



East Pye Solar Evening Noise Assessment

Revision 1

October 2026

Planning Inspectorate Reference: EN0110014

Document Reference: EXAM/9.20

The Infrastructure Planning (Examination Procedure) Rules 2010

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1 Introduction

1.1 Background

- 1.1.1 This technical note has been prepared on behalf of East Pye Solar Ltd (the 'Applicant') in relation to an application for a Development Consent Order (DCO) for East Pye Solar (hereafter referred to as the 'Scheme').
- 1.1.2 This report has been produced as part of the Applicant's response to Relevant Representations SNC-044 and SNC-045 (**The Applicant's Response to Relevant Representations Part 1: Host and Neighbouring Local Authorities [PDA-008]** raised by South Norfolk Council (SNC) and complements the information provided in the following documents:
- **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]**
 - **ES Volume 3, Appendix 12.1 – Baseline Sound Survey Report [APP-178]**
 - **ES Volume 3, Appendix 12.2 – Noise Modelling and Calculations [APP-179]**
- 1.1.3 The representations and Applicant's responses within **The Applicant's Response to Relevant Representations Part 1: Host and Neighbouring Local Authorities [PDA-008]** are provided in Table 1.1.

Table 1.1: Representations and Applicant's Responses (SNC-044 and SNC-045)

ID	Representation	Applicant's Response
SNC-044	The Council considers that the Environmental Statement provides insufficient detail to assess potential noise and vibration impacts during both construction and operation. The BESS has not been modelled at the worst-case scenario for assessment and	The assessment presented in the ES provides results, based on indicative plant noise data and locations. Detailed plant specifications are not available at this stage. However, the following commitments are included in the Outline OEMP [APP-197]: • Noise from the BESS will achieve the predicted sound levels in ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]. • The rating level from other elements will not exceed the background sound level at other residential receptors. • Specific sound levels on ProWs will not exceed 55 dBA.

ID	Representation	Applicant's Response
	there is therefore no certainty regarding the adequacy of the proposed mitigation. Daytime hours have been used to assess the low frequency noise from the BESS and substations. However, to assess a true worst-case scenario morning, daytime, evening and nighttime should all be assessed. This is of particular concern give that the BESS is likely to be one of the main sources of noise for this project.	Paragraph 12.8.49 of ES Volume 1, Chapter 12 – Noise and Vibration [APP-048] confirms that the assessment is based on a worst-case scenario, and that all the BESS enclosures and BESS inverters are operating at the worst-case design duty and that in reality, this operation is unlikely to occur. It is therefore likely that sound levels at receptors would be lower than indicated within the assessment. The highest noise levels produced by the Scheme are during the daytime, and these levels have been used to calculate low frequency noise levels to provide a worst-case assessment. The low frequency noise criteria used within the assessment are based on the night-time curve presented within NANR45. The assessment is therefore made based on the low frequency noise levels generated during the daytime, but assessed against night-time criteria. As night-time background sound levels are lower than those during the evening period, this approach is therefore a worst-case and robust approach based on worst-case operating noise levels at any point during a 24-hour period and assessed against the lowest background sound levels. However, to demonstrate impacts during the evening a supplementary assessment has been undertaken and is presented in this Evening Noise Assessment.
SNC-045	Table 12-22 [APP-048] presents noise levels by time of day. However, the Council requests that the data is split further to reflect more refined time periods, in recognition of the lower levels of	The following assessment periods have been used in the operational noise assessment: • Daytime (07:00 – 23:00) • Night-time (23:00 – 04:00) • Early morning (04:00 – 07:00) BS 4142:2014+A1:2019 defines the reference time interval as being 1 h during the day from 07:00 to 23:00 and 15 minutes at night between 23:00 and 07:00. The standard re-iterates this in Section 7.2 which defines these periods as being typical. The early morning period is expected to represent the worst-case impacts at

ID	Representation	Applicant's Response
	background noise levels typically experienced in rural Norfolk during the evening. • Early Morning 04:00-07:00 • Daytime 07:00-19:00 • Evening 19:00-23:00 • Night 23:00-04:00	receptors while all equipment could be operational. Paragraph 12.8.50 of ES Volume 1, Chapter 12 – Noise and Vibration [APP-048] notes that <i>‘for a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.’</i> It also notes that <i>‘where background sound 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’</i>. It is acknowledged that background sound levels in the local area are low, and that the calculated rating levels are also low (below 35 dB $L_{A,T,r}$ in all cases). It is therefore expected that if background sound levels were any lower in the evening than during the early morning period, this would not affect the overall impact of operational noise from the Scheme, or significance of effects. This is because the absolute levels would be more relevant than the margin by which the rating level exceeds the background sound level. However, to demonstrate impacts during the evening a supplementary assessment has been undertaken and is presented in this Evening Noise Assessment.

- 1.1.4 **Volume 1, Chapter 12 – Noise and Vibration [APP-048]** considered a reasonable worst-case scenario based on maximum plant sound power levels, the lowest measured background sound levels and the periods when residential receptors are generally considered most sensitive to noise effects. The Evening Noise Assessment presented here has been undertaken in response to comments from SNC to provide further information regarding potential effects during the evening period (19:00 to 23:00 hours), when residents may make use of outdoor amenity areas. This assessment supplements **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]** and does not supersede or replace the conclusions of the ES.

1.2 Operational Noise

- 1.2.1 During consultation with South Norfolk Council on 11 November 2025, it was raised that effects within private outdoor amenity spaces may be higher than at residences, particularly during the evening period, when residents may wish to use their outdoor space for amenity. It was raised that assessment within 5 m of the façade would be suitable to assess impact within private outdoor amenity spaces.
- 1.2.2 **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]** assessed the following operational periods:
- Early morning (04:00 – 07:00)
 - Daytime (07:00 – 23:00)
 - Night-time (23:00 – 07:00)
- 1.2.3 Daytime and night-time operational periods were assessed, as described in BS 4142:2014+A1:2019. The early morning operational period was assessed using the same methodology as the night-time period to take into account worst-case summer sunlight-hour operation, when solar elements may be active during the normally designated night-time period.
- 1.2.4 This report provides a supplementary assessment, in response to SNC's representation, and clarification based on existing survey data, with particular consideration given to:
- Background sound levels and assessment results for the evening period (19:00 – 23:00).
 - Consideration of sound levels in residential gardens.
- 1.2.5 The following conclusions of **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]** remain unchanged:
- There are no changes to previously reported significant effects.
 - There are no changes to embedded mitigation measures.
- 1.2.6 While there are differences between the calculated exceedance of the rating levels and selected background sound levels at receptors during the evening period, the differences are minor and have no effect on the outcome of the assessment.

Assessment Scenario

- 1.2.7 **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]** considered a reasonable worst-case scenario through the adoption of:
- Maximum operational sound power levels for the Proposed Development;

- Conservative noise propagation assumptions;
 - Background sound levels representative of the lowest measured periods (i.e. the night-time period);
 - Assessment of the periods generally regarded as most sensitive to operational noise effects (i.e. early morning period).
- 1.2.8 The evening assessment presented herein considers an alternative operational scenario associated with outdoor amenity use during the evening period. Whilst some BESS systems may operate at higher duty during the evening than assumed for night-time scenarios, background sound levels are generally higher during the evening period. Accordingly, the assessment provides additional context regarding evening amenity use and should not be interpreted as superseding the reasonable worst-case assessment presented within **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]**.

1.3 Construction Noise and Vibration

- 1.3.1 The core construction working hours are:
- Monday to Friday 07:00 to 18:00 (daylight hours permitting);
 - Saturday from 08:00 to 13:30 (daylight hours permitting); and
 - No Sunday or Bank Holiday working unless crucial to construction (for example, for HDD which must be continuous activity) or in an emergency.
- 1.3.2 Some activities may be required outside of these times such as the delivery of abnormal loads, concrete pours for foundations, night working for cable construction works in public highways and/or HDD activities.
- 1.3.3 Based the construction working hours, construction work during the evening is not anticipated unless required for the exceptions noted above. Therefore no further assessment required to assess construction noise and vibration impacts during the evening.

1.4 Environmental Sound Survey Results

- 1.4.1 Background sound levels during the evening period have been obtained from data collected during the environmental sound survey undertaken for **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]**. The data has been processed using the same methodology as outlined in **Volume 3, Appendix 12.1 – Baseline Sound Survey Report [APP-178]**. Further details, including measurement locations and meteorological exclusions, are identified in **Volume 3, Appendix 12.1 – Baseline Sound Survey Report [APP-178]**.

- 1.4.2 **Table 1.2 to Table 1.11** of this Evening Noise Assessment provide the range of measured background sound levels on each evening of measurement during the survey, at each measurement location (identified in **Volume 3, Appendix 12.1 – Baseline Sound Survey Report, Figure 11 [APP-178]**).

Parcel Group 1

Table 1.2: Summary of Sound Survey Results – Parcel Group 1, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP41	Wednesday 20/11/2024	32-40
	Thursday 21/11/2024	34-38
	Friday 22/11/2024	28-34
	Saturday 23/11/2024	-
	Sunday 24/11/2024	48-53
MP42	Wednesday 20/11/2024	30-36
	Thursday 21/11/2024	33-35
	Friday 22/11/2024	28-33
	Saturday 23/11/2024	-
	Sunday 24/11/2024	44-49
MP43	Wednesday 20/11/2024	31-40
	Thursday 21/11/2024	34-39
	Friday 22/11/2024	27-30
	Saturday 23/11/2024	-
	Sunday 24/11/2024	46-51
MP44	Wednesday 20/11/2024	27-35
	Thursday 21/11/2024	29-32
	Friday 22/11/2024	25-29
	Saturday 23/11/2024	-
	Sunday 24/11/2024	44-54

Parcel Group 2

Table 1.3: Summary of Sound Survey Results – Parcel Group 2, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP45	Tuesday 19/11/2024	33-37
	Wednesday 20/11/2024	30-37
	Thursday 21/11/2024	32-35
	Friday 22/11/2024	35-37
	Saturday 23/11/2024	-
	Sunday 24/11/2024	46-50
MP46	Tuesday 19/11/2024	39-47
	Wednesday 20/11/2024	32-44
	Thursday 21/11/2024	36-43
	Friday 22/11/2024	39-45
	Saturday 23/11/2024	-
	Sunday 24/11/2024	50-54
MP47	Tuesday 19/11/2024	33-39
	Wednesday 20/11/2024	28-36
	Thursday 21/11/2024	31-35
	Friday 22/11/2024	34-38
	Saturday 23/11/2024	-
	Sunday 24/11/2024	49-55
MP48	Wednesday 20/11/2024	32-41
	Thursday 21/11/2024	35-39
	Friday 22/11/2024	34-41
	Saturday 23/11/2024	-
	Sunday 24/11/2024	44-47
MP49	Wednesday 20/11/2024	28-37
	Thursday 21/11/2024	31-34
	Friday 22/11/2024	30-34
	Saturday 23/11/2024	-
	Sunday 24/11/2024	45-48

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP50	Tuesday 21/01/2025	35-50
	Wednesday 22/01/2025	33-42
	Thursday 23/01/2025	40-52
	Friday 24/01/2025	35-50
	Saturday 25/01/2025	38-50
	Sunday 26/01/2025	38-53
	Monday 27/01/2025	47-53

Parcel Group 3

Table 1.4: Summary of Sound Survey Results – Parcel Group 3, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP38	Tuesday 26/11/2024	20-24
	Wednesday 27/11/2024	25-30
	Thursday 28/11/2024	22-24
	Friday 29/11/2024	26-31
	Saturday 30/11/2024	24-27
	Sunday 01/12/2024	25-29
MP39	Tuesday 26/11/2024	17-23
	Wednesday 27/11/2024	27-32
	Thursday 28/11/2024	17-20
	Friday 29/11/2024	27-34
	Saturday 30/11/2024	24-31
	Sunday 01/12/2024	28-39
MP40	Tuesday 26/11/2024	20-22
	Wednesday 27/11/2024	25-31
	Thursday 28/11/2024	19-23
	Friday 29/11/2024	27-36
	Saturday 30/11/2024	23-27
	Sunday 01/12/2024	24-28

Parcel Group 4

Table 1.5: Summary of Sound Survey Results – Parcel Group 4, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP25	Tuesday 26/11/2024	43-53
	Wednesday 27/11/2024	37-50
	Thursday 28/11/2024	39-50
	Friday 29/11/2024	43-49
	Saturday 30/11/2024	40-47
	Sunday 01/12/2024	35-47
MP26	Tuesday 26/11/2024	40-46
	Wednesday 27/11/2024	30-36
	Thursday 28/11/2024	38-47
	Friday 29/11/2024	38-45
	Saturday 30/11/2024	37-41
	Sunday 01/12/2024	32-40
MP27	Tuesday 26/11/2024	37-41
	Wednesday 27/11/2024	30-33
	Thursday 28/11/2024	37-46
	Friday 29/11/2024	37-43
	Saturday 30/11/2024	35-39
	Sunday 01/12/2024	33-39
MP28	Tuesday 26/11/2024	48-55
	Wednesday 27/11/2024	38-45
	Thursday 28/11/2024	43-55
	Friday 29/11/2024	43-54
	Saturday 30/11/2024	42-50
	Sunday 01/12/2024	35-48
MP29	Tuesday 26/11/2024	42-50
	Wednesday 27/11/2024	38-47
	Thursday 28/11/2024	37-48
	Friday 29/11/2024	41-46

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
	Saturday 30/11/2024	38-45
	Sunday 01/12/2024	35-46
MP30	Tuesday 21/01/2025	23-30
	Wednesday 22/01/2025	32-42
	Thursday 23/01/2025	36-45
	Friday 24/01/2025	33-42
	Saturday 25/01/2025	33-40
	Sunday 26/01/2025	33-40
	Monday 27/01/2025	37-43
MP51	Tuesday 21/01/2025	22-30
	Wednesday 22/01/2025	28-42
	Thursday 23/01/2025	34-44
	Friday 24/01/2025	32-42
	Saturday 25/01/2025	32-41
	Sunday 26/01/2025	31-40
	Monday 27/01/2025	37-42

Parcel Group 5

Table 1.6: Summary of Sound Survey Results – Parcel Group 5, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP31	Tuesday 03/12/2024	23-37
	Wednesday 04/12/2024	28-34
	Thursday 05/12/2024	-
	Friday 06/12/2024	28-42
	Saturday 07/12/2024	-
	Sunday 08/12/2024	33-40
MP32	Tuesday 03/12/2024	24-34
	Wednesday 04/12/2024	29-34
	Thursday 05/12/2024	-
	Friday 06/12/2024	29-42

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP33	Saturday 07/12/2024	-
	Sunday 08/12/2024	35-40
	Tuesday 03/12/2024	27-41
	Wednesday 04/12/2024	32-38
	Thursday 05/12/2024	-
	Friday 06/12/2024	34-46
	Saturday 07/12/2024	-
	Sunday 08/12/2024	33-40
MP34	Tuesday 03/12/2024	24-39
	Wednesday 04/12/2024	32-38
	Thursday 05/12/2024	-
	Friday 06/12/2024	33-49
	Saturday 07/12/2024	-
	Sunday 08/12/2024	33-38

Parcel Group 6

Table 1.7: Summary of Sound Survey Results – Parcel Group 6, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP35	Tuesday 03/12/2024	21-58
	Wednesday 04/12/2024	28-48
	Thursday 05/12/2024	-
	Friday 06/12/2024	30-42
	Saturday 07/12/2024	-
	Sunday 08/12/2024	29-35
MP36	Tuesday 03/12/2024	21-38
	Wednesday 04/12/2024	27-37
	Thursday 05/12/2024	-
	Friday 06/12/2024	29-42
	Saturday 07/12/2024	-
	Sunday 08/12/2024	35-43

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP37	Tuesday 03/12/2024	23-38
	Wednesday 04/12/2024	29-38
	Thursday 05/12/2024	-
	Friday 06/12/2024	28-45
	Saturday 07/12/2024	-
	Sunday 08/12/2024	35-43

Parcel Group 7

Table 1.8: Summary of Sound Survey Results – Parcel Group 7, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP14	Tuesday 21/01/2025	18-23
	Wednesday 22/01/2025	20-27
	Thursday 23/01/2025	27-38
	Friday 24/01/2025	23-28
	Saturday 25/01/2025	17-23
	Sunday 26/01/2025	31-47
	Monday 27/01/2025	35-42
MP15	Tuesday 21/01/2025	19-22
	Wednesday 22/01/2025	23-30
	Thursday 23/01/2025	29-38
	Friday 24/01/2025	23-30
	Saturday 25/01/2025	18-22
	Sunday 26/01/2025	32-44
	Monday 27/01/2025	38-44
MP16	Tuesday 21/01/2025	18-23
	Wednesday 22/01/2025	18-26
	Thursday 23/01/2025	29-37
	Friday 24/01/2025	26-31
	Saturday 25/01/2025	20-25
	Sunday 26/01/2025	31-45

