

# South Brooks Solar Farm

## Preliminary Environmental Information

Volume 2: Environmental Summary

Chapter 12: Noise and Vibration

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Blue Planet Solar Limited



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## 12 Noise and Vibration

### 12.1 Noise and Vibration

#### **What is 'Noise and Vibration'**

- 12.1.1 Noise is the term used to describe unwanted or excessive sound generated by human activity. Activities relevant to the context of the Project include construction, operation and decommissioning activities which may occur as part of the Project, and can affect environmental receptors.
- 12.1.2 Vibration is the term used to describe oscillating movement of the ground, structures or equipment caused by specific activities such as traffic movements or piling works.
- 12.1.3 The following section details the specific sources that could contribute to potential noise and vibration impacts over the course of the Project.

#### *Noise from construction and decommissioning traffic*

- 12.1.4 Noise effects from construction and decommissioning traffic may include road traffic sounds, such as engine noise and tyres on road surfaces. These sounds are considered for properties within the immediate vicinity of the Site that are likely to experience a change in road traffic noise which has the potential to lead to significant noise effects due to the addition of construction traffic, and roads within the Site that are proposed to carry construction vehicles.

#### *Vibration from construction and decommissioning traffic*

- 12.1.5 Vibration effects from construction and decommissioning traffic are considered for the existing noise sensitive receptors in the immediate vicinity of the proposed construction and decommissioning traffic route and proposed haul road within the Site.

#### *Noise from on-site construction and decommissioning activities*

- 12.1.6 Noise from construction and decommissioning activities may include (but is not limited to) sounds associated with construction of PV arrays (such as fixing of panels and mounting equipment); the tipping and compaction of aggregate to create internal roads; movement of any earth; the delivery and movement of other solar infrastructure such as the inverters etc. Using professional judgement, a study distance of 300m from on-site construction activities is considered, as beyond this distance, construction noise effects are unlikely.

*Vibration from on-site construction activities*

12.1.7 Vibration effects from the piling of the mounting equipment into the ground for the panels. A distance of 100m from high-energy construction works such as piling is considered. Beyond this distance, vibration effects are unlikely.

*Maintenance and replacement*

12.1.8 Maintenance of the Site is likely to be minimal and not cause significant emissions of noise. Due to the size of the Project, maintenance may be required for strategic replacement of infrastructure. Any noise impact from these activities will be less than those identified during the construction and decommissioning phase due to a phased approach. It is unlikely that replacement of all infrastructure will be required during the same period. Best practice measures will be implemented throughout these procedures and when in close proximity to noise sensitive receptors it may be necessary that the same mitigation measures proposed for construction or decommissioning are implemented.

*Noise from the operational activities*

12.1.9 Noise from operational activities may include (but is not limited to) sounds associated with the operation of the inverters, transformers and the BESS unit. Using professional judgement, a study distance of 300m from on-site construction activities is considered, as beyond this distance, construction noise effects are unlikely.

*Vibration from the operational activities*

12.1.10 No vibration is predicted to occur during the operational phase of the Project. No Vibration emitting sources will be operational during this period of the Project.

**12.2 Key Terms**

**Table 12-1: Key Terms**

<b>Term</b>	<b>Definition</b>
<b>Ambient Sound Level, <math>L_{Aeq,T}</math></b>	The A-weighted equivalent continuous sound level over a given time period. It is the sound level of a steady sound that has the same energy as a fluctuating sound over the same time period. Daytime is typically 07:00 – 23:00, and nighttime is typically 23:00 – 07:00.
<b>Decibel, dB</b>	The logarithmically scaled measurement unit of sound, which is used to describe the magnitude of sound.

Term	Definition
<b>Noise</b>	In basic terms, unwanted sound. In the context of this assessment, environmental sound sources which typically includes transportation and industrial/commercial.
<b>Noise Modelling</b>	The use of computer software to predict noise levels.
<b>Noise Monitoring</b>	The measurement of sound levels at a specific location.
<b>Noise Sensitive Receptor, NSR</b>	Receptors which are particularly sensitive to noise. Examples include residential dwellings, hospitals, healthcare facilities, education facilities, community facilities, quiet areas designated under the European Noise Directive (END), international and national or statutorily designated sites, public rights of way and cultural heritage assets.
<b>Rating Level, <math>L_{Ar,Tr}</math></b>	The specific sound level plus any adjustment for the characteristic features of the sound.
<b>Residual Sound Level</b>	The A-weighted equivalent continuous sound pressure level produced in the absence of the specific sound source at the reference location over a reference time interval, T.
<b>Receptors</b>	The location of residential dwellings or properties which could be adversely affected by Noise and Vibration. Properties which can be considered receptors include but are not limited to, residential dwellings, schools and places of worship.
<b>Sound</b>	The physical vibration in the air, propagating away from a source, whether heard or not.
<b>Vibration</b>	Vibration may be expressed in terms of displacement, velocity or acceleration. Velocity and acceleration are most commonly used when assessing the risk of building damage, human comfort or structure borne noise issues.

