Rosefield Solar Farm

Environmental Statement

Volume 4
Appendix 13.2: Construction Noise Plant Tables and Results
(Clean)

EN010158/APP/6.4.2
Revision 2
Deadline 4
June 2026
Rosefield Energyfarm Limited

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

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1. Introduction

1.1. Purpose of the Report

1.1.1. This document has been updated at Deadline 4 in response to TSC Biosciences and Preston Farms Ltd request to remove Field E23 from consideration of the Primary Construction Compound. The document references have not been updated from the original submission. Please refer to the **Guide to the Application [EN010158/APP/1.2.10]** for the list of current versions of documents.

1.1.1. This Construction Noise Plant Tables and Results Appendix has been prepared on behalf of Rosefield Energyfarm Limited ('the Applicant') to present the likely significant effects on noise and vibration in relation to the Development Consent Order (DCO) application for the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm (hereafter referred to as the 'Proposed Development').

1.2. The Order Limits

1.2.1. The extent of the Order Limits are shown in **Location, Order Limits and Grid Coordinate Plans [EN010158/APP/2.1]** and the Proposed Development is described in full in **ES Volume 1, Chapter 3: Proposed Development Description [EN010158/APP/6.1]** and shown spatially on the **Works Plans [EN010158/APP/2.3]**.

1.3. The Proposed Development

1.3.1. The Proposed Development comprises the construction, operation (including maintenance), and decommissioning of solar photovoltaic ('PV') development and energy storage, together with associated infrastructure and an underground cable connection to the National Grid East Claydon Substation.

1.3.2. The Proposed Development would include a generating station with a total exporting capacity exceeding 50 megawatts ('MW').

1.3.3. The location of the Proposed Development is shown on **ES Volume 3, Figure 1.1: Site Location Plan [EN010158/APP/6.3]** and described in **ES Volume 1, Chapter 2: Location of the Proposed Development [EN010158/APP/6.1]**. The Proposed Development would be located within the Order Limits (the land shown on the **Works Plans [EN010158/APP/2.3]** within which the Proposed Development can be carried out). The Order Limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits [EN010158/APP/6.3]**. Land within the Order Limits is known as the 'Site'.

1.3.4. The principal components of the Proposed Development include:

- Solar PV development consisting of:

– Ground mounted Solar PV generating station. The generating station would include Solar PV modules and mounting structures; and

– Balance of Solar System (BoSS) which comprises: Inverters; Transformers; Switchgear; Combiner Boxes; acoustic barriers and cabling.

- A project substation (the 'Rosefield Substation') compound comprising: Transformers; Switchgear; reactive power compensation bays; disconnectors; circuit breakers; busbars; control equipment; lightning surge arrestors; building(s) including office, control, functions, material storage, material laydown areas and welfare facilities; firewalls; fencing and acoustic barriers; a security cabin; parking as well as wider monitoring, maintenance and emergency equipment;
- A Main Collector Compound and two Satellite Collector Compounds comprising: Switchgear; Transformers; ancillary equipment; operation and maintenance and welfare facilities; material storage; material laydown areas; fencing and acoustic barriers; and security cabins;
- Battery Energy Storage System (BESS) compound comprising: batteries and associated Inverters; Transformers; Switchgear, ancillary equipment and their containers; office, control and welfare buildings; fencing and acoustic barriers; monitoring, maintenance and emergency systems; air conditioning; electrical cables; fire safety infrastructure; operation (including maintenance) security facilities; material storage; and material laydown areas;
- Interconnecting Cabling Corridor(s) to connect the Solar PV modules and the BESS to the Satellite and Main Collector Compounds to the Rosefield Substation;
- A Grid Connection Cable Corridor to connect the Rosefield Substation to the National Grid East Claydon Substation via 400kV cabling;
- Ancillary infrastructure works comprising: boundary treatment; security equipment; lighting; fencing; landscaping; internal access tracks; works to facilitate vehicular access; earthing devices; earthworks; surface water management; utility connections and diversions; and any other works identified as necessary to enable the Proposed Development;
- Green and blue infrastructure, recreation and amenity works comprising: landscaping; habitat management; biodiversity enhancement; the creation of three permissive footpaths; and works to permanently divert four PRoW Footpaths in five instances;
- Site-wide operational monitoring and security equipment; and
- Highways infrastructure improvements and safety works comprising: minor junction improvement works; road widening; passing places; and works to facilitate vehicular access to the Site.