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP17	Monday 27/01/2025	39-44
	Tuesday 21/01/2025	20-23
	Wednesday 22/01/2025	20-30
	Thursday 23/01/2025	31-42
	Friday 24/01/2025	27-34
	Saturday 25/01/2025	23-27
	Sunday 26/01/2025	28-38
	Monday 27/01/2025	35-39
MP18	Tuesday 10/12/2024	21-32
	Wednesday 11/12/2024	21-25
	Thursday 12/12/2024	18-29
	Friday 13/12/2024	24-30
	Saturday 14/12/2024	32-36
	Sunday 15/12/2024	30-42
MP19	Tuesday 10/12/2024	22-38
	Wednesday 11/12/2024	20-26
	Thursday 12/12/2024	18-29
	Friday 13/12/2024	24-29
	Saturday 14/12/2024	31-34
	Sunday 15/12/2024	28-37
MP20	Tuesday 10/12/2024	23-32
	Wednesday 11/12/2024	22-26
	Thursday 12/12/2024	24-31
	Friday 13/12/2024	27-33
	Saturday 14/12/2024	33-37
	Sunday 15/12/2024	31-41
MP21	Tuesday 10/12/2024	23-32
	Wednesday 11/12/2024	24-28
	Thursday 12/12/2024	20-27
	Friday 13/12/2024	28-30
	Saturday 14/12/2024	34-39
	Sunday 15/12/2024	32-40

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP22	Tuesday 10/12/2024	29-38
	Wednesday 11/12/2024	29-34
	Thursday 12/12/2024	23-32
	Friday 13/12/2024	34-38
	Saturday 14/12/2024	36-42
	Sunday 15/12/2024	37-44
MP23	Tuesday 10/12/2024	33-44
	Wednesday 11/12/2024	35-43
	Thursday 12/12/2024	29-41
	Friday 13/12/2024	36-41
	Saturday 14/12/2024	39-45
	Sunday 15/12/2024	36-46
MP24	Tuesday 10/12/2024	29-40
	Wednesday 11/12/2024	30-38
	Thursday 12/12/2024	22-33
	Friday 13/12/2024	34-39
	Saturday 14/12/2024	36-44
	Sunday 15/12/2024	33-43

Parcel Group 8

Table 1.9: Summary of Sound Survey Results – Parcel Group 8, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP10	Tuesday 21/01/2025	18-21
	Wednesday 22/01/2025	18-29
	Thursday 23/01/2025	29-35
	Friday 24/01/2025	23-29
	Saturday 25/01/2025	20-23
	Sunday 26/01/2025	28-39
	Monday 27/01/2025	35-39
MP11	Tuesday 21/01/2025	18-22

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
	Wednesday 22/01/2025	18-29
	Thursday 23/01/2025	27-35
	Friday 24/01/2025	24-29
	Saturday 25/01/2025	17-22
	Sunday 26/01/2025	30-49
	Monday 27/01/2025	39-47
MP12	Monday 17/03/2025	19-26
	Tuesday 18/03/2025	19-29
	Wednesday 19/03/2025	20-29
	Thursday 20/03/2025	19-30
	Friday 21/03/2025	21-25
	Saturday 22/03/2025	18-23
	Sunday 23/03/2025	22-27
MP13	Tuesday 21/01/2025	20-21
	Wednesday 22/01/2025	20-28
	Thursday 23/01/2025	29-37
	Friday 24/01/2025	23-29
	Saturday 25/01/2025	20-24
	Sunday 26/01/2025	34-38
	Monday 27/01/2025	42-43

Parcel Group 9

**Table 1.10: Summary of Sound Survey Results – Parcel Group 9,
Evening Period (19:00 – 23:00)**

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP6	Tuesday 17/12/2024	36-42
	Wednesday 18/12/2024	34-44
	Thursday 19/12/2024	27-35
	Friday 20/12/2024	27-33
	Saturday 21/12/2024	30-37
	Sunday 22/12/2024	40-45

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
	Monday 23/12/2024	25-29
MP7	Tuesday 17/12/2024	36-43
	Wednesday 18/12/2024	35-46
	Thursday 19/12/2024	29-35
	Friday 20/12/2024	28-33
	Saturday 21/12/2024	32-39
	Sunday 22/12/2024	38-43
	Monday 23/12/2024	27-29
MP8	Tuesday 17/12/2024	33-38
	Wednesday 18/12/2024	31-40
	Thursday 19/12/2024	27-36
	Friday 20/12/2024	26-32
	Saturday 21/12/2024	29-38
	Sunday 22/12/2024	40-46
	Monday 23/12/2024	25-29
MP9	Tuesday 21/01/2025	20-28
	Wednesday 22/01/2025	22-32
	Thursday 23/01/2025	31-41
	Friday 24/01/2025	25-36
	Saturday 25/01/2025	24-31
	Sunday 26/01/2025	30-41
	Monday 27/01/2025	38-44

Parcel Group 10

Table 1.11: Summary of Sound Survey Results – Parcel Group 10, Evening Period (19:00 – 23:00)

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
MP1	Tuesday 17/12/2024	33-39
	Wednesday 18/12/2024	32-44
	Thursday 19/12/2024	29-36
	Friday 20/12/2024	29-36

Location	Date	Measured $L_{A90,15\text{minutes}}$ Range, dB
	Saturday 21/12/2024	34-42
	Sunday 22/12/2024	42-47
MP2	Tuesday 17/12/2024	32-38
	Wednesday 18/12/2024	31-40
	Thursday 19/12/2024	28-35
	Friday 20/12/2024	29-34
	Saturday 21/12/2024	32-38
	Sunday 22/12/2024	41-48
MP3	Tuesday 17/12/2024	43-46
	Wednesday 18/12/2024	38-48
	Thursday 19/12/2024	30-39
	Friday 20/12/2024	31-38
	Saturday 21/12/2024	40-44
	Sunday 22/12/2024	45-50
MP4	Tuesday 17/12/2024	39-46
	Wednesday 18/12/2024	40-49
	Thursday 19/12/2024	32-46
	Friday 20/12/2024	32-45
	Saturday 21/12/2024	40-49
	Sunday 22/12/2024	45-50
MP5	Tuesday 17/12/2024	37-42
	Wednesday 18/12/2024	38-44
	Thursday 19/12/2024	32-46
	Friday 20/12/2024	29-41
	Saturday 21/12/2024	33-40
	Sunday 22/12/2024	45-50

1.5 Selected Background Sound Levels

- 1.5.1 Histograms of the measured evening period sound levels are presented in **Appendix A** of this document.
- 1.5.2 The daily evening-period ranges have been reviewed alongside the $L_{A90,15\text{minutes}}$ histograms in **Appendix A**. The selected background sound levels in **Table 1.12** represent values considered typical of the evening period at each monitoring location, excluding periods affected by unsuitable meteorological conditions or other invalid data.

Table 1.12: Selected Typical Background Sound Levels – Evening (19:00 – 23:00)

Location	Typical $L_{A90,15\text{minutes}}$
Parcel Group 1	
MP41	34
MP42	31
MP43	31
MP44	28
Parcel Group 2	
MP45	34
MP46	39
MP47	33
MP48	35
MP49	31
MP50	39
Parcel Group 3	
MP38	23
MP39	19
MP40	21
Parcel Group 4	
MP25	43
MP26	34
MP27	34
MP28	42
MP29	41
MP30	33
MP51	34

Location	Typical $L_{A90,15\text{minutes}}$
Parcel Group 5	
MP31	28
MP32	29
MP33	33
MP34	33
Parcel Group 6	
MP35	30
MP36	28
MP37	29
Parcel Group 7	
MP14	21
MP15	22
MP16	21
MP17	24
MP18	24
MP19	23
MP20	24
MP21	25
MP22	31
MP23	36
MP24	33
Parcel Group 8	
MP10	21
MP11	20
MP12	21
MP13	22
Parcel Group 9	
MP6	29
MP7	30
MP8	28
MP9	25
Parcel Group 10	
MP1	32
MP2	31
MP3	34
MP4	39

Location	Typical $L_{A90,15\text{minutes}}$
MP5	36

1.6 Operational Noise – Project Substations, National Grid Substation, BESS, Solar PV Arrays

- 1.6.1 Operational façade-incident specific sound levels have been calculated at high sensitivity receptors for the evening period. These levels are calculated at a height above ground of 1.5 m and include additional mitigation outlined in **ES: Chapter 12 – Noise and Vibration – 12.9 Additional Mitigation Measures [APP-048]**. The resultant sound levels include contribution from:
- BESS elements.
 - National Grid and Project Substations.
 - Solar inverters, with the additional mitigation identified in **Volume 1, Chapter 12 – Noise and Vibration [APP-048]**.
- 1.6.2 Receptors retain the same numbering system as in **Volume 1, Chapter 12 – Noise and Vibration [APP-048]**. Locations of receptors are detailed in **Volume 2, Figure 12.2 Noise and Vibration Sensitive Receptors [APP-099]**.
- 1.6.3 Rating levels have been determined from these specific levels. No rating corrections have been applied, as per **ES: Appendix 12.2 – Noise Modelling and Calculations – 3.8 [APP-179] BS4142 Acoustic Feature Rating Corrections**.
- 1.6.4 **Table 1.13** details the rating levels at nearby high sensitivity noise sensitive receptors. A preliminary summary of the operational noise assessment for high sensitivity receptors is presented in **Table 1.14** provides a summary of the outcome during the evening against the preliminary effect levels.
- 1.6.5 Table 1.14.

Table 1.13: Operational Noise Assessment Results – Evening Period (19:00 – 23:00)

Receptor	Calculated Rating Level <i>L_{Ar,1hour}</i> (dB)	Background Sound Level <i>L_{A90,15minutes}</i> (dB)	Excess of Rating Level over Background Level (dB)	Magnitude of Impact	Effect Level	Significance of Effect
Site 1						
NSR1A	27	28	-1	Negligible	Below the NOAEL	Negligible
NSR1B	25	28	-3	Negligible	Below the NOAEL	Negligible
NSR2A	32	31	1	Low	Between NOAEL and LOAEL	Minor Adverse
NSR2B	31	31	0	Negligible	Below the NOAEL	Negligible
NSR3A	33	34	-1	Negligible	Below the NOAEL	Negligible
NSR3B	35	34	1	Low	Between NOAEL and LOAEL	Minor Adverse
NSR4	29	31	-2	Negligible	Below the NOAEL	Negligible
NSR5A	31	31	0	Negligible	Below the NOAEL	Negligible
Site 2						
NSR7	29	34	-5	Negligible	Below the NOAEL	Negligible
NSR8	29	39	-10	Negligible	Below the NOAEL	Negligible
NSR9	28	31	-3	Negligible	Below the NOAEL	Negligible
NSR10	26	33	-7	Negligible	Below the NOAEL	Negligible
Site 3						
NSR13	24	23	1	Low	Between NOAEL and LOAEL	Minor Adverse

Receptor	Calculated Rating Level $L_{Ar,1hour}$ (dB)	Background Sound Level $L_{A90,15minutes}$ (dB)	Excess of Rating Level over Background Level (dB)	Magnitude of Impact	Effect Level	Significance of Effect
NSR14	23	19	4	Low	Between NOAEL and LOAEL	Minor Adverse
NSR15	14	19	-5	Negligible	Below the NOAEL	Negligible
NSR16	16	23	-7	Negligible	Below the NOAEL	Negligible
NSR17	23	23	0	Negligible	Below the NOAEL	Negligible
Site 4						
NSR20	24	41	-17	Negligible	Below the NOAEL	Negligible
NSR21	25	33	-8	Negligible	Below the NOAEL	Negligible
NSR22	30	42	-12	Negligible	Below the NOAEL	Negligible
NSR23	25	34	-9	Negligible	Below the NOAEL	Negligible
NSR24	21	34	-13	Negligible	Below the NOAEL	Negligible
NSR25	24	34	-10	Negligible	Below the NOAEL	Negligible
Site 5						
NSR28	29	33	-4	Negligible	Below the NOAEL	Negligible
NSR31	28	28	0	Negligible	Below the NOAEL	Negligible
NSR32	26	28	-2	Negligible	Below the NOAEL	Negligible
NSR33	25	28	-3	Negligible	Below the NOAEL	Negligible
NSR35	24	33	-9	Negligible	Below the NOAEL	Negligible
Site 7						
NSR43	20	24	-4	Negligible	Below the NOAEL	Negligible
NSR44	21	24	-3	Negligible	Below the NOAEL	Negligible

Receptor	Calculated Rating Level $L_{Ar,1hour}$ (dB)	Background Sound Level $L_{A90,15minutes}$ (dB)	Excess of Rating Level over Background Level (dB)	Magnitude of Impact	Effect Level	Significance of Effect
NSR45	18	24	-6	Negligible	Below the NOAEL	Negligible
NSR46	17	22	-5	Negligible	Below the NOAEL	Negligible
NSR47	20	21	-1	Negligible	Below the NOAEL	Negligible
NSR48	20	21	-1	Negligible	Below the NOAEL	Negligible
NSR49	20	23	-3	Negligible	Below the NOAEL	Negligible
NSR51	21	25	-4	Negligible	Below the NOAEL	Negligible
NSR52	20	25	-5	Negligible	Below the NOAEL	Negligible
NSR53	19	31	-12	Negligible	Below the NOAEL	Negligible
NSR54	18	36	-18	Negligible	Below the NOAEL	Negligible
NSR55	21	36	-15	Negligible	Below the NOAEL	Negligible
NSR56	20	33	-13	Negligible	Below the NOAEL	Negligible
Site 8						
NSR58	15	21	-6	Negligible	Below the NOAEL	Negligible
NSR59	21	20	1	Low	Between NOAEL and LOAEL	Minor Adverse
NSR60	22	22	0	Negligible	Below the NOAEL	Negligible
NSR61	18	21	-3	Negligible	Below the NOAEL	Negligible
NSR62	19	21	-2	Negligible	Below the NOAEL	Negligible
Site 9						
NSR64	24	29	-5	Negligible	Below the NOAEL	Negligible
NSR65	22	25	-3	Negligible	Below the NOAEL	Negligible

Receptor	Calculated Rating Level $L_{Ar,1hour}$ (dB)	Background Sound Level $L_{A90,15minutes}$ (dB)	Excess of Rating Level over Background Level (dB)	Magnitude of Impact	Effect Level	Significance of Effect
NSR66	22	28	-6	Negligible	Below the NOAEL	Negligible
NSR67	26	28	-2	Negligible	Below the NOAEL	Negligible
NSR68	12	30	-18	Negligible	Below the NOAEL	Negligible
NSR69	17	30	-13	Negligible	Below the NOAEL	Negligible
Site 10						
NSR71	26	31	-5	Negligible	Below the NOAEL	Negligible
NSR72	23	32	-9	Negligible	Below the NOAEL	Negligible
NSR73	25	32	-7	Negligible	Below the NOAEL	Negligible
NSR75	20	34	-14	Negligible	Below the NOAEL	Negligible
NSR76	23	36	-13	Negligible	Below the NOAEL	Negligible
NSR77	27	36	-9	Negligible	Below the NOAEL	Negligible
NSR78	24	39	-15	Negligible	Below the NOAEL	Negligible

- 1.6.6 **Table 1.14** provides a summary of the outcome during the evening against the preliminary effect levels.

Table 1.14: Preliminary Operational Noise Assessment for High Sensitivity Receptors

Effect Level	Number of Receptors Evening (19:00 to 23:00)
Below NOAEL	57
Between NOAEL and LOAEL	5
Between LOAEL and SOAEL	0
Above SOAEL	0

- 1.6.7 The above table categorises the outcomes of the assessment with the preliminary numerical threshold presented in Table 12-11 of **Volume 1, Chapter 12 – Noise and Vibration [APP-048]**. However, it is necessary to consider the context of the assessment to determine the overall significance of effects.

Absolute Sound Levels

- 1.6.8 In relation to absolute sound levels BS 4142:2014+A1:2019 states:

‘Where background sound 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.’

- 1.6.9 The ANC BS 4142:2014+A1:2019 Technical Note published in 2020 notes that:

‘BS 4142 does not define ‘low’ in the context of background sound levels nor rating levels. The note to the Scope of the 1997 version of BS 4142 defined very low background sound levels as being less than about 30 dB L_{A90} , and low rating levels as being less than about 35 dB $L_{A,r,Tr}$. The WG suggest that similar values would not be unreasonable in the context of BS 4142, but that the assessor should make a judgement and justify it where appropriate.’

- 1.6.10 Background sound levels in the order of 30 dB $L_{A90,15minutes}$ or below are characteristic of a quiet rural environment.

- 1.6.11 For further context regarding low noise levels, the World Health Organisation (WHO) ‘Night noise guidelines for Europe’ 2009 states:

‘Below the level of 30 dB $L_{night,outside}$, no effects on sleep are observed except for a slight increase in the frequency of body movements during sleep due to night noise. There is no sufficient evidence that the biological effects observed at the level below 40 dB $L_{night,outside}$ are harmful to health’

- 1.6.12 Further to this, assessment criteria in the Department for Energy Security and Net Zero 'Assessment and Rating of Wind Turbine Noise' 2026 is based on the greater of '5 dB above the typical background noise level' or '35 – 40 dB for day periods'. This indicates that 30 dBA is considered low according to this guidance for assessing a similar source of renewable energy-generating industrial noise.
- 1.6.13 Consistent with BS 4142:2014+A1:2019 and the ANC Technical Note, the assessment has therefore considered both the difference between the rating and background sound levels and the absolute rating level. In circumstances where both the background sound level and rating level are low, the magnitude of impact are considered to be less than implied by the numerical exceedance alone.
- 1.6.14 For the purposes of this assessment, background sound levels of 30 dB $L_{A90,15\text{minutes}}$ and rating levels of 35 dB $L_{Ar,Tr}$ are considered to be low. Where background and/or rating levels are low, the magnitude of impact and overall effect are expected to be lower than reported, due to the context.
- 1.6.15 **Table 1.15** identifies the receptors where the rating level exceeds the background sound level during the evening period.