### 12.3 Summary of Points raised in EIA Scoping Opinion and Project Response

12.3.1 Comments provided by the Planning Inspectorate (PINS) relating to areas to be considered (scoped in) to the Noise and Vibration Assessment are summarised in Table 12-2 below.

**Baseline Survey Monitoring Locations**

- Noise Monitoring Location ●
- Weather Monitoring Location ●
- Site Boundary

**Legend**

Defra Round 4 Noise Mapping  
Daytime LAeq,16 hour

0 - 40

40 - 45

45 - 50

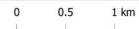
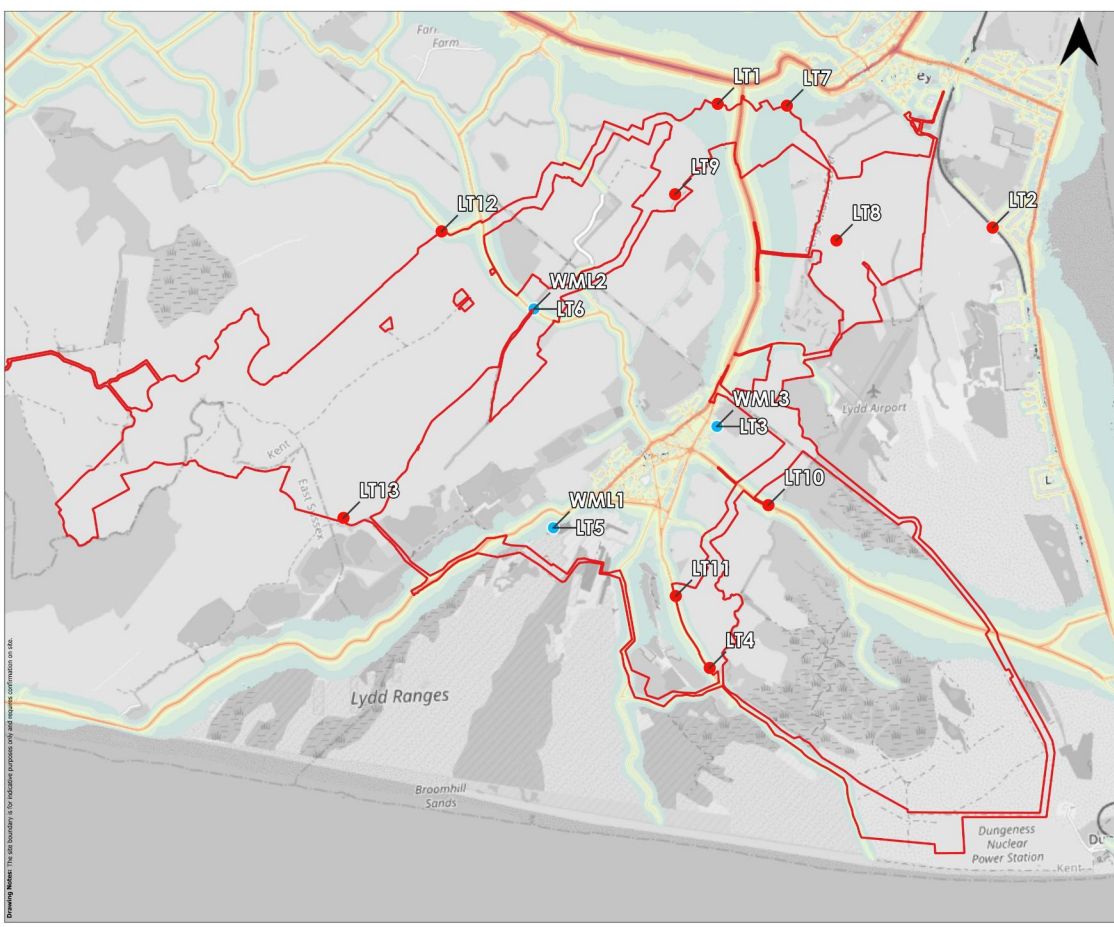
50 - 55

55 - 60

60 - 65

65 - 70

70 - 75



Drawing Index: The site boundary is for indication purposes only and requires confirmation on site.

Legend

Baseline Survey Monitoring  
Locations

- Noise Monitoring Location
- Weather Monitoring Location
- Site Boundary



Drawing Index: This site boundary is for indicative purposes only and requires confirmation on site.