2. Rosefield – Indicative Construction Phase Plant Lists

2.1. Plant List of Construction Tasks

Table 2.1: Vegetation clearance (Task 1)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Chain saw	D2.14	86	75	2	0	88
Chipper	-	89	75	1	0	88
Tracked excavator	C2.5	76	75	1	0	75
Dumper	C4.4	76	50	2	0	76
Tractor (towing equipment)	C4.74	80	10	1	0	70
Total						**91**

Table 2.2: Boundary fencing (Task 2)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Hydraulic hammer rig (fencing rig proxy)	EDF Data	85	50	2	0	85
Tractor (towing equipment)	C4.74	80	10	1	0	70
Total						**85**

Table 2.3: Topsoil Strip / Site Preparation (Task 3)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator	C2.5	76	75	2	0	78
Articulated dump truck (tipping fill)	C2.32	74	75	2	0	76
Dozer	C2.11	79	25	1	0	73
Tractor (towing trailer)	C4.75	79	10	1	0	69
Total						**81**

Table 2.4: Construction Compound (Task 4)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator	C2.16	75	75	2	0	77
Articulated dump truck (tipping fill)	C2.32	74	50	2	0	74
Dozer	C5.12	77	50	2	0	77
Roller	C2.38	73	25	2	0	70
Telehandler	C2.35	71	75	1	0	70
Wheeled mobile crane	C4.43	70	25	1	0	64
Diesel generator	C4.86	65	25	1	0	59
Water bowsers (discharging)	C6.37	83	10	1	0	73
Lorry	C2.34	80	10	2	0	73
Lorry with lifting boom	C4.53	77	10	1	0	67
Total						**83**

Table 2.5: Access Track Construction (Task 5)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator	C5.18	80	75	1	0	79
Dozer	C5.13	82	75	1	0	81
Vibratory roller	C5.20	75	50	1	0	72
Dump truck (tipping fill)	C2.30	79	25	1	0	73
Lorry	C2.34	80	10	1	0	70
Total						**84**

Table 2.6: Solar Panel Installations (Task 6)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Hydraulic hammer piling rig	EDF Data	85	100	2	0	88
Tracked excavator	C2.16	75	75	1	0	74
Telehandler	C2.35	71	25	2	0	68
Impact wrench	-	73	25	4	0	73
Lorry	C2.34	80	10	2	0	73
Total						**88**

Table 2.7: Bulk Earthworks (Task 7)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator	C2.16	75	75	4	0	80
Dozer	C2.11	79	75	3	0	78
Articulated dump truck (tipping fill)	C2.32	79	50	4	0	82
Roller	C2.38	73	50	2	0	73
Grader	D3.75	84	50	1	0	81
Lorry	C2.34	80	10	5	0	77
Total						**87**

Table 2.8: BESS, Substation & Collector Compounds (Task 8)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator	C2.16	75	75	2	0	77
Roller	C2.38	73	50	1	0	70
Concrete mixer truck & concrete pump	C4.28	75	50	2	0	75
Concreting - poker vibrator	C4.33	78	50	2	0	78
Wheeled mobile telescopic crane	C4.38	78	25	1	0	72
Mobile telescopic crane	C4.43	70	25	1	0	64
Telescopic handler	C2.35	71	25	1	0	65
Lorry	C2.34	80	10	2	0	73
Lorry with lifting boom	C4.53	77	10	1	0	67
Total						**83**

Table 2.9: Cable Trenching (Task 9)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator (trenching)	C4.65	71	75	1	0	70
Tracked excavator	C2.21	71	75	1	0	70
Articulated dump truck (tipping fill)	C2.32	74	50	1	0	71
Hydraulic vibratory compactor (tracked excavator)	C2.42	78	50	1	0	75
Telescopic handler	C2.35	71	25	1	0	65
Tractor (towing equipment)	C4.74	80	10	1	0	70
Cable Powered Realer (rope)	-	76	50	1	0	73
Cable Drum Mounted Trailer and Tractor Unit	-	79	50	1	0	76
Lorry	C2.34	80	10	4	0	76
Lorry with lifting boom	C4.53	77	20	1	0	70
Total						**83**