Table 1.15: Receptors Where Rating Level Exceeds Background Sound Level During the Evening Period

Receptor	Calculated Rating Level $L_{Ar,1\text{hour}}$ (dB)	Background Sound Level $L_{A90,15\text{minutes}}$ (dB)	Commentary
NSR2A	32	31	The rating level is considered to be low, and may reduce the impact and effect during the evening period. The impact and effect during the evening is therefore likely to be lower than the Minor Adverse effect reported in Table 1.13.
NSR3B	35	34	The rating level is considered to be low, and may reduce the impact and effect during the evening period. The dominant sound source at NSR3B is due to the BESS. BESS enclosures can only be mitigated at source by controlling fan speed duty or adding manufacturer provided attenuators. All reasonable

Receptor	Calculated Rating Level $L_{Ar,1\text{hour}}$ (dB)	Background Sound Level $L_{A90,15\text{minutes}}$ (dB)	Commentary
			mitigation options have been considered at this stage of the design including acoustic screening around the BESS area.
NSR13	24	23	Both the background sound level and rating level are low. The impact and effect during the evening is therefore likely to be lower than the Minor Adverse effect reported in Table 1.13.
NSR14	23	19	Both the background sound level and rating level are low. The impact and effect during the evening is therefore likely to be lower than the Minor Adverse effect reported in Table 1.13.
NSR59	21	20	Both the background sound level and rating level are low. The impact and effect during the evening is therefore likely to be lower than the Minor Adverse effect reported in Table 1.13.

Rating Levels in External Amenity Spaces

- 1.6.16 The assessment in **Volume 1, Chapter 12 – Noise and Vibration [APP-048]** considers façade incident sound levels at the worst-case façade of each receptor. The assessment does not consider whether there is private external amenity space on the same façade, or whether there are noise sensitive windows on the selected façade. This assessment methodology is considered appropriate as a typical worst-case for assessment, as internal impacts during the night-time and early morning are the leading cause of noise effects in the overall assessment
- 1.6.17 As the worst-case façade incident level was calculated regardless of the location of private outdoor amenity space, the specific sound levels in these two locations may not be related. For example, some amenity spaces may be fully or partially screened from site by the receptor building, resulting in a lower level than incident on the worst-case façade.

- 1.6.18 However, based on South Norfolk Council representations, the level within 5 m from dwellings in external amenity spaces is requested.
- 1.6.19 Based on a worst-case scenario where the external amenity space lies along the worst-case façade and screening from garden fences has no effect, the rating level increases by approximately +1 dB at a distance of 5 m from the façade.
- 1.6.20 This worst case +1 dB correction has been considered at all receptors, with those that exceed the background sound level subject to more detailed review in **Table 1.16**. The calculated rating levels presented in **Table 1.16** are presented without the +1 dB correction applied.
- 1.6.21 Where the rating level and background sound level are low, the overall impact has been modified to be negligible, despite the rating level exceeding the background sound level. This is based on guidance provided within BS 4142:2014+A1:2019.

Table 1.16: Receptors Where Rating Level Exceeds Background Sound Level During the Evening Period

Receptor	Calculated Rating Level $L_{Ar,1hour}$ (dB)	Background Sound Level $L_{A90,15minutes}$ (dB)	Commentary
NSR2A	32	31	Rating levels in garden areas are not expected to be higher than those reported in Table 1.13, as the garden is not in-front of the worst-case façade. The rating level and background sound level are still noted to be low. The overall impact is therefore considered to be negligible .
NSR2B	31	31	Rating levels in garden areas may increase by 1 dB over those reported in Table 1.13, as the garden area is located in front of the worst-affected façade. The rating level and background sound level are still noted to be low. The overall impact is therefore considered to be negligible .
NSR3B	35	34	Rating levels in garden areas may increase by 1 dB over those reported in Table 1.13, as the

Receptor	Calculated Rating Level $L_{Ar,1hour}$ (dB)	Background Sound Level $L_{A90,15minutes}$ (dB)	Commentary
			garden area is located in front of the worst-affected façade. The dominant sound source at NSR3B is due to the BESS. Embedded mitigation measures are described in ES Volume 1, Chapter 12 – Noise and Vibration [APP-048] – Section 12.7 Embedded Mitigation. BESS enclosures can only be mitigated at source by controlling fan speed duty or adding manufacturer provided attenuators. All reasonable mitigation options have been considered at this stage of the design. The overall impact is therefore considered to be low.
NSR5A	31	31	Rating levels in garden areas may increase by 1 dB over those reported in Table 1.13, as the garden area is located in front of the worst-affected façade. The rating level is still noted to be low. Additional mitigation has not been applied to the nearest modelled central inverters, which could reduce the rating level to be in-line with or below the background sound level. This would be implemented as committed to within the Outline OEMP [APP-196]. The overall impact is therefore considered to be low.
NSR13	24	23	Rating levels in garden areas may increase by 1 dB over those reported in Table 1.13, as the garden area is located in front of the worst-affected façade.

Receptor	Calculated Rating Level $L_{Ar,1\text{hour}}$ (dB)	Background Sound Level $L_{A90,15\text{minutes}}$ (dB)	Commentary
			The rating level and background sound level at still noted to be low. The overall impact is therefore considered to be negligible.
NSR14	23	19	Rating levels in garden areas are not expected to be higher than those reported in Table 1.13, as the garden is not in-front of the worst-case façade. The rating level and background sound level at still noted to be low. The overall impact is therefore considered to be negligible.
NSR17	23	23	Rating levels in garden areas may increase by 1 dB over those reported in Table 1.13, as the garden area is located in front of the worst-affected façade. The rating level and background sound level at still noted to be low. The overall impact is therefore considered to be negligible.
NSR31	28	28	Rating levels in garden areas are not expected to be higher than those reported in Table 1.13, as the garden is not in-front of the worst-case façade. The rating level and background sound level at still noted to be low. The overall impact is therefore considered to be negligible.
NSR59	21	20	Rating levels in garden areas are not expected to be higher than those reported in Table 1.13, as the garden is not in-front of the worst-case façade.

Receptor	Calculated Rating Level $L_{Ar,1hour}$ (dB)	Background Sound Level $L_{A90,15minutes}$ (dB)	Commentary
			The rating level and background sound level at still noted to be low. The overall impact is therefore considered to be negligible .
NSR60	22	22	Rating levels in garden areas are not expected to be higher than those reported in Table 1.13, as the garden is not in-front of the worst-case façade. The rating level and background sound level at still noted to be low. The overall impact is therefore considered to be negligible .

Other Contextual Factors

- 1.6.22 When determining the overall significance of effect, it is necessary to consider the context of the assessment.
- 1.6.23 The assessment of the evening period makes the following assumptions:
- Residents will be outside in their garden during the evening, between 19:00 and 23:00 hours. This is a worst-case assumption, as residents may not choose to be outside every evening.
 - The equipment will be operating at full design capacity. This will not always be the case, as noise emissions produced by the BESS and central inverters are strongly associated with the ambient temperature in combination with the operation of the equipment. The following reasons outline why this is the worst-case:
 - Ambient temperatures will be lower outside of the peak summer months, and therefore during the majority of the time it is less likely that the BESS would be required to operate at maximum design duty during the evening.
 - The BESS cooling system may not operate during the evening, as this will be dependent on grid demand, charge/discharge cycles and thermal management requirements.
 - The assessment assumes that all BESS systems are operating simultaneously. In practice, not all batteries will be charging/discharging

at the same time and therefore overall sound levels may be lower than assumed.

- Noise propagation calculations include assumptions that maximise sound propagation between the Proposed Development and nearby receptors. Such conditions are not expected to occur continuously and therefore the predicted sound levels are likely to overstate average operational noise exposure.
- 1.6.24 The assessment relates to the evening period (19:00-23:00 hours) when residents are generally awake and undertaking normal domestic activities. The assessment does not relate to potential sleep disturbance effects during the core night-time period when sensitivity to noise is typically greatest.
- 1.6.25 The assessment should be considered within the context of the conservative assumptions adopted. The evening assessment assumes residents are present within outdoor amenity areas, that all BESS systems are capable of operating simultaneously and that noise propagation occurs under conditions favourable to sound transmission. Accordingly, the assessment is considered to represent a conservative indication of evening operational noise effects.

1.7 Summary

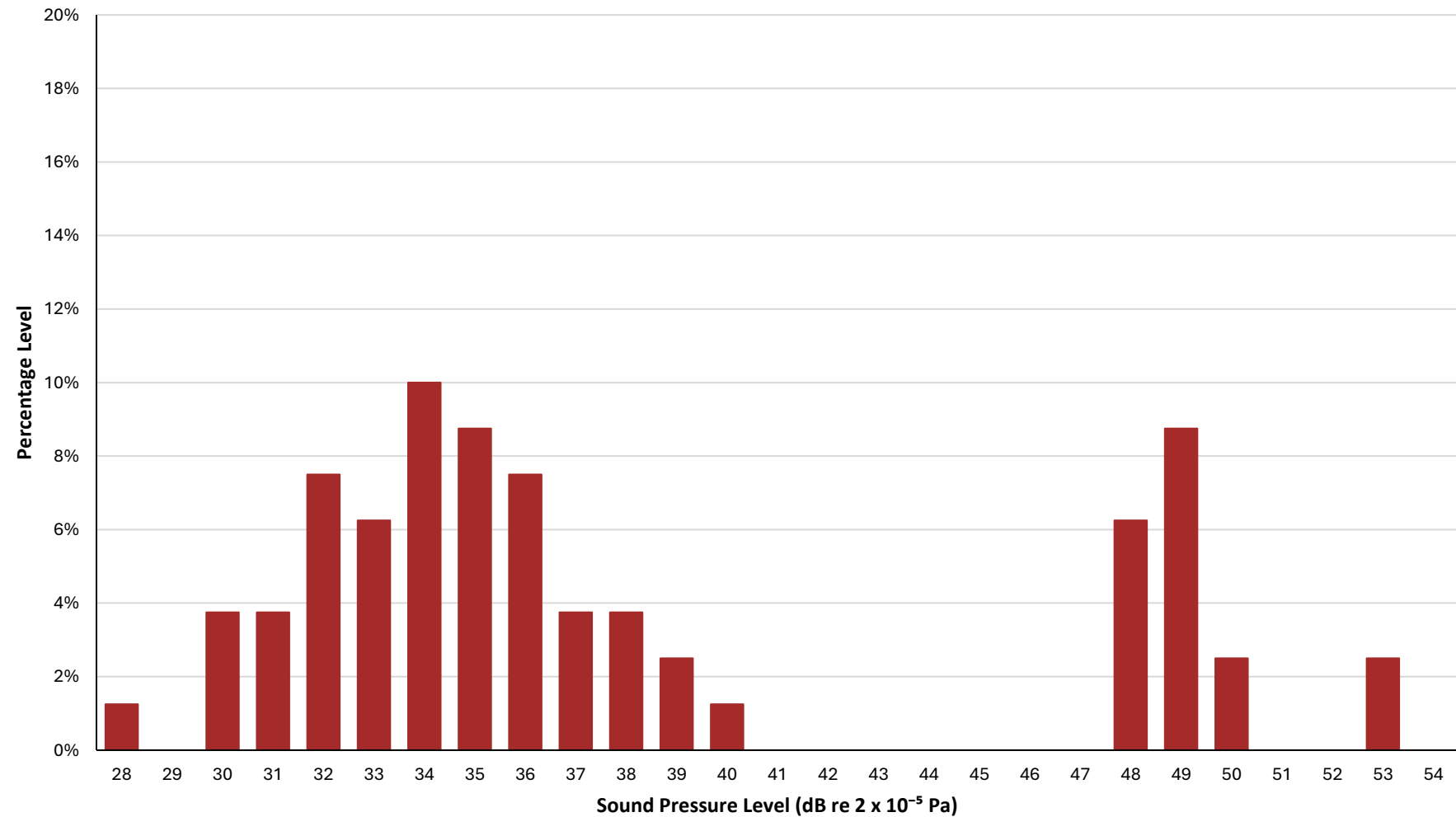
- 1.7.1 Differences between the evening noise assessment presented herein and the operational noise assessment presented in **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]** reflect the use of an alternative operational scenario and an evening-specific background sound level dataset. The assessment therefore considers a different combination of source and receptor conditions to those reported in **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]**. The assessment does not identify higher maximum plant sound power levels than those considered within the ES.
- 1.7.2 Including additional mitigation, **ES Volume 1, Chapter 12 – Noise and Vibration [APP-048]** concluded that NSR3B was the only receptor to experience minor adverse effect.
- 1.7.3 Based on the results of the evening noise assessment, the following receptors experience low impacts during the evening:
- NSR3B
 - NSR5A
- 1.7.4 It is noted that rating levels at NSR3B and NSR5A are 1-2 dB higher than the background sound level, and as such are at the lower end of the low impact category threshold.

- 1.7.5 Based on the context of the assessment and consideration of the daytime, night-time and early morning periods outcomes, the overall effects at receptors are considered unchanged from that presented in the ES.
- 1.7.6 The operational assessment presented in the ES considered a reasonable worst-case scenario by assessing periods when receptors are most sensitive to noise effects and when background sound levels are at their lowest. The subsequent evening assessment was undertaken in response to SNC's request to better understand potential effects on outdoor amenity use during the evening period. Whilst the evening assessment assumes a different operational scenario for the BESS, all identified effects remain not significant. The assessment therefore supplements, rather than supersedes, the conclusions of the ES.
- 1.7.7 To avoid significant adverse effects and mitigate adverse effects, the operational noise requirements within the **Outline OEMP [APP-196]** will be updated such that:
- The rating level from the BESS at facades will achieve the predicted levels outlined within **Table 1.12** of this report during the evening.
 - The rating level from other elements of the Scheme will be mitigated to ensure that the predicted façade incident rating level of sound at the nearest residential receptors shall not exceed the background sound level. Where the background sound level is low (i.e. 30 dB $L_{A90,15\text{minutes}}$ or below), the rating level will not exceed 30 dB $L_{Ar,Tr}$.