Summary of Consultation Comments	Discipline Feedback	Next Steps
<p>The ES should make clear the criteria used in line with relevant guidance to identify receptors and determine their sensitivity.</p>	<p>The ES will include descriptions of all relevant guidance, along with full descriptions of the adopted criteria for assessing the magnitude of noise and vibration impacts, based on the relevant guidance. Receptor sensitivities will also be described. It should be noted that agricultural and industrial receptors would typically be considered very low sensitivity in relation to noise and vibration impacts, hence the focus on residential receptors (which are of high sensitivity), and which will therefore drive the outcome of the noise and vibration assessment. The noise assessment methodology and monitoring locations were agreed with Folkestone and Hythe District Council. The Environmental Health Office at Rother District Council was</p>	<p>included within the study area.</p> <p>This will be assessed through the Noise and Vibration chapter of the ES stage of the Project and considered through the Site design and decommissioning strategies, an outline of the sensitive receptor locations are detailed below (Section 12.4).</p>

Summary of Consultation Comments	Discipline Feedback	Next Steps
	contacted for confirmation, however, no response has been received at the time of writing. We will continue to engage with both Local Authorities.	

## 12.4 Ongoing Noise and Vibration Work

### Study Area

12.4.1 The study area adopted for this Project during this stage of the assessment is 300m from the Project. Study areas are likely to be refined and reduced during the ES stage of the assessment as further detail becomes available on likely areas of work, locations of plant and equipment etc., and bespoke study areas will be identified for each stage of the Project, including construction, operation and decommissioning. The study area will be impacted by the proposed plant and the working methodologies. This study area has been selected based on the maximum setback distance beyond which noise and vibration effects are unlikely to be significant based on professional experience with similar projects. As the design develops between now and the ES, along with further details of the proposed noise-generating plant and amendments to relevant standard and guidance, the ES will further refine study areas for construction, operation and decommissioning stages.

### Baseline Noise survey

12.4.2 Noise-sensitive receptors that lie within the study area were identified through a desk-based assessment which identified existing and proposed residential dwellings within 300m of the Project site. Measurement locations were then selected and discussed with the Local Planning Authorities (see also **Table 12-2** above) as likely to experience baseline noise levels that are representative of the identified receptor. Unattended noise measurements were undertaken at these locations for five days, including a weekend. The survey was undertaken between 21<sup>st</sup> November and 11<sup>th</sup> December 2025. The results of this noise survey will be used to identify the criteria against which any potential noise impacts are assessed in accordance with the relevant standard and guidance. The location of the noise monitoring locations is shown in : **Noise Monitoring Locations**.

12.4.3 The monitoring identified that the background measured noise level at all locations would generally be considered to be low, with the night-time periods would be considered to be very low. The locations set further from the existing local road network and built-up areas were particularly quiet, especially during the night-time period. These low existing background noise levels in the area will therefore be a relevant consideration for the assessment of noise from the Project, and will be the focus of the assessment. A summary of the results of the baseline survey is included in Table 12-3.

**Table 12-3: Noise Monitoring Results**

Monitoring Location	Dates	L <sub>Aeq,1</sub> 6hr (dB)	L <sub>Aeq,8</sub> hr (dB)	Daytime L <sub>A90,15min</sub> (dB)		Night-time L <sub>A90,15min</sub> (dB)	
				Mean	Mode	Mean	Mode
LT1	Friday 21/11/2025 – Wednesday 06/11/2025	54	48	46	51	34	28
LT2	Tuesday 02/12/2025 – Thursday 10/12/2025	51	42	40	35	33	36
LT3	Tuesday 02/12/2025 – Friday 05/12/2025	48	41	40	43	29	24
LT4	Tuesday 02/12/2025 – Sunday 07/12/2025	49	43	37	34	35	39
LT5	Monday 19/08/2024 – Friday 23/08/2024	51	46	44	49	39	33
LT6	Friday 21/11/2025 – Wednesday 26/11/2025	45	39	34	34	32	28
LT7	Friday 21/11/2025 – Monday 01/12/2025	50	46	45	46	35	39
LT8	Monday 01/12/2025 – Monday 08/12/2025	51	41	41	43	30	25
LT9	Friday 21/11/2025 – Monday 01/12/2025	45	39	37	36	31	30
LT10	Tuesday 02/12/2025 – Thursday 11/12/2025	69	63	41	42	33	29
LT11	Tuesday 02/12/2025 – Thursday 11/12/2025	49	40	37	37	33	34
LT12	Friday 21/11/2025 – Monday 01/12/2025	43	37	32	31	30	27
LT13	Friday 21/11/2025 – Tuesday 25/11/2025	41	42	32	38	35	36

12.4.4 While not directly comparable, : **DEFRA’s Strategic Noise Map** shows DEFRA’s noise maps for road traffic across the Project area. Areas shown as less than 50 dB L<sub>Aeq,16 hour</sub> are generally considered to be quiet.

