

**SOUTH DERBYSHIRE DISTRICT COUNCIL’S COMMENTS ON
DIANE ABBOTT’S NOISE REPRESENTATION**

Oaklands Farm Solar Farm NSIP

(Construction and operation of a solar farm plus energy storage with
associated infrastructure and connection to the grid)

Application by Oaklands Farm Solar Ltd

PINS Reference: EN010122

EN010122 - Oaklands Farm Solar Park NSIP – SDDC’s Comments on Diane Abbott’s Noise Representation

Item:	Diane Abbott’s Comment	SDDC Response:
1.	Once operational the site will produce noise both day and night, this will have a great impact on local residents and on the amenity of the site for users of the local road network and footpaths.	SDDC are of the view that these are not relevant receptors in determining the application.
2.	The noise report and methodology repeatedly seek to minimise the actual impact the development will have on the local population. An impartial study should review the various noise thresholds set within the report to determine if they are consistent with the appropriate planning requirements.	SDDC would advise that the planning guidance in regards noise does not seek to prevent impact but prevent significant adverse impacts. SDDC is satisfied that the submission by the applicant have considered the relevant noise standards.
3.	The magnitude of criteria for daytime construction noise has the starting threshold for “minimal” effect of 65dB, this seems unreasonably high for the typically tranquil nature of the surroundings and for works that will last for 2 years. A starting threshold of 50dB would be a more reasonable.	SDDC are of the view that such a low level is not in accordance with the guidance Environmental Health are obliged to consider, and SDDC are not able to support this suggestion.
4.	The methodology for the noise assessment fails to use the measured baseline noise survey data to set the LOAEL and SOAEL. Instead, it arbitrarily chooses to use BS8233 which is intended to be used to determine insulation requirements for new and refurbished dwellings in noisy areas. The Government document Method Implementation Document (MID) for BS4142 Section 8.5 states that “You must not use BS8233 to assess noise pollution from an industrial or commercial sound. It does not take into account any acoustic features such as tonality, impulsivity, intermittency or other distinguishing feature.”	SDDC advise that it is appropriate to use a combination of both BS4142 and BS8233 in such assessments. Where background levels are very low, it is considered acceptable practice to consider the absolute levels with reference to the BS8233 standards to assess likely impacts. An excerpt from page 16 of the standard confirms this as follows: ‘Where background sound

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		<p>levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.’</p>
5.	<p>The use of this inappropriate standard artificially increases the baseline by up to 7dB (day) and 16dB (night), which is a massive misrepresentation. These new baselines already exceed the LOAEL and SOAEL thresholds in places – before the additional noise of the site is considered.</p> <p>The use of this clearly inappropriate standard to artificially increase baseline levels by up to 16dB show the willingness of BayWa misrepresent the development and to purposefully mislead the average layperson reading these reports.</p> <p>The LOAEL and SOAEL should be based on 5dB and 10dB increases above measured baseline – as defined by SDDC policy.</p>	<p>SDDC are satisfied that the levels are sufficiently low so as not to have a significant adverse impact.</p>
6.	<p>The long-term sound recording meter at Twin Oaks failed, therefore there is only limited short term data available for some of the closest properties to the development.</p>	<p>SDDC are satisfied that the monitoring is sufficient to characterise the existing noise climate, in terms of both duration and locations, given the nature of the noise under consideration.</p>
7.	<p>The short term attended noise assessments should not have been carried out during rush-hour as these times are not representative of the tranquil nature of the area. The Government document MID for BS4142 (Dec 2023) clarifies this, section 7.3 states: “You must not measure during the most unfavourable time interval and claim it is representative of the whole day or night period.”</p>	<p>SDDC are satisfied that the monitoring is sufficient to characterise the existing noise climate, in terms of both duration</p>

