TECHNICAL NOTE

Project:	Statera Pelham
Client:	Statera Energy Ltd
Date:	06/03/2023
Reference:	JAJ03542-TN-02-R0
Subject:	Planning Application S62A/22/0006 - Land at Berden Hall, Dewes Green Road, Berden Response to EHO Comments

1 INTRODUCTION

1.1 RPS Acoustics Team (RPS) have been appointed by Statera Energy Ltd to respond to comments from Mr A. Luck, Senior Environmental Health Officer at Uttlesford District Council (UDC) dated 16th August 2022.

1.2 The comments are provided to the Planning Inspectorate in relation to the proposed development on the Land at Berden Hall, Dewes Green Road, Berden (planning reference S62A/22/0006). EHDC recommend that planning permission is refused.

1.3 This technical note summarises the above comments and provides the relevant responses / comments where appropriate.

2 RPS RESPONSE TO UDC COMMENTS

2.1 The planning application references given by EHDC are as follows:

Table 2.1

EHDC planning application references	
EHDC References	**RPS comment with reference to UDC planning portal (1)**
UTT/16/2316/FUL – referred to as "Solar Farm"	Development of a 49.99 MW Battery Storage Facility connected to Pelham Substation. The development will support Enhanced Frequency Response (EFR) which is a new service required by National Grid to help balance the frequency fluctuation of the grid system. Battery Storage Facility
UTT/22/2046/PINS – referred to as "Existing BESS site"	Consultation on S62A/22/006 – Development of a ground mounted solar farm with a generation capacity of up to 49.99 MW, together with associated infrastructure and landscaping. Solar Farm
3/21/0806/FUL – referred to as "Crabbs Green"	UTT/22/1203/FUL - Construction and operation of a Battery Energy Storage System and associated infrastructure. Cross Boundary Application in conjunction with East Herts District Council (ref. 3/22/0806/FUL) - access only in Uttlesford District Cross boundary application – access only

(1) UDC – Uttlesford District Council

2.2 The following table provides high-level responses to the queries and comments from EHDC.

Table 2.2

RPS response to EHDC comments	
EHDC Comments	**RPS Response**
EHDC Environmental Health has received complaints, which have later been evidenced, regarding the current noise environment of the area primarily due to low frequency noise (100 Hz and 200 Hz) emission from the existing site but especially due to the unenclosed DNA transformer.	Low frequency noise complaints from an existing facility should not impact the assessment or decision for the proposed solar farm but should be addressed as a separate issue, i.e. a statutory noise issue under the Control of Pollution Act.
The RPS report uses BS 4142 however the standard states that it is inappropriate for use when considering low frequency noise, therefore the report does not sufficiently assess the impact of the dominant frequencies emitted by existing and proposed equipment.	Correct – BS 4142:2014+A1:2019 does not apply to low frequency noise, which should be considered and assessed in accordance with the guidance in NANR45 [1]. However, while noise from existing equipment at another site is considered within the cumulative assessment, the level of detail requested is not reasonable or relevant for the current application.

[1] *NANR45 "Proposed criteria for the assessment of low frequency noise disturbance" Revision 1, December 2011 – DEFRA, Dr. A Moorhouse, Dr. D. Waddington, Dr. M. Adams*

RPS response to EHDC comments	
"The existing BESS site is instigating an artificial increased background noise levels which should not be the case,…"	The baseline sound levels [2] from the 2016 application for the BESS site are similar to the current measurements [3]. Therefore, the BESS site is unlikely to instigate an artificial increase of the background sound levels.
Figure 1 – $L_{Aeq, min}$ measurement positions	Shows the comparison of the $L_{Aeq, min}$ which is the lowest observed L_{Aeq} value in the given measurement positions. This indicates the lowest L_{Aeq} but is not suitable for quantifying the background sound levels nor the typical ambient or residual sound levels
These results suggest that equipment at the existing BESS site was switched on during the background noise measurements used for the RPS report, which would mean that the assessment is invalid.	As demonstrated by the BS 4142:2014+A1:2019 assessment for the proposed solar farm in isolation, it would make no difference if the BESS site was switched on. The specific sound levels for the solar farm alone and thus rating levels are significantly below the background sound levels, regardless of which background sound levels are used. For the cumulative assessment, using the lower background levels and rating levels (incl. penalties) as reported the assessment would be as shown in Table 2.3 below. While it is not 10 dB below background during daytime, it is still below background which in BS 4142:2014+A1:2019 terms indicate a low impact, depending on the context. During night-time the rating level would be 5 dB above background sound level, which in BS 4142:2014+A1:2019 terms indicate the possibility of adverse impact depending on the context. When looking at the absolute levels from 2016, which is 34 dB @ NSR D, changes in ambient noise levels for the cumulative scheme are + 1 dB during daytime and + 3 dB during night-time. For broadband sounds a 3 dB change is only just perceptible. It is unlikely that the cumulative developments would result in any adverse noise impact.
The report does not take NSRs in Stocking Pelham into consideration… … The impact on noise levels experienced in Stocking Pelham is therefore very likely to be higher than that of Crabbs Lane.	Stocking Pelham is located more than 350 m away from any plant or equipment associated with the solar farm. The nearest noise sensitive receptors (NSRs) along Crabbs Lane are located approximately 240 m away from any plant or equipment associated with the solar farm. The topography of the area is generally flat with no significant screening from either landscape or buildings. Therefore, the NSRs at Crabbs Lane would be the most exposed.
Figure 2 – Complaint Measurements I have highlighted the 100 Hz and 200 Hz frequency bands in GREEN which are those that are clearly	As mentioned above, the complaints received relate to operational noise from the BESS site and should therefore be addressed separately as a noise nuisance matter. Complaints due to the operation of the BESS site