12.4.5 Some items of plant, such as inverter units associated with the solar panels, will generate less noise during hours of darkness when the solar panels are not generating electricity, whilst other items of plant, such as substation equipment and potentially the BESS units depending on operating modes, will generate similar amounts of noise during both day and night. The noise assessment for the Project will therefore take account of the different noise levels produced by different activities during different periods of the day / night.

## **12.5 Considering Noise and Vibration in Design**

### **Stand off from existing sensitive receptors**

12.5.1 Noise and vibration impacts have been and continue to be considered throughout all stages of the Project design. This includes, at the initial design stage, a minimum of 100m stand-off from residential properties to the PV panels and associated inverters, and a 300m stand-off from all residential properties to all larger items of noise-generating equipment, such as substations and BESS units. These offsets provide a strong baseline to reduce the potential for noise effects on nearby Noise Sensitive Receptors. Where necessary, further bespoke mitigation measures will be identified. This could include, for example, installation of acoustic barriers, or where feasible design measures such as selection of quieter plant and / or positioning and orientation of equipment within the proposed Site.

## **12.6 Potential likely significant effects at this stage of the Project**

12.6.1 Table 12-4 presents the potential likely significant effects at this stage of the Project for noise and vibration.

**Table 12-4: Potential Likely Significant Effects**

Phase	Activity and Receptor	Mitigation measures	Potential significant effect(s)	Next steps
Construction	All noise-sensitive receptors within 300m of the Project boundary.	<p>Outline Construction Environmental Management Plan (oCEMP) detailing best practice measures will be submitted as part of the DCO application, to which an early draft has been submitted as part of Phase Two Consultation. The best practice measures will include but are not limited to:</p> <ul style="list-style-type: none"> <li>• specific operational periods,</li> <li>• vehicle and plant management, and;</li> <li>• working methods.</li> </ul> <p>Outline Construction Traffic Management Plan (oCTMP) will be submitted as part of the DCO application, to which an early draft has been submitted as part of Phase Two Consultation.</p> <p>Localised Bundings will be designed and implemented where required. The design will be submitted as part of the DCO application.</p> <p>Quieter plant will be identified and implemented where required. Where possible, the plant specifications will be submitted as part of the DCO application.</p>	Effects are expected to be not significant	<p>Assessment of noise and vibration impact from construction operations will be assessed in full within the Noise and Vibration chapter of the ES that will accompany the DCO submission.</p> <p>No significant effects are expected from the operation of the buried cables. The installation of the cables and associated infrastructure during the construction phase</p>

Phase	Activity and Receptor	Mitigation measures	Potential significant effect(s)	Next steps
				<p>has the potential to cause adverse noise impacts and therefore will be assessed in full. The Project incorporates the adoption of an outline Construction Environmental Management Plan (oCEMP) to minimise noise emissions during the construction works.</p>
Operational	All noise-sensitive receptors within 300m of the Project boundary.	Stand offs within the Site will be designed and implemented where required. The design will be submitted as part of the DCO application. Quieter plant will be identified and implemented where required. The plant specifications will be submitted as part of the DCO application process where possible.	Effects are expected to be not significant.	Assessment of noise impact from operational noise will be assessed in full within the Noise and Vibration chapter of the ES that will

Phase	Activity and Receptor	Mitigation measures	Potential significant effect(s)	Next steps
		<p>Enclosures for noise generating plant will be identified and implemented where required. Where possible, the plant specifications will be submitted as part of the DCO application.</p>		<p>accompany the DCO submission.</p>
Decommissioning	<p>All noise-sensitive receptors within 300m of the Project boundary.</p>	<p>Outline Decommissioning Environmental Management Plan (oDEMP) detailing best practice measures, will be submitted as part of the DCO application). The best practice measures will include but are not limited to:</p> <ul style="list-style-type: none"> <li>• specific operational periods,</li> <li>• vehicle and plant management, and;</li> <li>• working methods.</li> </ul> <p>Localised screening will be designed and implemented where required. The design will be submitted as part of the DCO application process. Quieter plant will be identified and implemented where required. Where possible, the plant specifications will be submitted as part of the DCO application.</p>	<p>Effects are expected to be not significant.</p>	<p>Assessment of noise and vibration impact from construction operations will be assessed in full within the Noise and Vibration chapter of the ES that will accompany the DCO submission.</p> <p>The installation of the cables and associated infrastructure during the construction phase has the potential to cause adverse</p>

Phase	Activity and Receptor	Mitigation measures	Potential significant effect(s)	Next steps
				noise impacts and therefore will be assessed in full. The Project incorporates the adoption of an outline Decommissioning Environmental Management Plan (DEMP) to minimise noise emissions during the decommissioning works.

- Figure 12-1: Noise Monitoring Locations

- Figure 12-2: DEFRA's Strategic Noise Map



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