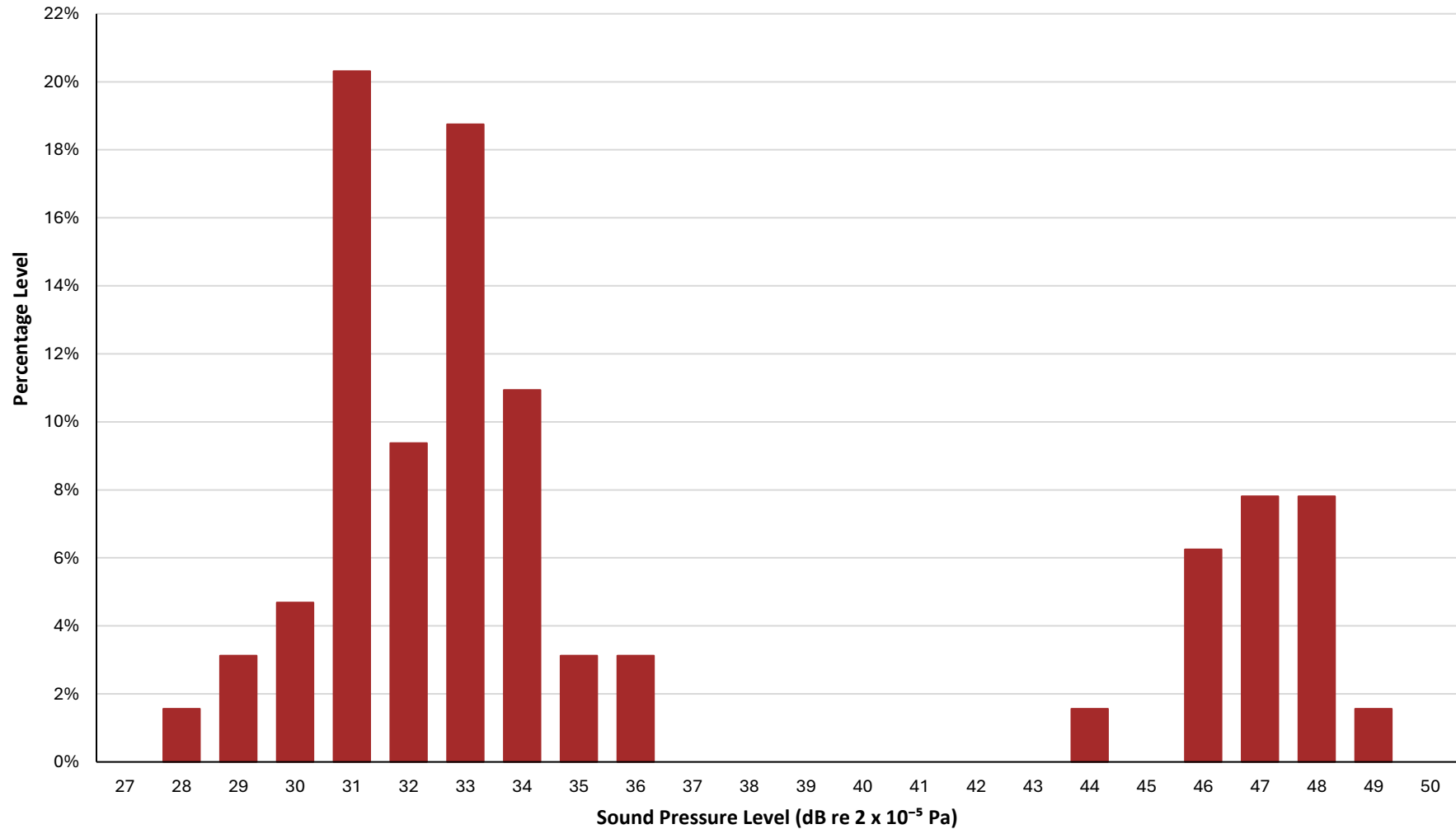
Appendix A L_{A90} Histograms

A.1 Parcel Group 1

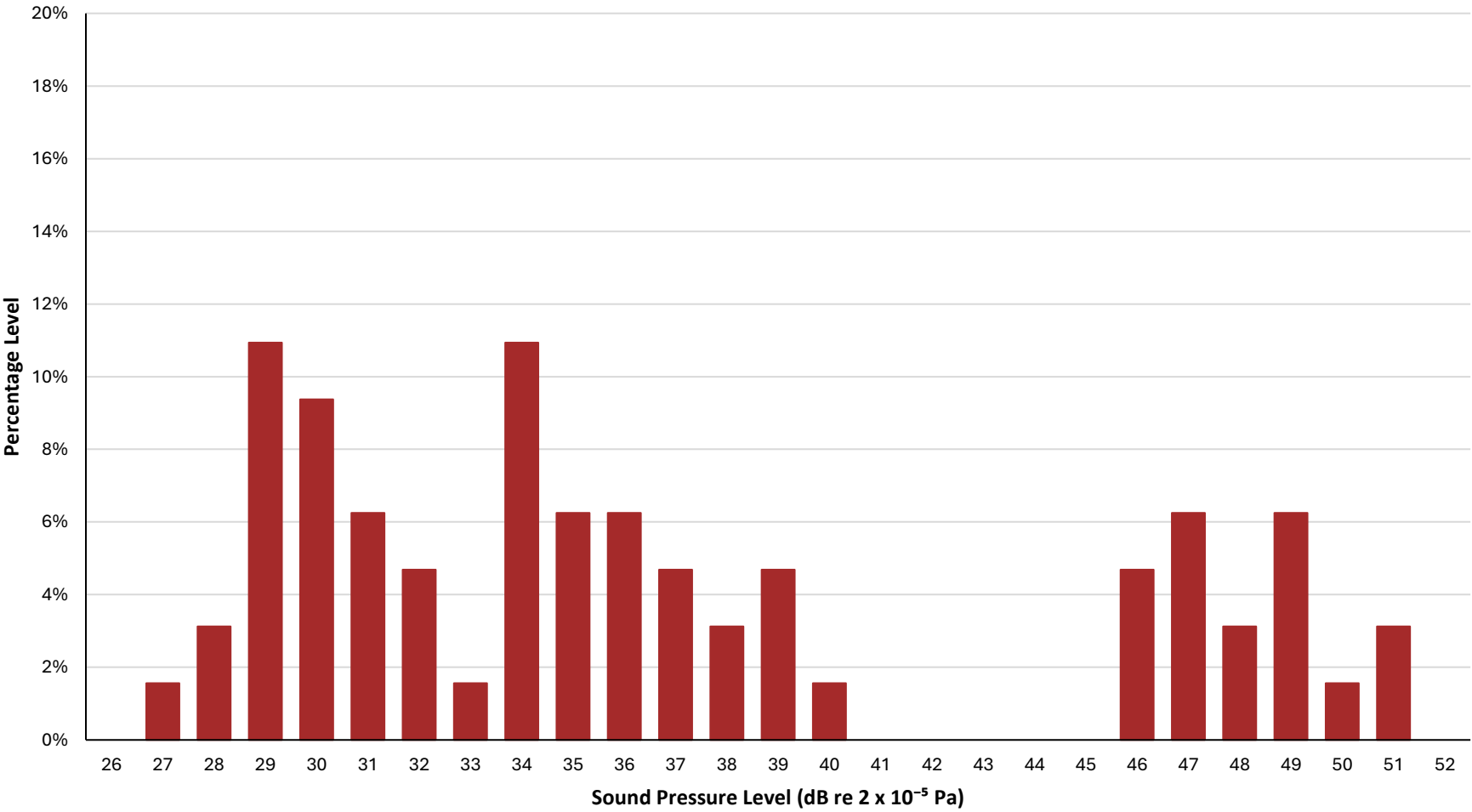
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP41



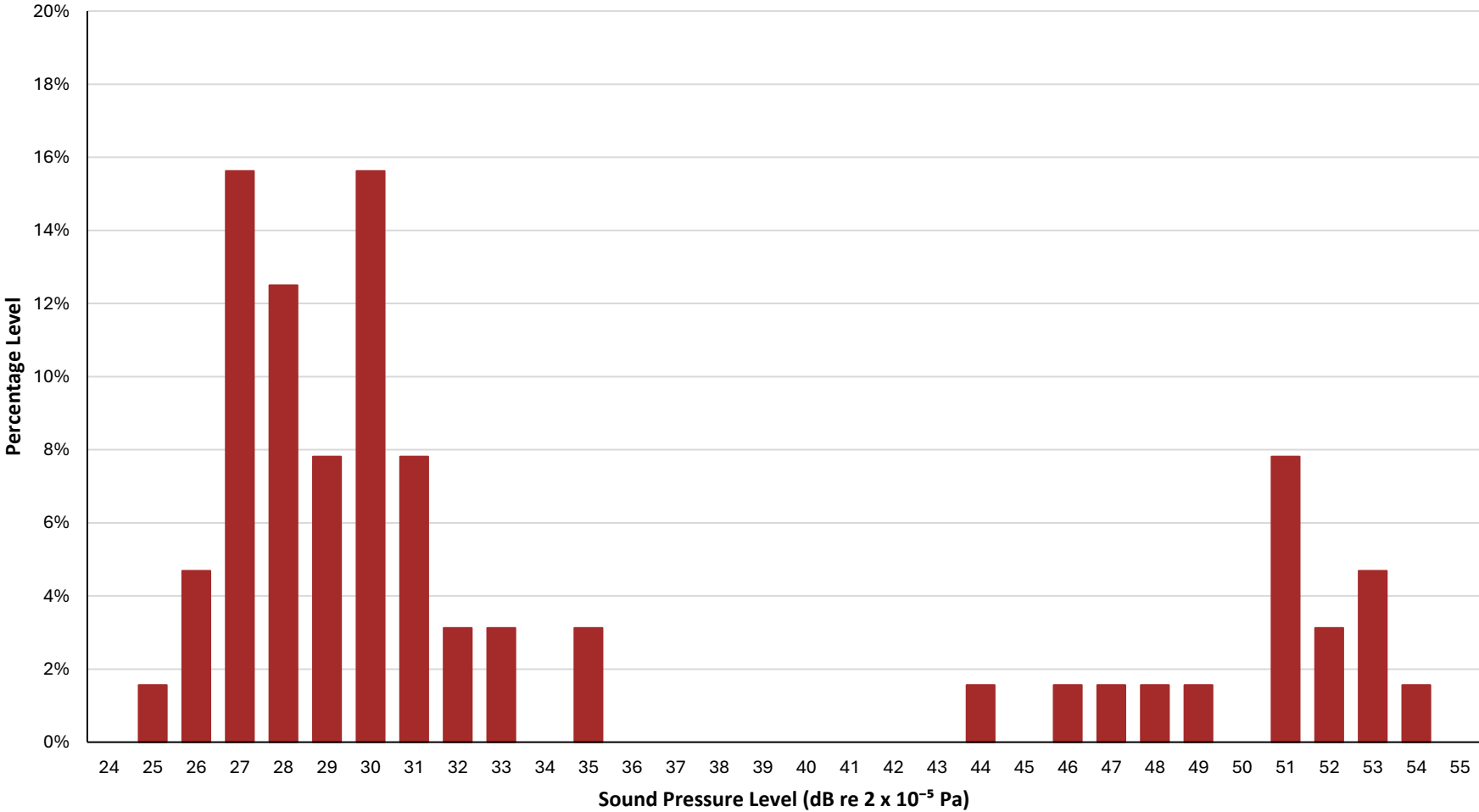
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP42



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP43

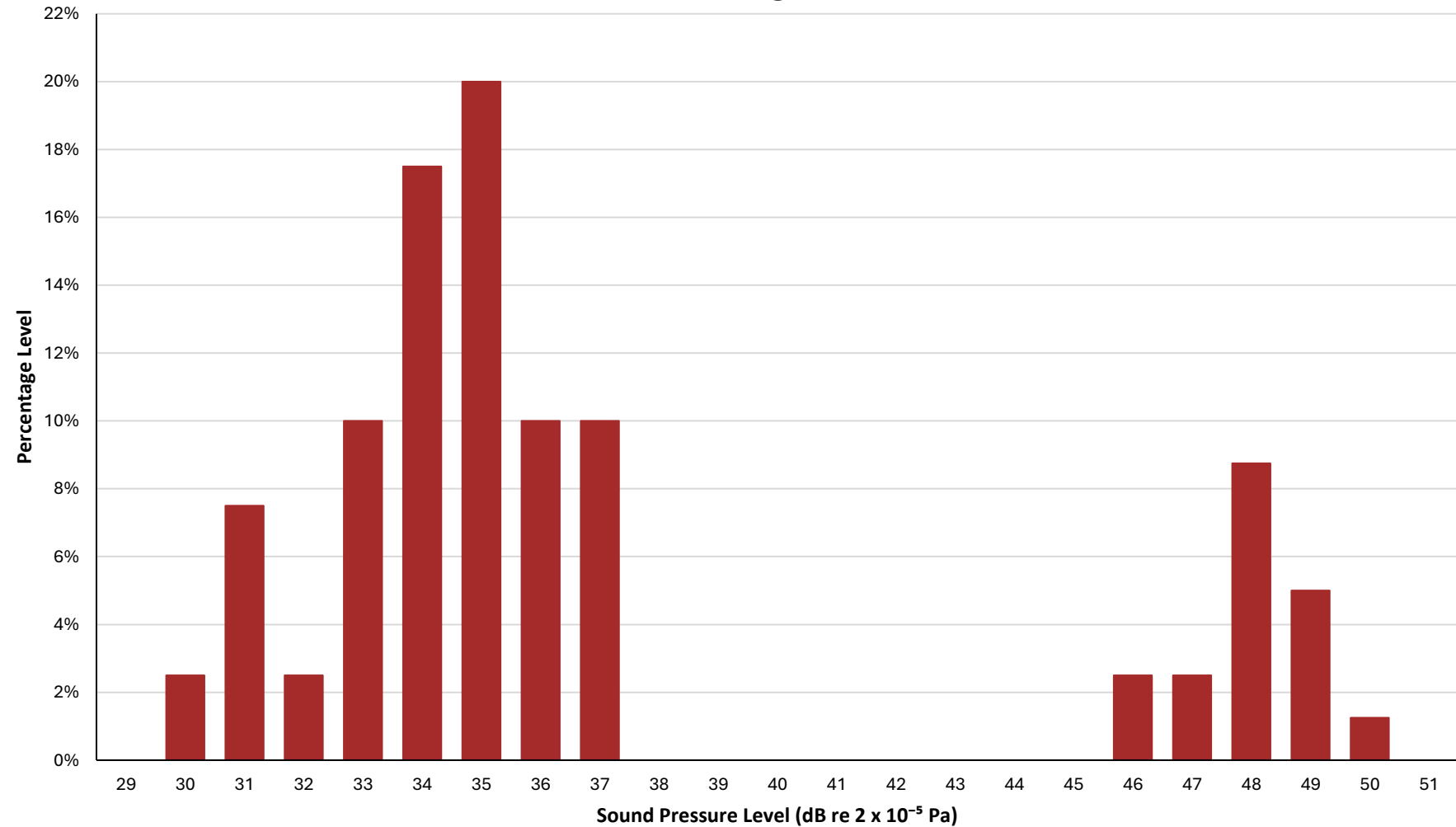


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP44

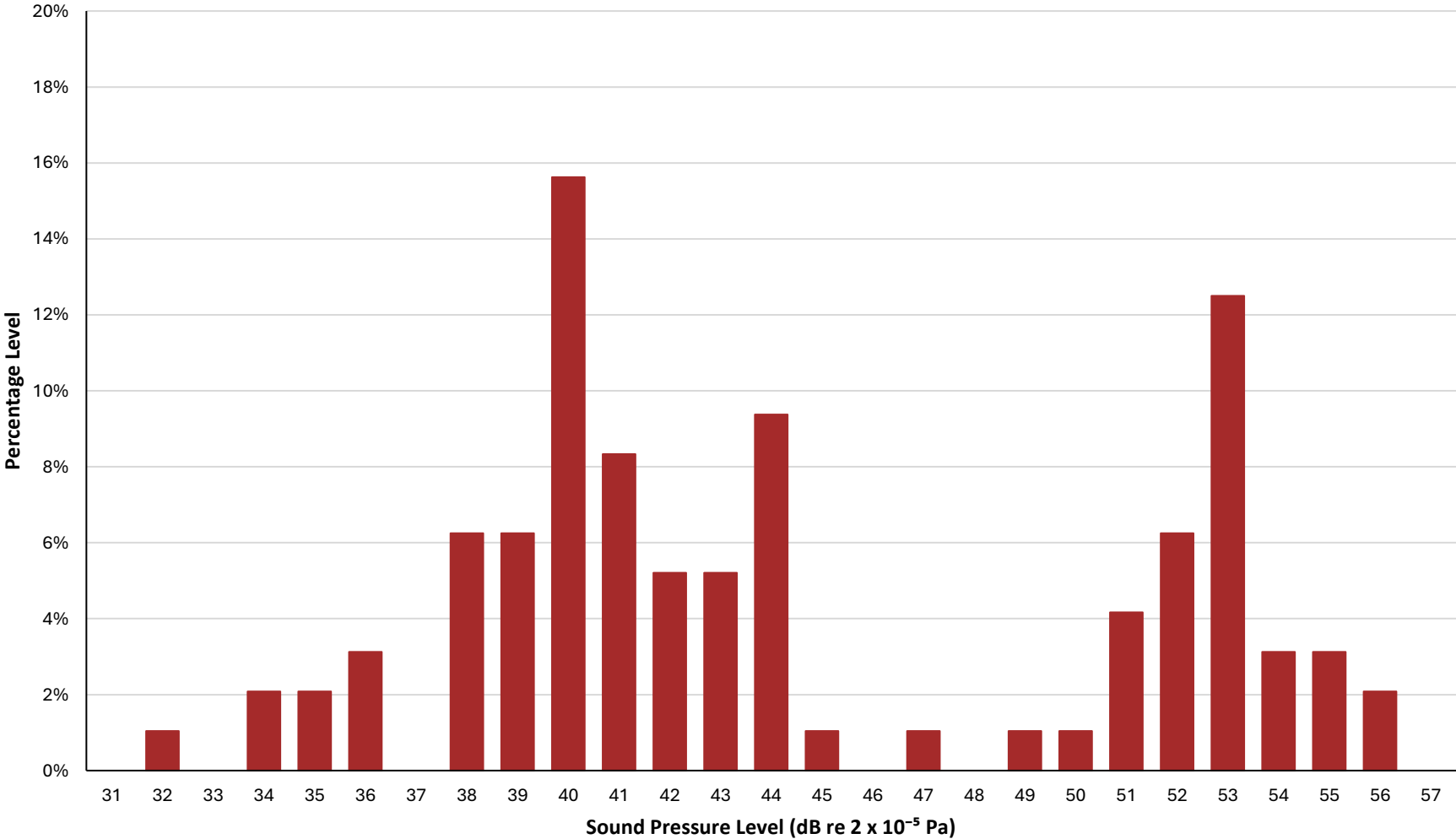


A.2 Parcel Group 2

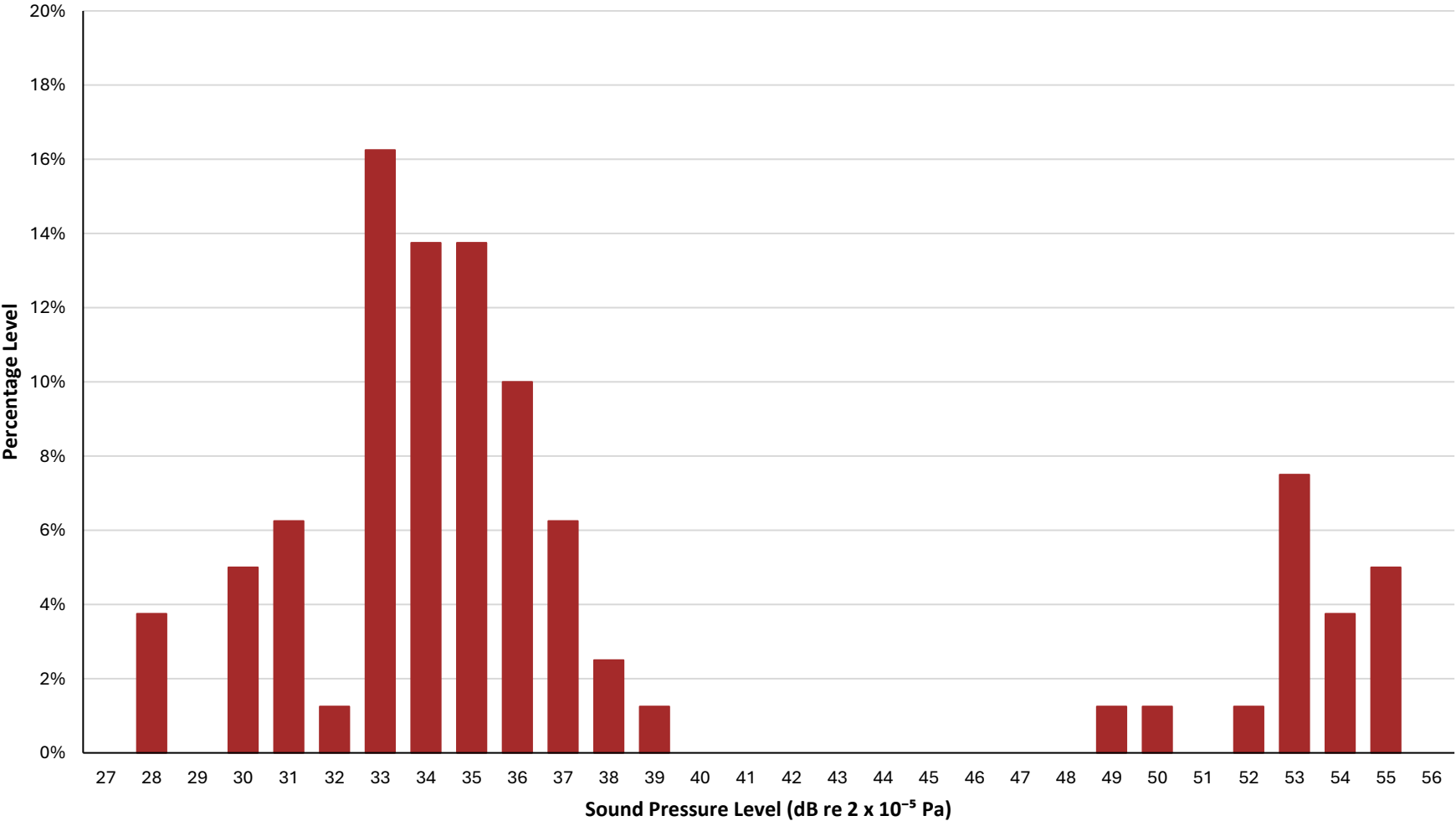
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP45