Table 2.10: Horizontal Directional Drilling (Task 10)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
HDD Power unit & drill	-	83	100	1	0	83
HDD Generator	-	70	100	1	0	70
Bentonite pump	-	76	100	1	0	76
Bentonite mixer	-	70	100	1	0	70
Diesel generator	C4.78	66	100	1	0	66
Tracked excavator	C2.2	77	50	1	0	74
Wheeled mobile crane	C4.43	70	25	1	0	64
Lorry	C2.34	80	10	1	0	70
Total						**85**

Table 2.11: Use of Construction Compound (Task 11)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Diesel generator (power for site cabins)	C4.78	66	100	4	0	72
Diesel generator (power for lighting)	C4.86	65	25	1	0	59
Telescopic handler	C2.35	71	50	1	0	68
Lorry with lifting boom	C4.53	77	25	1	0	71
Lorry	C2.34	80	10	1	0	70
Total						**77**

Table 2.12: Highway Improvement works - Road widening (Task 12)

Plant	BS 5228 Reference	Sound pressure level at 10m, dB(A)	Estimated percentage on-time	Number of plant Items	Screening, dB	Adjusted sound pressure level at 10m, dB(A)
Tracked excavator	C.5.18	80	50	-3	1	77
Dump truck	C.2.30	79	50	-3	1	76
Asphalt paver (+ tipper lorry)	C.5.31	77	50	-3	1	74
Vibratory roller	C.5.20	75	50	-3	1	72
Total						**81**

3. Rosefield – Predicted Construction Phase Noise Levels

Table 3.1: Construction noise predictions by task without additional mitigation, dB $L_{Aeq,T}$ (inclusive of 3 dB façade correction)

Receptor	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9	Task 10	Task 11
R01_Beachfield	39	35	30	30	32	38	31	27	31	23	20
R02_Bernwood Farm	56	60	56	46	51	63	48	44	49	42	40
R03_Orchard Way, Botolph Claydon	54	50	46	42	46	54	44	40	45	39	36
R04_Botyl Rd, Botolph Claydon	60	56	52	43	51	60	44	40	48	40	37
R05_Brickhill Way, Calvert	50	49	44	39	45	52	34	30	44	22	23
R06_Calvert Cottages	64	64	60	38	57	68	38	34	56	23	28
R07_Catherine Cottages	67	69	66	53	63	72	57	53	52	27	47
R08_Catherine Farm	56	59	54	48	50	62	55	51	47	28	42
R09_Clayton Rd	49	47	42	38	43	50	42	38	41	37	28
R10_Dry Leys Farmhouse	47	45	41	37	40	49	39	35	39	32	24
R11_Finmere Hill House	45	51	47	34	44	55	36	32	43	29	23
R12_Hogshaw Farm	55	57	52	41	49	60	48	44	48	41	32
R13_Knowlhill Farm	55	53	49	39	48	57	44	40	47	28	33
R14_Lower Farm	55	48	44	40	48	51	44	40	46	48	34

Receptor	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9	Task 10	Task 11
R15_Muxwell Farm	66	42	38	39	58	45	43	38	56	32	32
R16_Pond Farm	61	69	65	43	65	73	39	35	61	24	28
R17_The Old Dairy, Pond Farm	60	67	63	43	62	70	39	35	60	24	29
R18_Sion Hill Farm	62	58	54	56	50	62	60	56	56	38	50
R19_Woodland Barn	40	38	34	29	35	41	32	28	34	26	19
R20_Borshaw Farm	54	51	47	43	49	54	53	49	47	48	36
R21_Brackley Ln, Calvert (A)	51	51	47	37	48	54	34	30	46	22	23
R22_Brackley Ln, Calvert (B)	51	51	47	37	48	54	34	30	46	22	23
R23_Red Kit View, Calvert	50	50	46	40	46	54	34	30	45	22	24
R24_Blackmore Hill Farm Cottages	64	71	67	52	60	75	57	53	49	27	45
R25_Woodlands Farm Fishery	41	40	36	30	37	44	33	29	35	27	20
R26_Claydon House	47	42	38	38	41	45	43	39	40	30	32
R27_Middle Farm	42	38	33	31	35	41	34	30	34	29	20
R28_Granborough	46	41	37	37	39	44	42	38	37	32	26
R29_East Claydon	46	41	36	38	39	44	41	37	37	35	32

3.1.1. For Task 12, the road widening works on the are expected to be undertaken approximately 80m from the nearest residential property. At this separation distance, the predicted noise level would be 64 dB $L_{Aeq,T}$.

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