20	-10	-17	45
Diesel generator	C8.24	59	1	50	-10	-13	46
Tractor (towing water bowser)	C6.38	83	1	40	0	-4	79
Angle grinder (grinding steel)	C4.93	80	1	20	0	-7	73
Petrol generator for hand-held grinder	C4.94	75	1	20	0	-7	68
Air Compressor	M5.1	78	1	30	0	-5	73
Total							84

Table 2 *Plant List Sound Power Levels*



2 Unmitigated Predicted Noise Levels

2.1.1 Table 3 details the unmitigated predicted noise levels at each of the receptors for each construction activity, with the corresponding magnitude of impact (in the absence of additional mitigation) shown in Table 4.



Receptor	Activity Reference in Section 1													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R9 - White Cross Roundabout	3636	5050	5050	4142	3535	4848	4444	2727	3737	5050	5344	4944	5244	4042
R11 - Long Riston	3535	5656	5656	6262	4747	5555	5151	3434	3535	5252	5353	4749	5052	4940
R12 - Carr House Farm, Long Riston	4949	6464	6464	5353	5555	6060	5656	3333	5656	6060	4553	3547	3950	4249
R13 - Routh	4444	5353	5353	8077	3636	5252	4949	3232	3838	4949	5345	3735	4039	4842
R14 - Meaux Decoy Farm, Routh	4646	7171	7171	5048	6262	6767	5656	5656	6464	6767	5453	5737	6040	4848
R15 - Meaux (North)	4552	7159	7153	7539	5252	5976	5352	3959	5253	7639	5354	4657	4960	4348
R17 - Meaux (South)	5560	6260	6256	6534	6050	6070	5660	3460	5056	7034	4253	3746	5649	5343
R18 - Meaux (East)	4949	5856	5852	4631	4934	5654	5249	3156	3452	5431	5542	5737	6056	4953
R19 - Crown Farm, Meaux	4137	5755	5751	4442	3742	5553	5137	4255	4251	5342	4355	3957	4260	4849
R20 - Arnold Carr Farm, Arnold	4037	6360	6354	4539	3741	6059	5437	3960	4154	5939	5443	4639	4942	4648
R21 - Weel	4046	7369	7356	5533	4629	6974	5646	3369	2956	7433	5454	5546	5849	4646
R22 - Springdale Farm, Carr Lane, Weel	5744	6456	6450	4429	4427	5672	5044	2956	2750	7229	3954	3755	4058	3946
R24 - Wawne (North)	4036	4948	4946	4329	3635	4850	4636	2948	3546	5029	5439	7537	7840	6739
R29 - Woodmansey	5127	3837	3836	3527	2724	3777	3637	2754	2475	7778	5254	5775	6078	5167
R30 - Cottingham	4416	2524	2524	250	160	2461	2424	052	058	6161	3952	3857	4160	3751
R31 - Arnold	3430	3938	3939	8335	3032	3835	3938	3539	3238	3541	4339	5638	5941	5337
R32 - Beverley	3125	3635	3534	3224	2522	3554	3435	2443	2255	5459	4443	4156	4459	4253

Table 3 Unmitigated predicted noise levels



Receptor	Activity Reference in Section 1													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R9 - White Cross Roundabout	<u>NN</u>	<u>LN</u>	<u>LN</u>	<u>LN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>
R11 - Long Riston	<u>NN</u>	<u>LL</u>	<u>LL</u>	<u>NL</u>	<u>LN</u>	<u>LN</u>	<u>LN</u>	<u>NN</u>	<u>LN</u>	<u>LN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>
R12 - Carr House Farm, Long Riston	<u>NN</u>	<u>NL</u>	<u>NL</u>	<u>HN</u>	<u>NL</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>
R13 - Routh	<u>NN</u>	<u>MN</u>	<u>MN</u>	<u>NH</u>	<u>LN</u>	<u>MN</u>	<u>LN</u>	<u>LN</u>	<u>LN</u>	<u>MN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>
R14 - Meaux Decoy Farm, Routh	<u>NN</u>	<u>MM</u>	<u>MM</u>	<u>MN</u>	<u>NL</u>	<u>LM</u>	<u>NL</u>	<u>NL</u>	<u>NL</u>	<u>HM</u>	<u>NN</u>	<u>LN</u>	<u>LN</u>	<u>NN</u>
R15 - Meaux (North)	<u>NN</u>	<u>LM</u>	<u>LM</u>	<u>MM</u>	<u>LN</u>	<u>LL</u>	<u>LN</u>	<u>NN</u>	<u>NN</u>	<u>MH</u>	<u>NN</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>
R17 - Meaux (South)	<u>NN</u>	<u>LL</u>	<u>LL</u>	<u>NM</u>	<u>NL</u>	<u>LL</u>	<u>NL</u>	<u>NN</u>	<u>NN</u>	<u>NM</u>	<u>NN</u>	<u>NN</u>	<u>LN</u>	<u>NN</u>
R18 - Meaux (East)	<u>NN</u>	<u>LL</u>	<u>LL</u>	<u>NN</u>	<u>NN</u>	<u>LL</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>LN</u>	<u>LL</u>	<u>NN</u>
R19 - Crown Farm, Meaux	<u>NN</u>	<u>LL</u>	<u>LL</u>	<u>NN</u>	<u>NN</u>	<u>LL</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>LN</u>	<u>NN</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>
R20 - Arnold Carr Farm, Arnold	<u>NN</u>	<u>ML</u>	<u>ML</u>	<u>LN</u>	<u>NN</u>	<u>ML</u>	<u>LN</u>	<u>NN</u>	<u>NN</u>	<u>ML</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>
R21 - Weel	<u>LN</u>	<u>LM</u>	<u>LM</u>	<u>NL</u>	<u>NN</u>	<u>LM</u>	<u>NL</u>	<u>NN</u>	<u>NN</u>	<u>MM</u>	<u>NN</u>	<u>NN</u>	<u>LL</u>	<u>NN</u>
R22 - Springdale Farm, Carr Lane, Weel	<u>NL</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>	<u>NN</u>	<u>NL</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NM</u>	<u>NN</u>	<u>NM</u>	<u>NM</u>	<u>NN</u>
R24 - Wawne (North)	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>HN</u>	<u>NN</u>	<u>HN</u>	<u>HN</u>	<u>MN</u>
R29 - Woodmansey	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>LH</u>	<u>NN</u>	<u>LH</u>	<u>LH</u>	<u>NM</u>
R30 - Cottingham	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>HN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NL</u>	<u>NN</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>
R31 - Arnold	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NH</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>LN</u>	<u>LN</u>	<u>NN</u>
R32 - Beverley	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NN</u>	<u>NL</u>	<u>NL</u>	<u>NN</u>
Notes N – Negligible; L – Low; M – Medium; H – High														

Table 4 Unmitigated predicted magnitude of impact



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