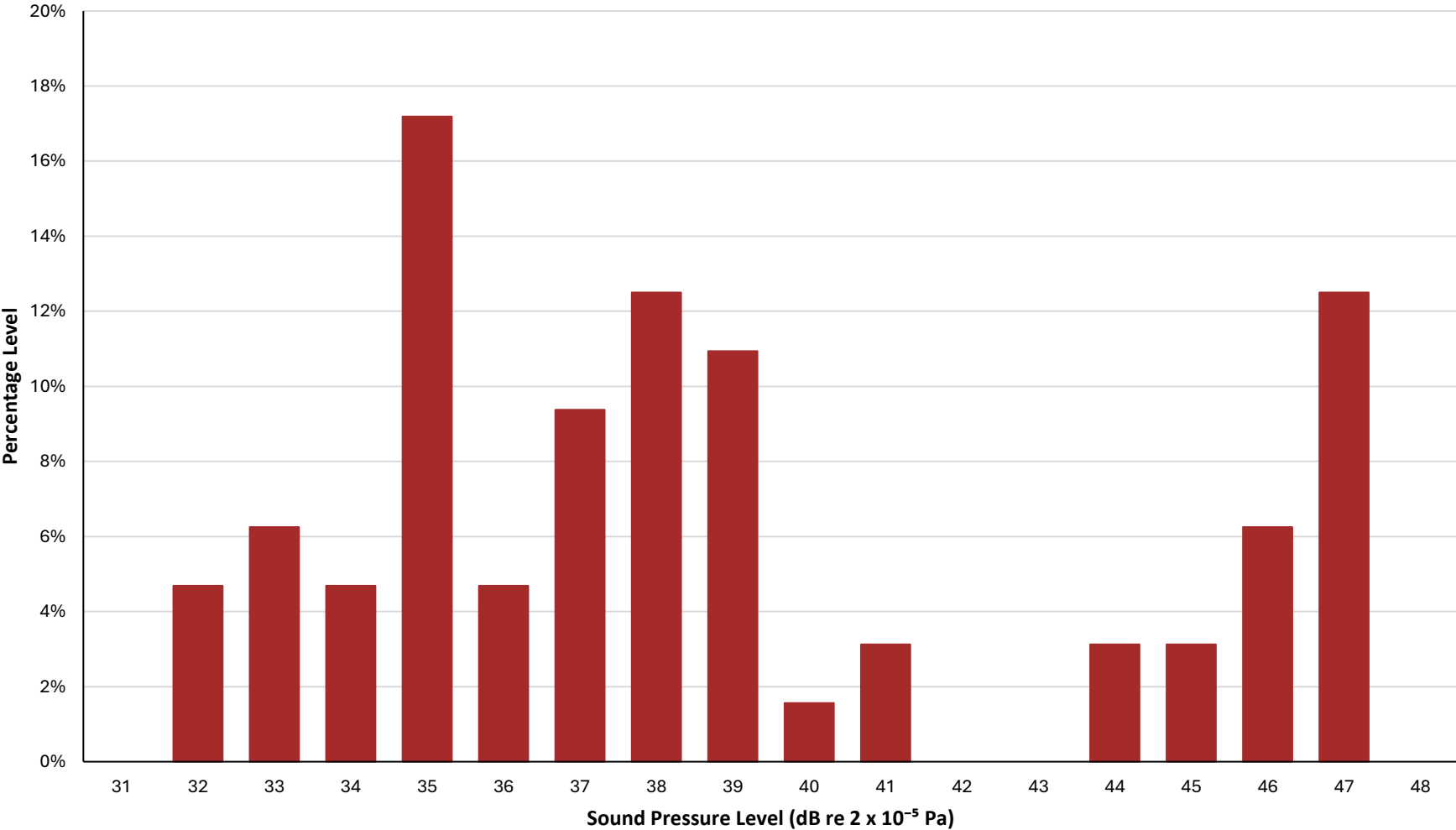
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP46



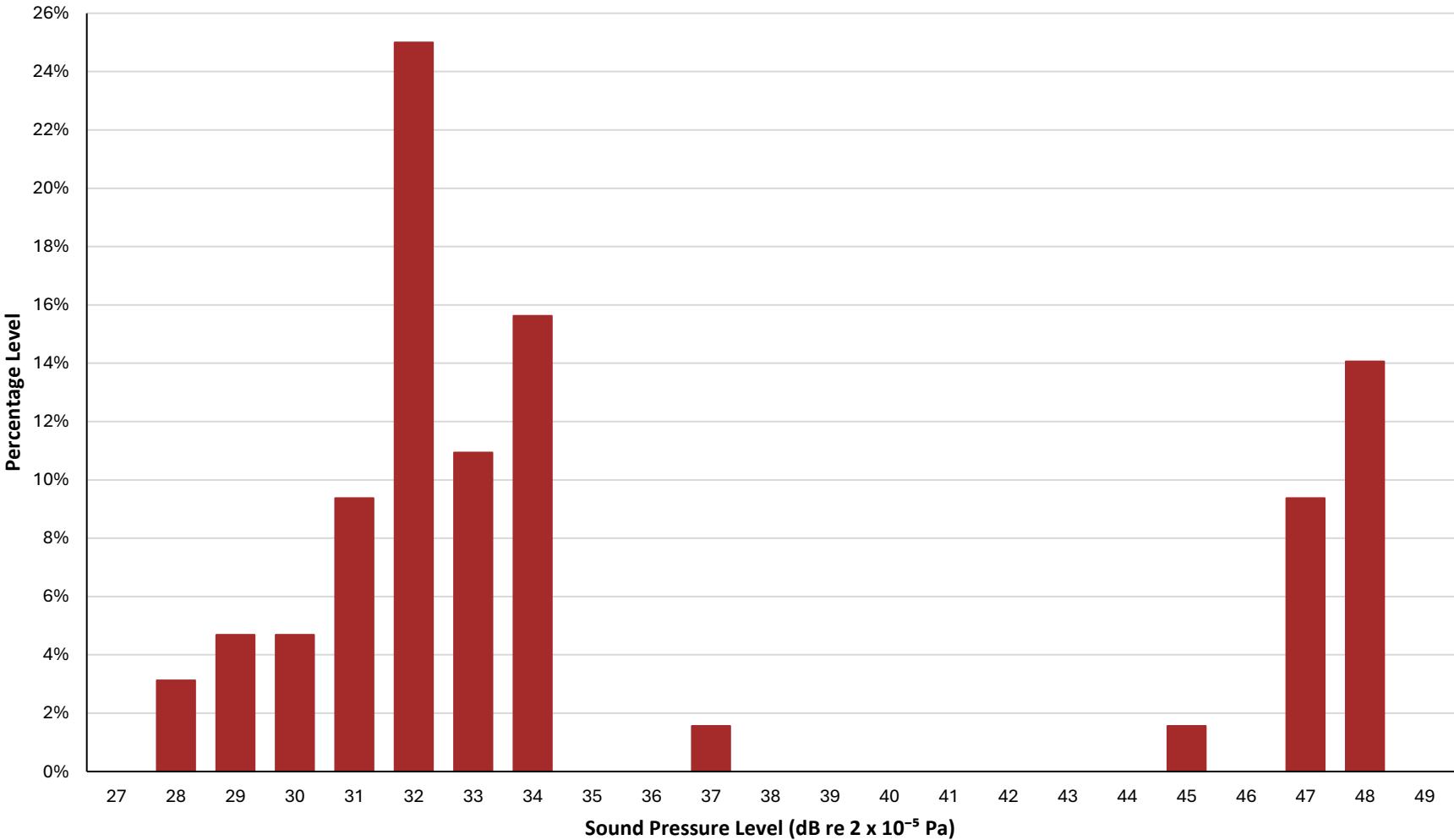
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP47



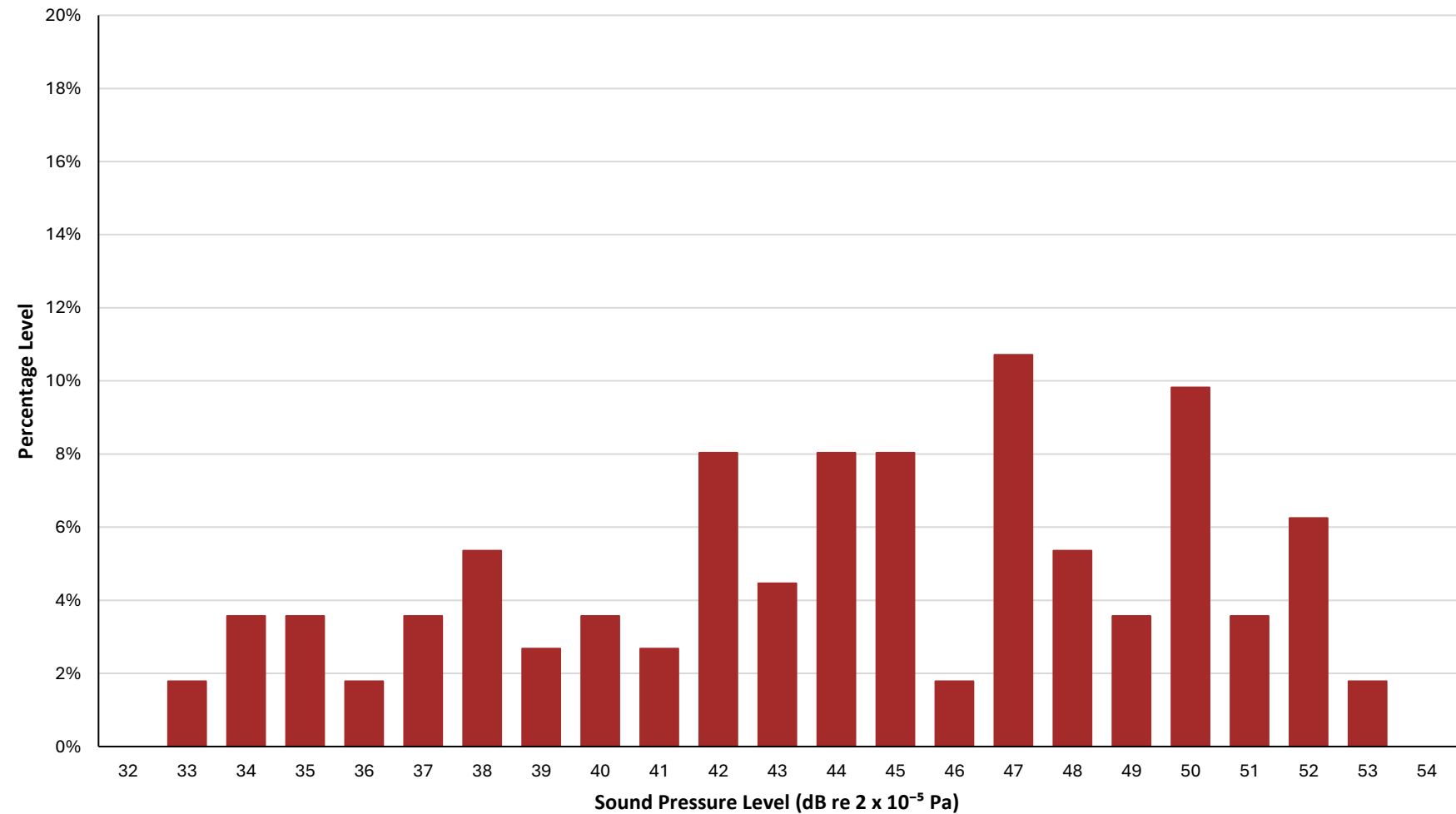
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP48