[2] *RPS 9081_Pelham_Report_rev0_20160915*

[3] *"Crabbs Green Battery Energy Storage – Noise Assessment for Planning, Acoustics Report A1690 R01B" dated 6th April 2022 by iOnAcoustics*

identifiable and audible both at the BESS site and the complainant's property.

should not influence the planning application for the proposed solar farm.

Table 2.3

Cumulative Noise Impact Assessment

NSR D	Background Sound Level, $L_{A90,T}$ [dB]	Residual Sound Level, $L_{Aeq,T}$ [dB]	Rating Sound Level, $L_{Ar,Tr}$ (incl. all penalties) [dB]	Rating Level – Background Sound Level [dB]
Daytime (07:00-23:00)	35	40	34	- 1
Night-time (05:00-07:00)	28	34	33	+ 5

Table 2.4

Ambient Noise Level Change - Cumulative

NSR D	Residual Sound Level, $L_{Aeq,T}$ [dB]	Specific Sound Level, $L_{Aeq,Tr}$ [dB]	Ambient sound Level, $L_{Aeq,T}$ [dB]	Change [dB]
Daytime (07:00-23:00)	40	34	41	+ 1
Night-time (05:00-07:00)	34	34	37	+ 3

2.3 It should be noted that the measurement locations representing Crabbs Green Farm are approximately 100 m – 200 m from the main Stocking Pelham Substation, which is of a considerable size and contains several large transformers which adds to the characteristic "mains hum" often found near substations and transformer stations, though this is typically emitted frequencies between 50 Hz and 100 Hz.

2.4 In conclusion, the noise impact assessment of the proposed solar farm shows that the proposed solar farm itself has no noise impact, adverse or otherwise significant, at the nearest NSRs.

2.5 The 2016 baseline sound levels can be considered representative of the local sound environment prior to the commencement of the BESS site's operation. Adopting these baseline sound levels for the cumulative assessment yields rating sound levels (including penalties) which are 1 dB below the background sound level for daytime and 5 dB above during night-time, as per Table 2.3 above. The ambient noise level change, when using the 2016 residual levels, results in change of 1 dB and 3 dB for daytime and night-time respectively. It is therefore unlikely that the cumulative schemes would result in any adverse noise impact.

2.6 Whilst there may be low frequency noise issue due to the existing BESS site, this should not influence the assessment of the proposed solar farm or the planning application decision. A noise complaint issue due to an existing facility is not a planning issue for new proposed developments.

3 ADDITIONAL COMMENTS

3.1 EHDC further request the following additional information:

- *A full frequency analysis is to be carried out which predicts internal and external noise levels during day and night compared to the existing background noise (excluding the current BESS site) for the nearest residential receptors, in order to assess the impact of low frequency emissions.*

- *Further assessment to be made at NSRs located to the North in Stocking Pelham which have no sufficient physical barriers between them and both sites so are therefore expected to experience higher level of disturbance.*

- *These additional assessments are to inform a scheme of proposed noise mitigation measures for both sites. It must be noted that low frequency noise in the frequency range from about 10 Hz to 200 Hz has been recognised as a special environmental noise problem particularly to sensitive people in their homes – due to its large wavelengths it requires specific mitigation techniques in order to provide effective reduction.*

3.2 Measurements of the existing background sound levels without the BESS site would still include noise from the much larger Stocking Pelham Substation and overhead lines, which would be the dominant noise sources for the prevailing acoustic climate. Internal levels cannot be predicted without a large degree of uncertainty due to the lack of information regarding any the façade construction at the nearest NSRs. A prediction of the external noise levels can be undertaken with a higher degree of confidence and thus is the more favourable option to minimise uncertainty.

3.3 As stated above, the NSRs in Stocking Pelham would not be exposed to higher levels than the NSRs at Crabbs Lane due to the flat topography and lack of obstacles, such as buildings. Trees and shrubs would have minimal screening effects for the NSRs at Crabbs Lane and so these receptors are the most exposed.

3.4 The mitigation of infrasound and low frequency noise is difficult to implement due to the subjectivity associated with individuals' perception and sensitivity to sound at these frequencies. It is acknowledged that low frequency noise can cause significant disturbance to residents and should be taken seriously when complains are made. However, notwithstanding the above, noise complaints from an existing facility are not matters which should influence the decisions for new proposed developments