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		and locations, given the nature of the noise under consideration.
8.	<p>The noise survey mentions that passing trains can be heard at night (from 2km away). Trains can generate 80-95dBA (up close), but this is a transitory noise source, from a distance, lasting only a few seconds. Some of the operational equipment on site is expected to generate noise levels of >90dBA and is sited less than 500m from local properties. It therefore unlikely that the noise impacts on nearby receptors will be “negligible” as claimed.</p> <p>The noise document says that string inverters will be sited as far from receptors as possible. This is clearly not the case for the string inverters near to properties in Rosliston, and at Lad’s Grave. To improve attenuation, the inverters should be positioned in the middle of the solar fields, rather than at the boundaries close to receptors.</p> <p>Actual noise levels for much of the operational equipment remains unknown and multiple approximations and assumptions have been made throughout the document. As a result, the proposed operational sound mapping is pure speculation, and I don’t believe any meaningful conclusions of how residents will be affected can be drawn. Nevertheless, if the measured baseline levels are taken, then it can be shown that the noise on site will exceed the current nighttime LAOEL thresholds of 5dB over baseline for many of the properties.</p>	<p>SDDC is of the view that it is not uncommon for impact assessment to be undertaken in this manner to demonstrate a scheme is viable. As per previous comments ‘It is also noted that the developer will be required to undertake and submit an operational noise assessment to the local planning authority prior to the start of works on site (DCO Requirement 15) to demonstrate that detailed design and plant selected do not demonstrably affect noise sensitive receptors in accordance with the conclusions of the assessment.’</p>
9.	<p>More information is required on the type of equipment and levels of noise that will be generated on-site.</p> <p>Referring to Appendix 6.1 Section 11.136. The noise report fails to add a sufficient modifier for the tonal noise source from the equipment (inverter and transformer hum will be noticeably tonal) which should result in a 5dB penalty. The report claims that it is only the transformers that will have a tonal quality, but in reality, the data simply isn’t available to confirm this.</p>	<p>SDDC advise that the EIA noise chapter sufficiently demonstrates that the installation is capable of being developed, in principle, without resulting in significant adverse impacts from noise.</p>

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10.	<p>There is also the expectation of a 3dB (or higher) modifier for acoustic features such as a whine, hiss or screech (again, refer to the MID for BS4142). This modifier this has not been applied despite it being well known that inverters and transformers can produce an unpleasant high-pitched noise.</p> <p>I’d also like to see an assessment on how low frequency noise from the site may impact neighbours.</p>	<p>SDDC considers that it would not be unreasonable to request the applicant to demonstrate whether any of the plant will include significant low frequency noise characteristics that might require further consideration at this stage.</p>
11.	<p>An independent report should be prepared to ensure that noise impacts are properly and impartially assessed using the appropriate standards.</p> <p>On the basis of this revised noise report, the developer should be expected to provide sound attenuated equipment, acoustic screening and other methods to minimise the impact on all nearby properties. There should also be provisions to check emitted noise levels once the site is running and to ensure that the claimed thresholds are met and enforced.</p> <p><u>Definition of LOAEL & SOAEL</u></p> <p>I remain convinced that the noise targets for the site should be based on the actual measured baselines from this tranquil area and should not be derived (either wholly or partially) from inappropriate standards such as BS8233.</p> <p>The British Standard’s website includes the following information:</p> <p>BS8233:2014 “Guidance on sound insulation and noise reduction for buildings.”</p> <p>BS 8233 provides guidance for the control of noise in and around buildings.</p>	<p>SDDC is satisfied that the application has correctly considered the relevant guidance when determining the significance of potential noise impacts.</p>

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	<p>BS 8233 is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.</p> <p>Similarly, the WHO guidelines are designed to minimise health risks from noise levels and should therefore be considered to be the very highest threshold allowable from a new development. As such they are therefore not appropriate for use in quiet rural areas</p> <p>Although the Applicant’s state that BS4142 indicates that absolute sound levels may be more appropriate as a measure, this is in the context of maintaining a tranquil soundscape, rather than referring to absolute maximum thresholds such as WHO guidance. This is clarified by the IEMA Guidelines for Environmental Noise Impact Assessment which notes:</p> <p>“The Influence of Absolute Noise Level: Relying solely on the change in noise level is not appropriate because it risks ignoring the context of the noise change...For an area which is valued because of the soundscape, a relatively small impact could be considered as having a potentially substantive effect if the quality of the noise environment were to be eroded. This particularly relates to tranquil, quiet or calm areas.”</p> <p>I therefore suggest that the LOAEL and SOAEL are derived from the mean of the measured baseline noise levels provided by the Applicant – these are 35dB (day) and 28dB (night) which would create LOAEL max figures of 40dB (day) and 33dB (night) and SOAEL max figures of 45dB (day) and 38dB (night). The high magnitude threshold of 10dB over baseline will therefore be >45dB (day) and >38dB (night).</p>	