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP49

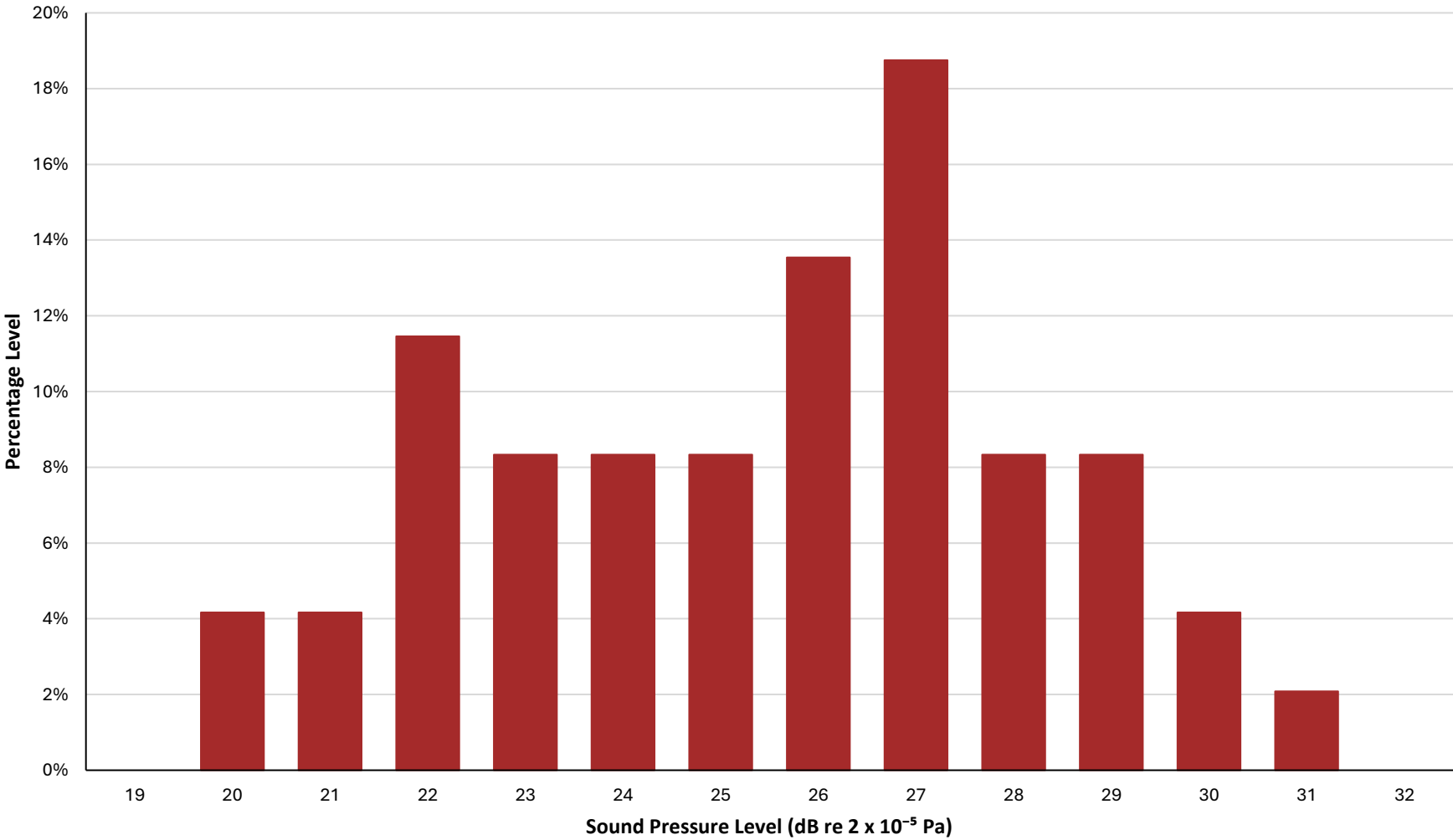


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP50

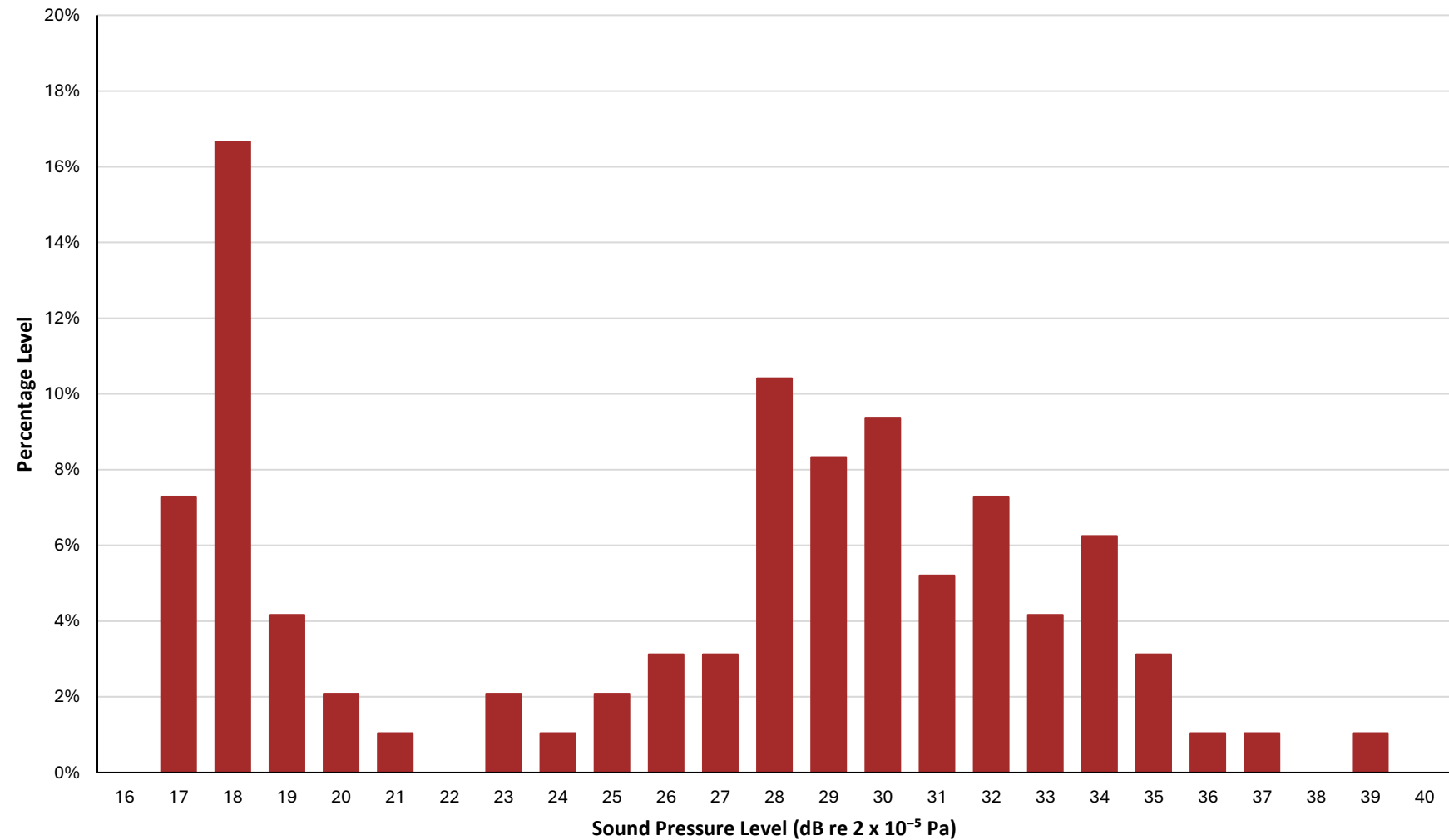


A.3 Parcel Group 3

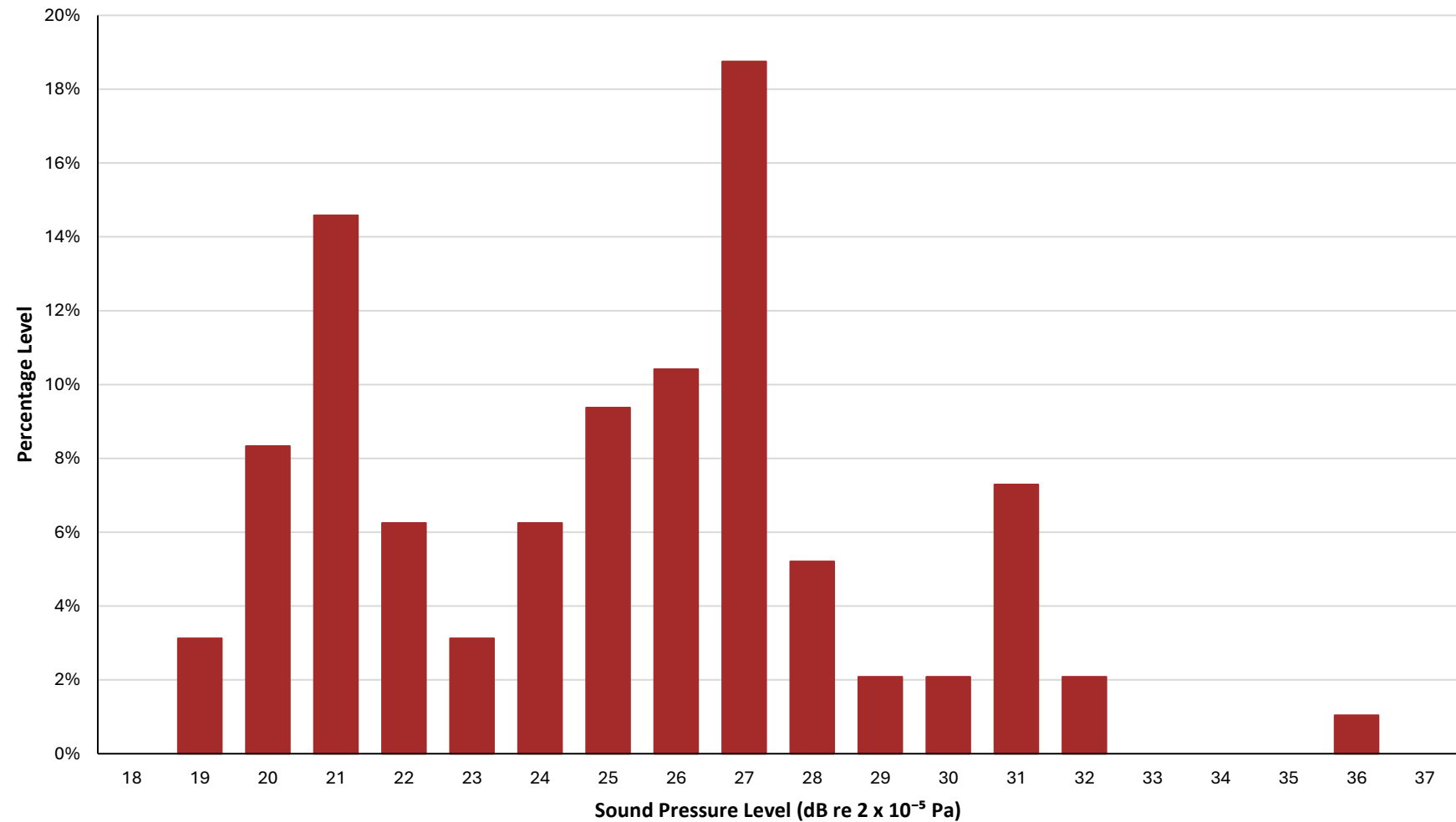
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP38



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP39

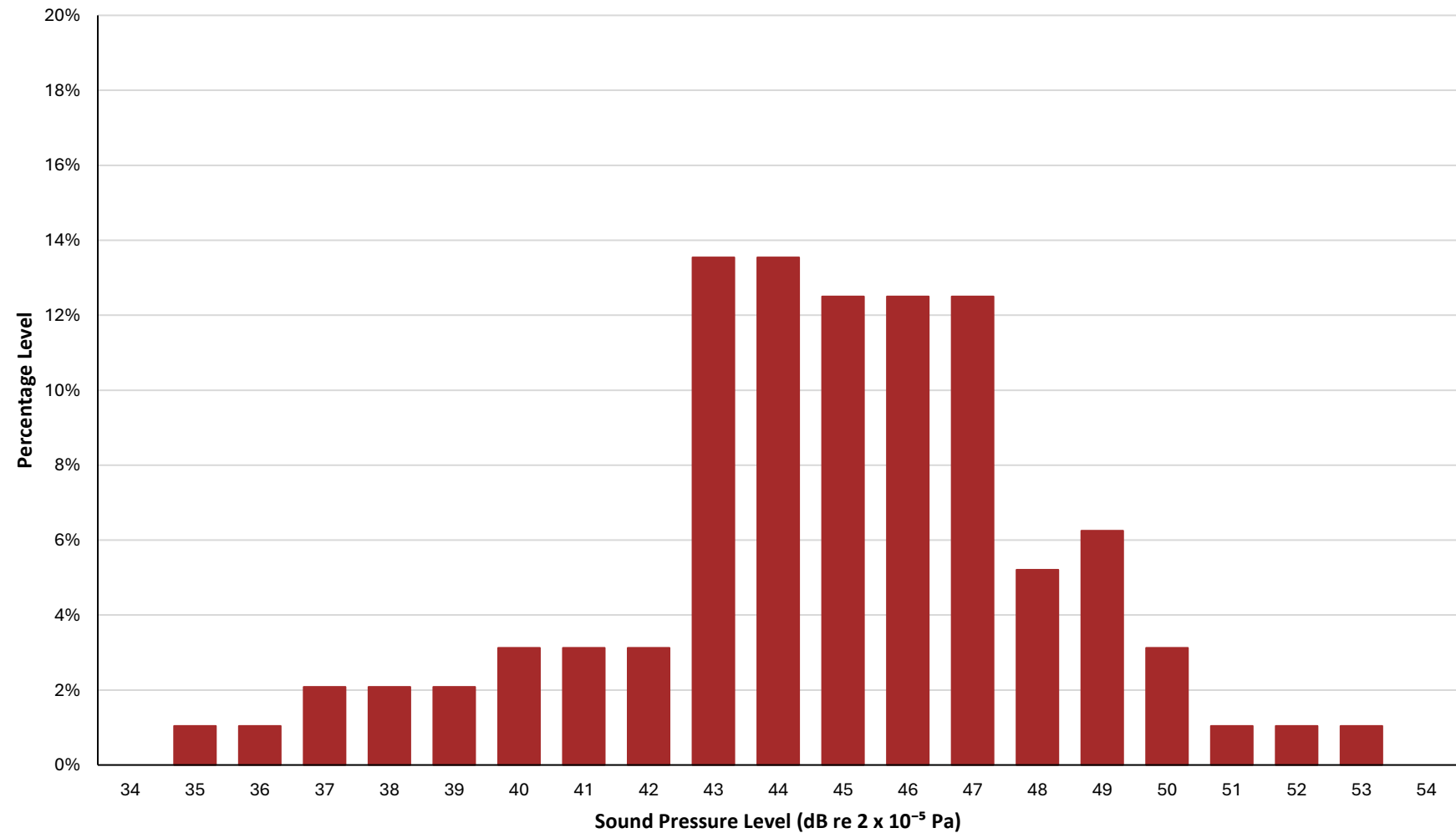


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP40

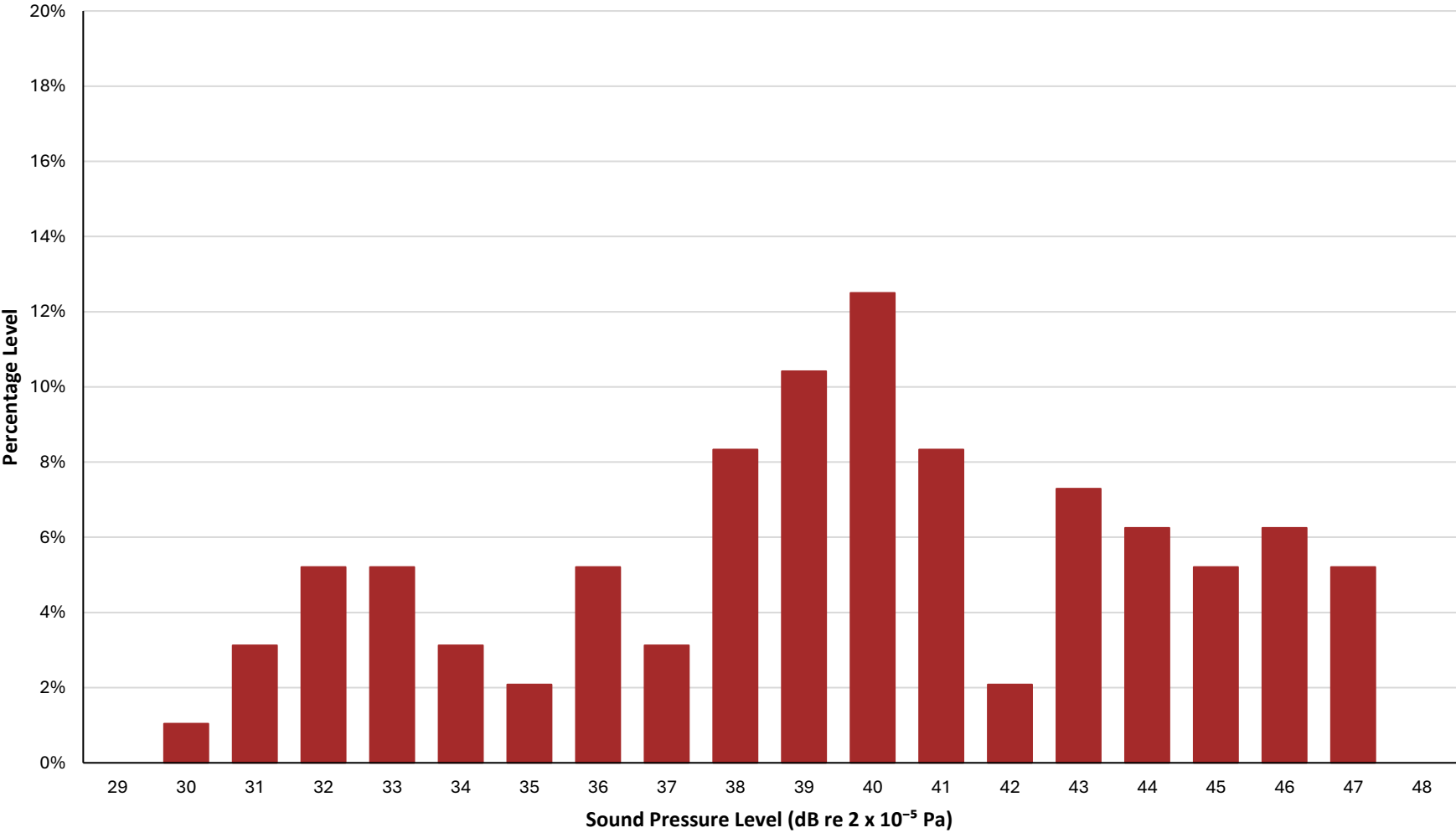


A.4 Parcel Group 4

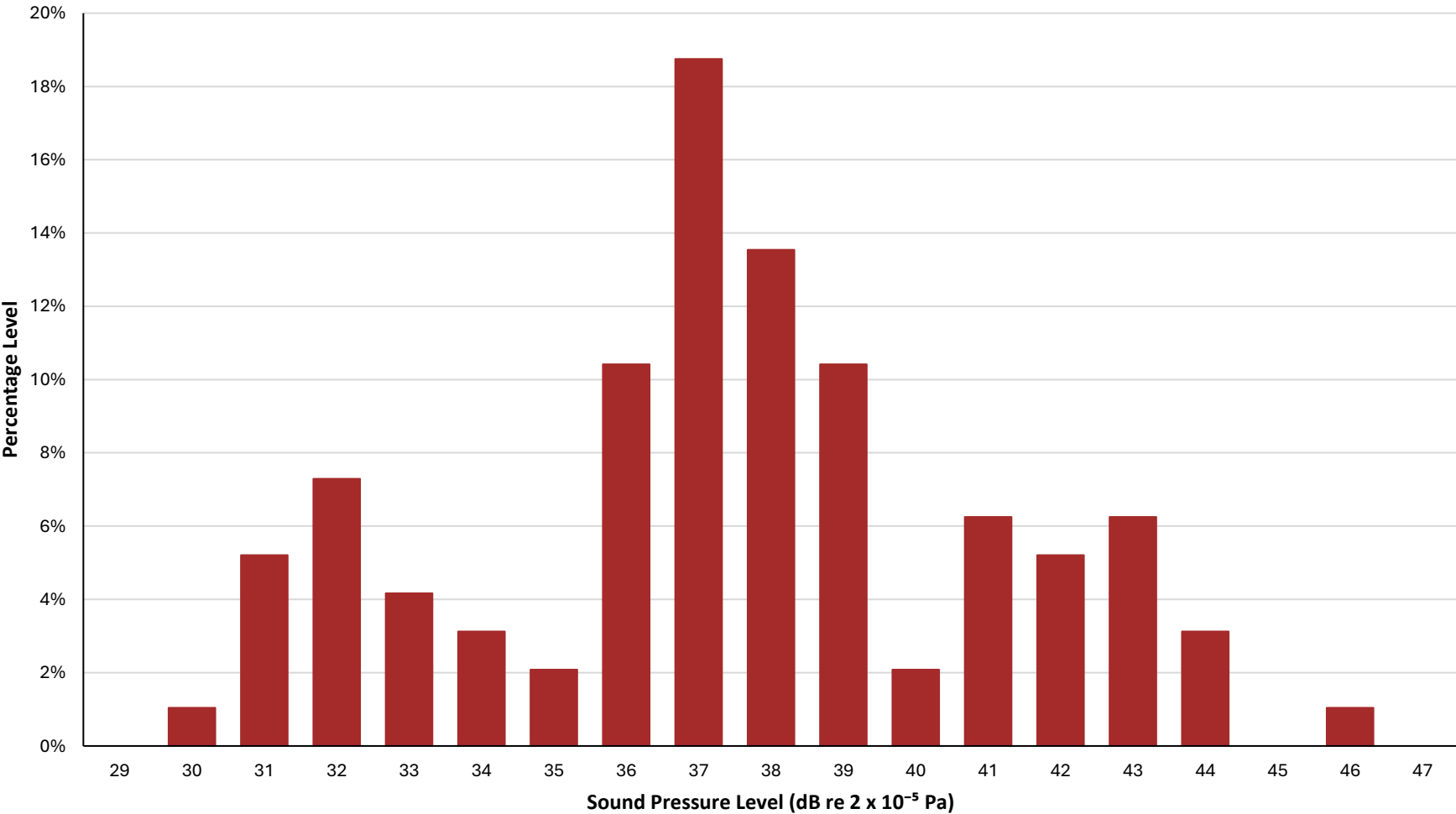
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP25



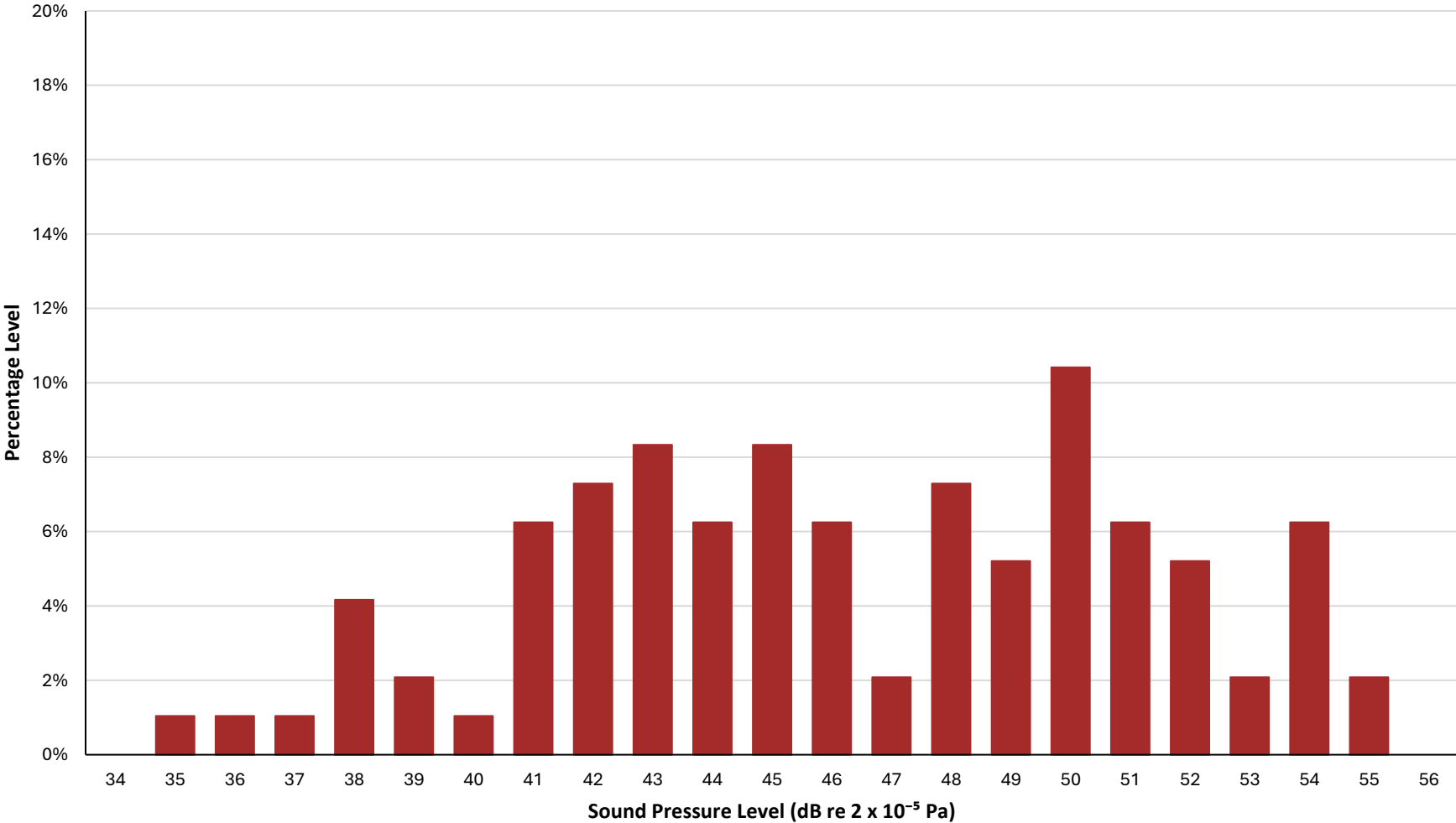
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP26



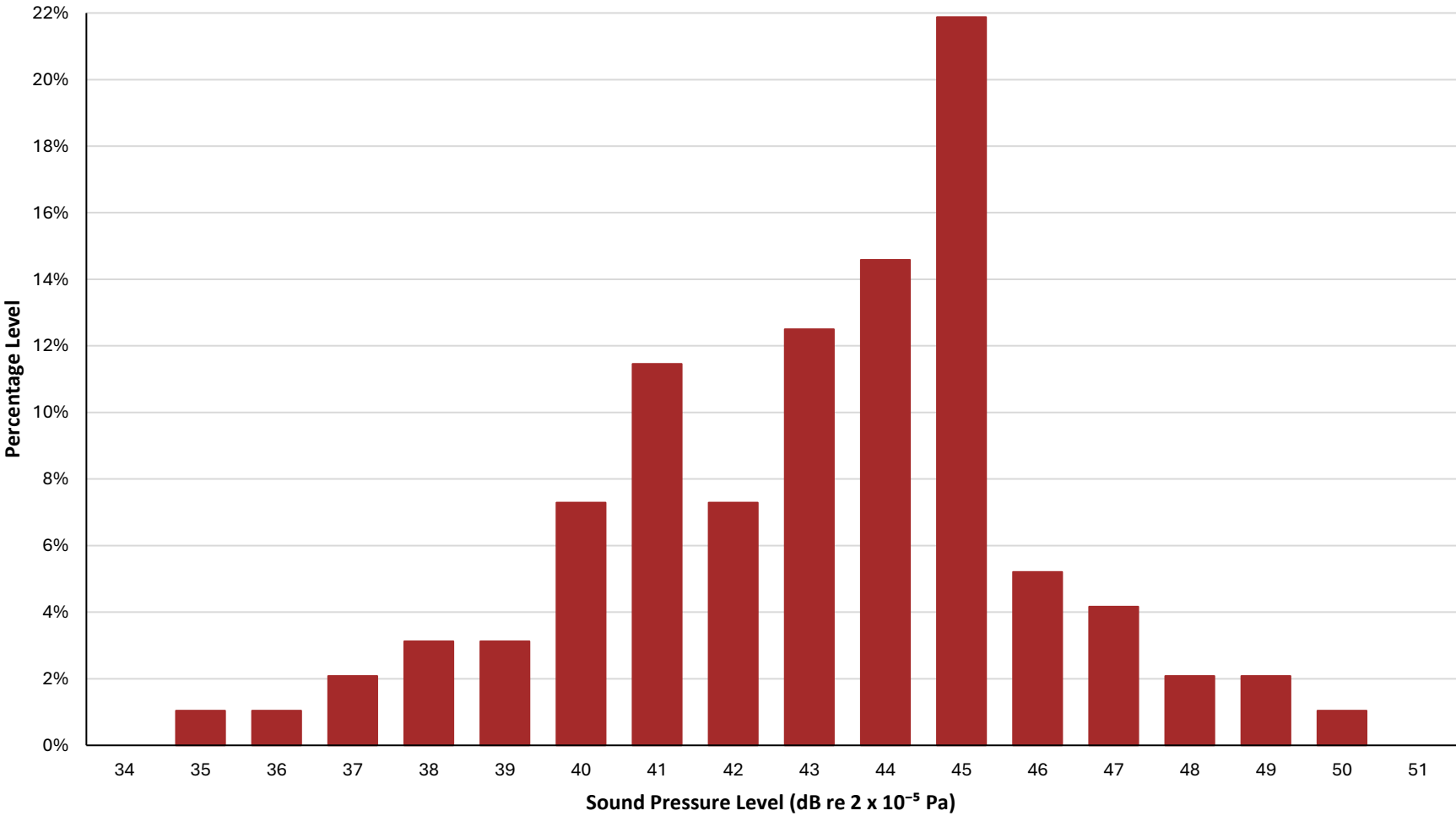
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP27



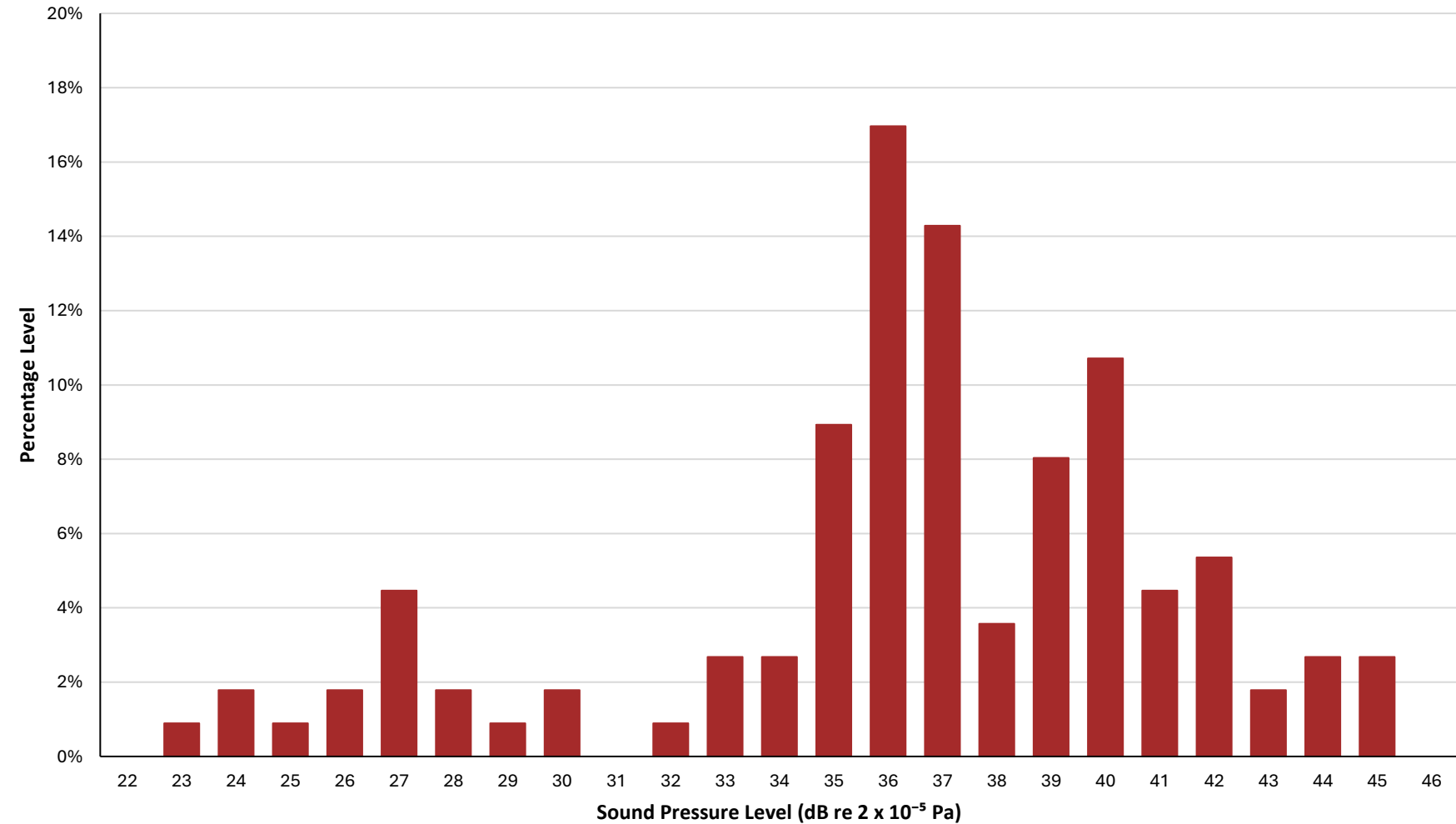
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP28



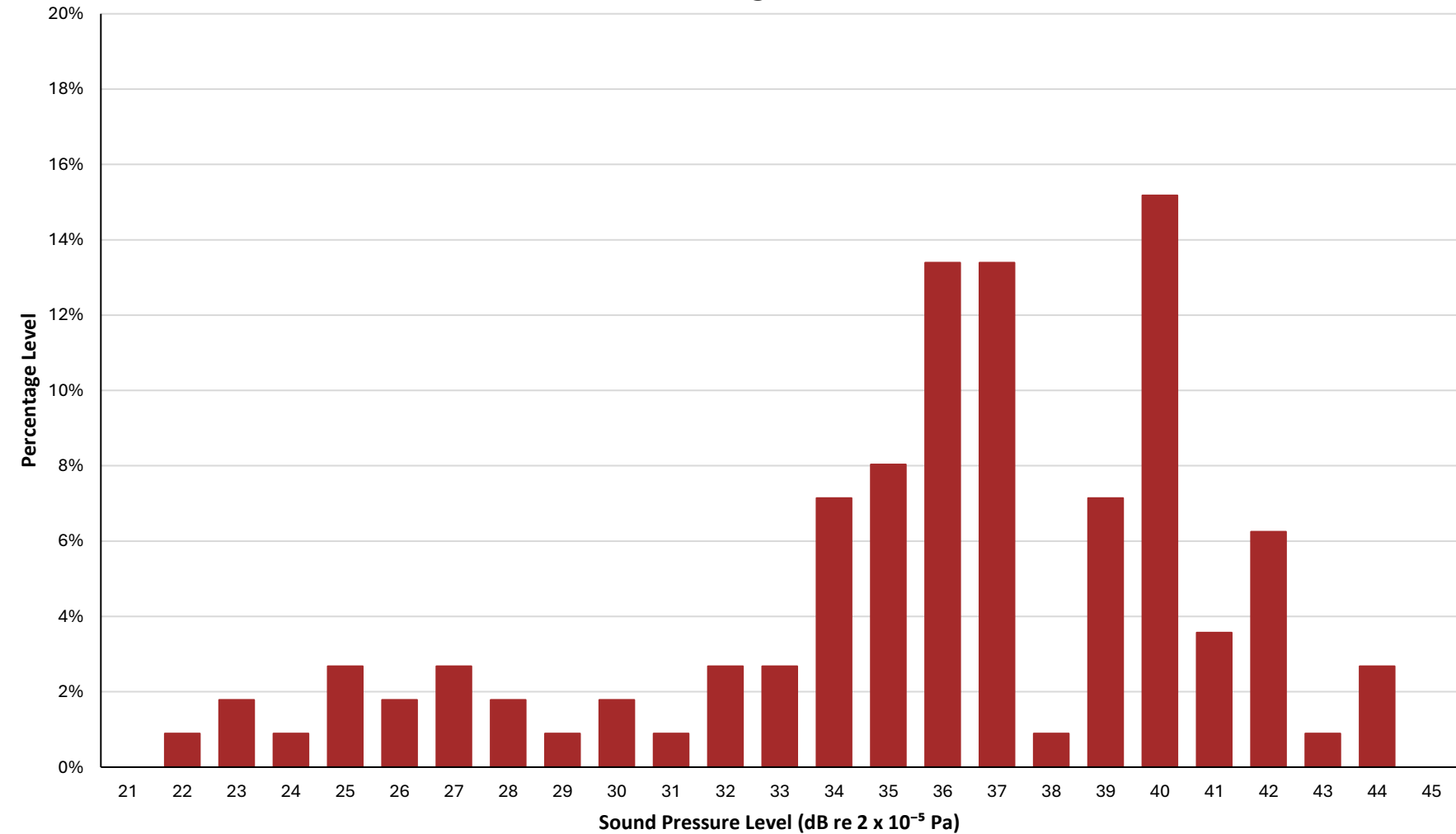
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP29