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<p>This is summarised in the following table (my proposed figures shown in green):</p>								
			Applicant's noise thresholds		Defined by measured baseline		Response / Action	
Magnitude of effect / Threshold			Day	Night	Day	Night		
High	SOAEL	>10dB above background	>50dB	>50dB	>45dB	>38dB	Unacceptable adverse effect / Prevent	
Medium	SOAEL	> 5dB above background	45-50dB	45-50dB	40-45dB	33-38dB	Significant Adverse Effect / Avoid	
Low	LOAEL	<5 dB above background	40-45dB	40-45dB	35-40dB	28-33dB	Present and Obtrusive / Mitigate and reduce to a minimum	
Minimal		Less than or equal to background	<40db	<40dB	35dB	28dB	Present Not Intrusive / No action	
		Measured baseline noise level (mean)			35dB	28dB		
<p>It should be noted that a 10dB increase equates to a subjective doubling of perceived noise level. Therefore, the original suggested thresholds would have nighttime noise levels more than doubling whilst remaining within the LOAEL threshold and there would be a subjective quadrupling of perceived noise within the SOAEL category.</p>								

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12.	<p><u>Night-time noise predictions.</u></p> <p>In Section A11.3.4 (Appendix 11.3 Operational Noise Source Data) it is stated that the string inverter fans will run when the ambient temperature is above 20°C and solar output is above 70kW. The Applicants claim (without presenting evidence) that this is unlikely to occur before 7am and therefore the night-time noise predictions “assume” that the inverters only emit 62dB (rather than 84dB with fans running).</p> <p>Due to climate change, we are now seeing more tropical nighttime temperatures (exceeding 20°C) in the UK, and this trend will continue. As the sun rises as early as 5am in the summer, I believe it is quite likely that during warmer periods the cooling fans could be running well before 7am. This therefore needs to be factored into the night-time noise predictions. Could the Applicants provide more evidence regarding the likelihood of the inverter fans running in the early morning or late evening and / or resubmit noise predictions based on fan noise at nighttime.</p> <p>NB: Mallard Pass section 10.5.7 assumed the worst case; that fans would run at maximum power during all daylight hours:</p> <p>“This plant will mainly operate during the daytime, in which background noise levels tended to be more elevated; however, during the summer months, daylight periods may extend to early morning periods (05:00 to 07:00) and evening periods (18:00 to 23:00). Therefore, as a worst case, the plant noise from the Proposed Development has been considered against these quieter periods. Also, the plant has been assumed to operate at full duty (with its maximum level of noise emission) during this period.”</p>	<p>SDDC consider that there is a potential for the temperatures to exceed 20°C during noise sensitive hours, albeit it on very rare occasions. However, given that the Applicant has not considered this potential impact in detail, it would not be unreasonable for further assessment or controls to be provided. In the absence of any assessment of this impact, SDDC would suggest the applicant put measures in place to ensure that the system does not operate during noise sensitive hours in the event the ambient temperatures exceed 20°C.</p>

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13.	<p><u>Operational Noise from String Inverters</u></p> <p>With reference to the existing noise levels at Oakland’s Farm, the Applicant states that they are controlled by the fans on the cow sheds.</p> <p>“The background noise levels during both survey visits at this location were observed to be controlled by ventilation fans on Oaklands Farm.”</p> <p>Whilst the sound power levels of these fans are not known, the recorded noise levels from these four fans ranged between 63 and 71dB LA90 (at 5m) which elevated background noise at Twin Oaks House to 41dB (day) and 36dB (night).</p> <p>The sound power levels of the string inverters with the fans running are shown in the documentation to be 84dBA. It might therefore be reasonable to assume that the inverter fans will become the dominant background noise surrounding the site (both day and night). This needs to be considered in line with the potentially revised LOAEL and SOAEL.</p>	<p>SDDC is satisfied that the noise levels, in absolute terms, are sufficiently low that further consideration of this is unnecessary at this stage.</p>
14.	<p>I am not satisfied with the response regarding low frequency noises as these are known to travel for considerable distances (several km) with minimal attenuation. The Applicant fails to consider this fact when they state:</p> <p>“The most likely source of low frequency sound would be from the substation plant which has been located over 500m from residential properties and is not assessed to result in a significant noise impact.”</p>	<p>Low frequency noise can be a significant issue in regards to the types of installations commonly associated with solar farms. However, this can be suitably controlled through the submission of the operational noise assessment to the Local Planning Authority prior to the start of works.</p>