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP30

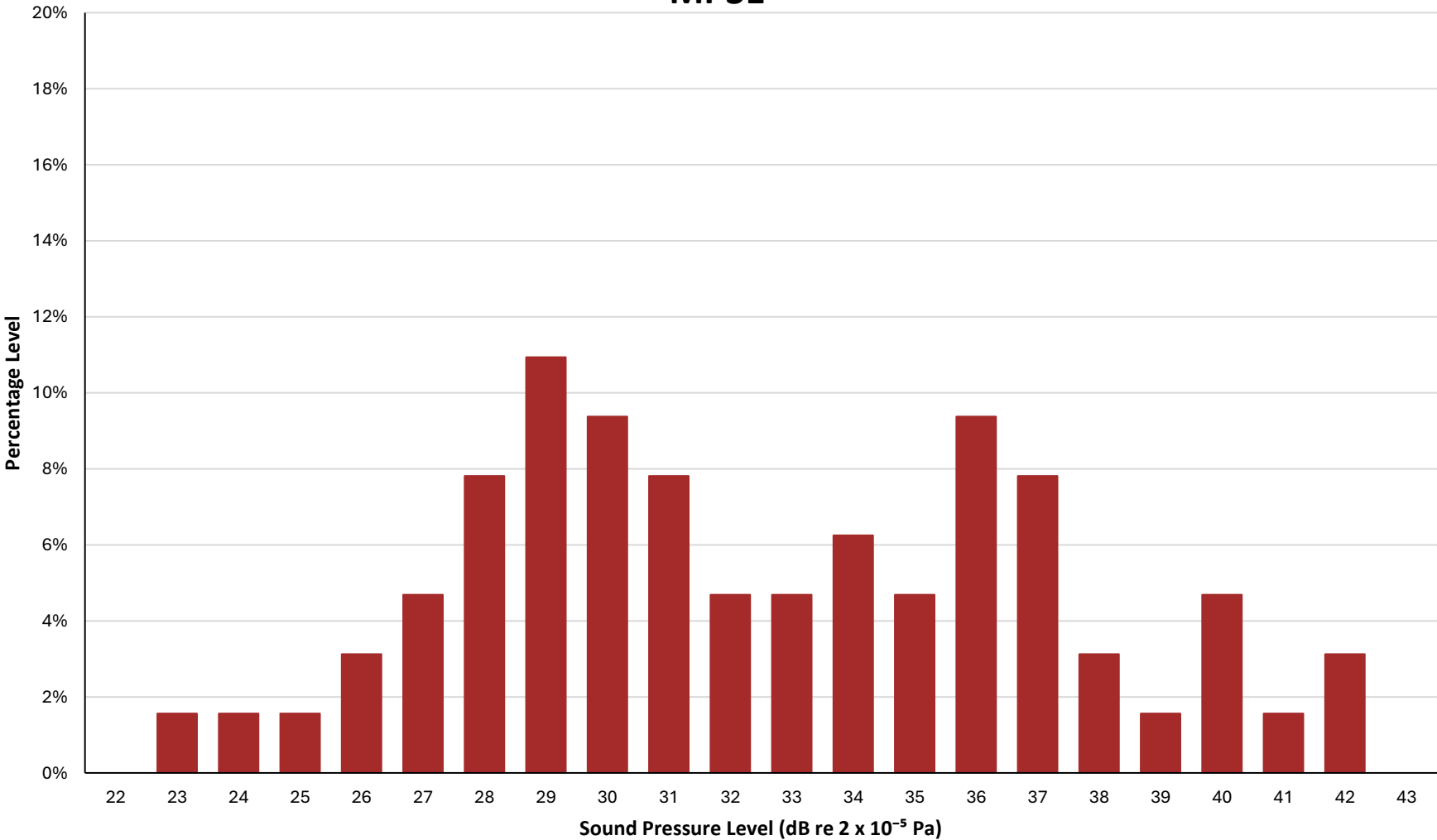


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP51

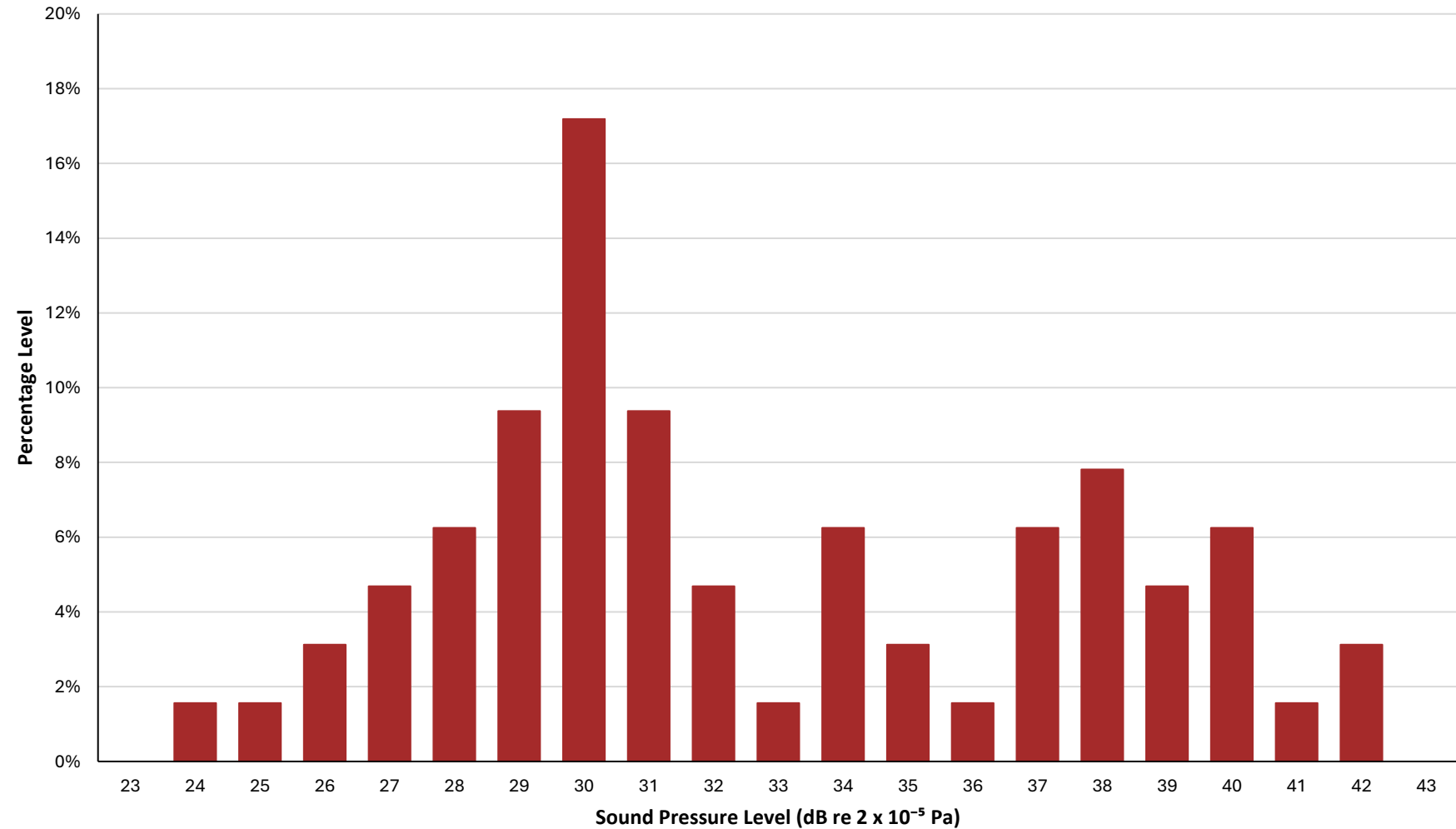


A.5 Parcel Group 5

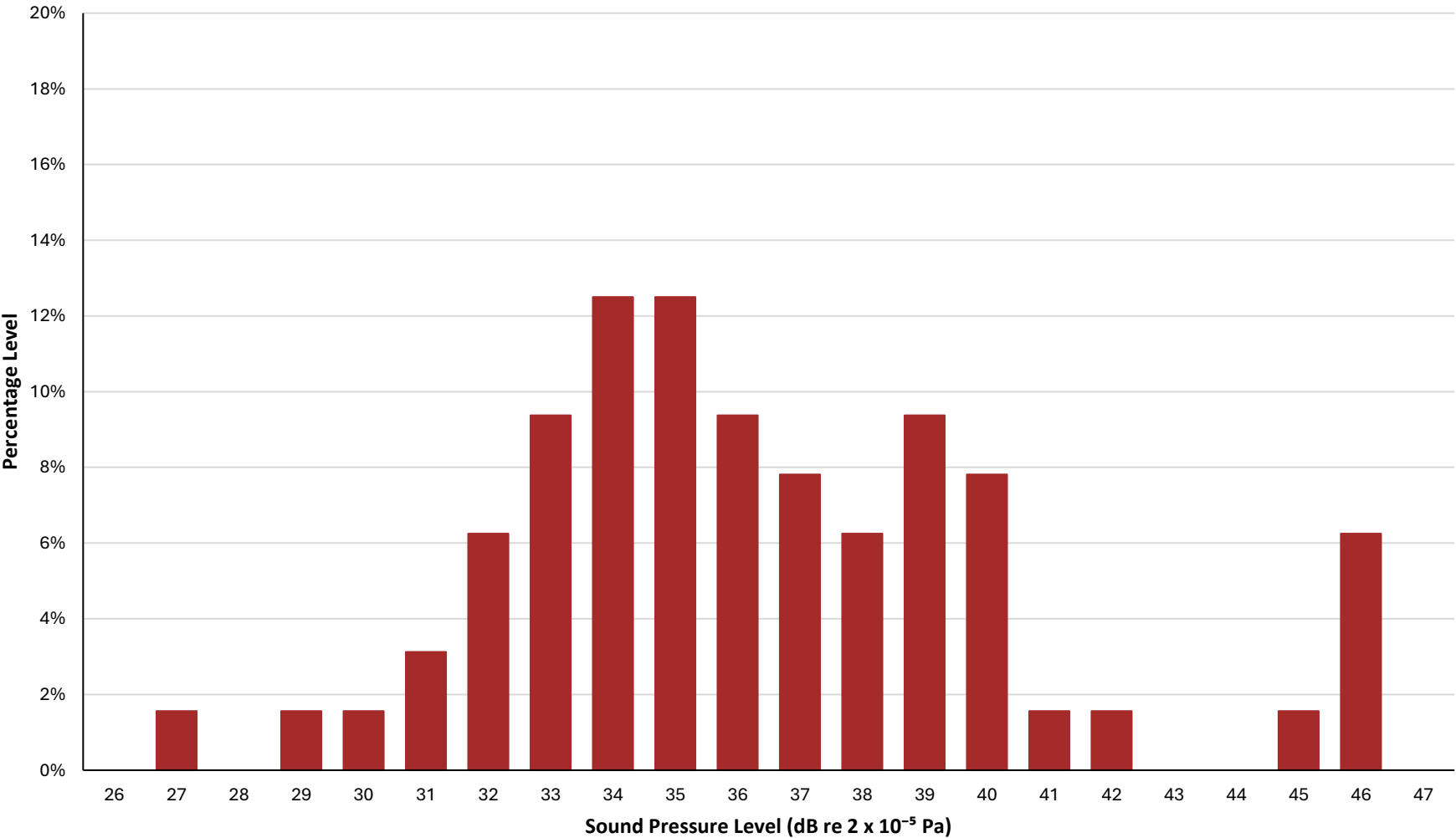
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP31



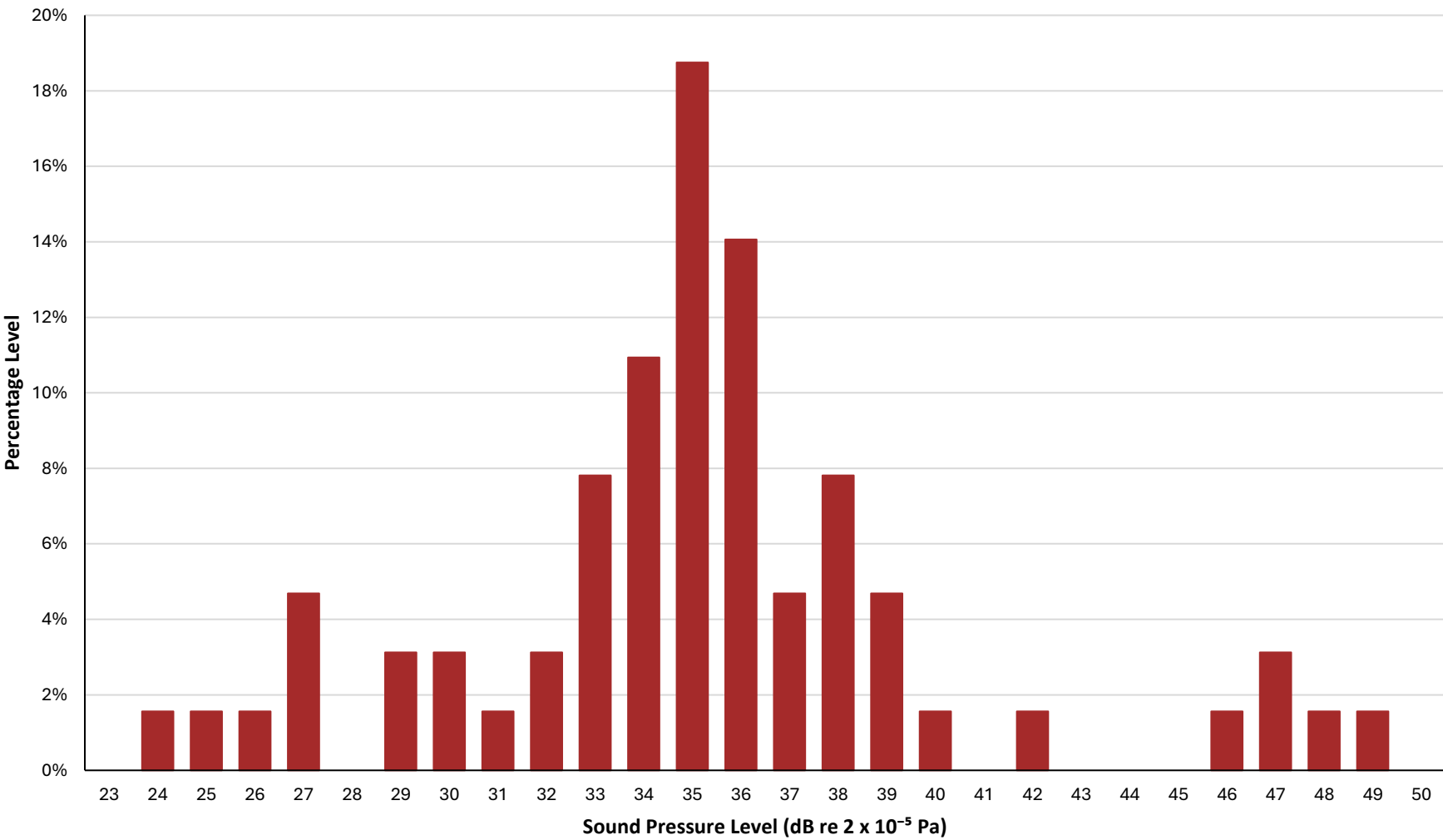
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP32



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP33

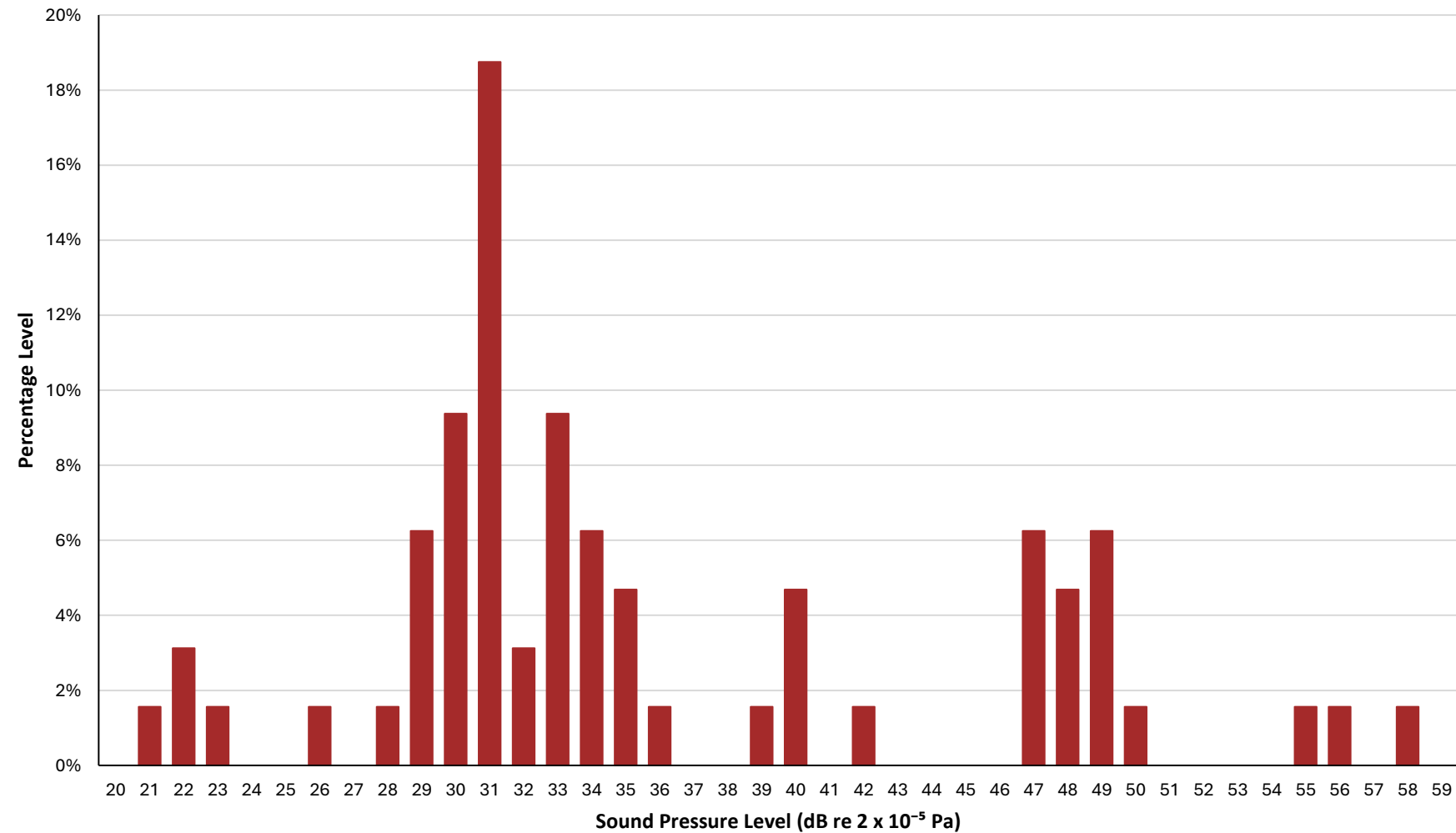


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP34

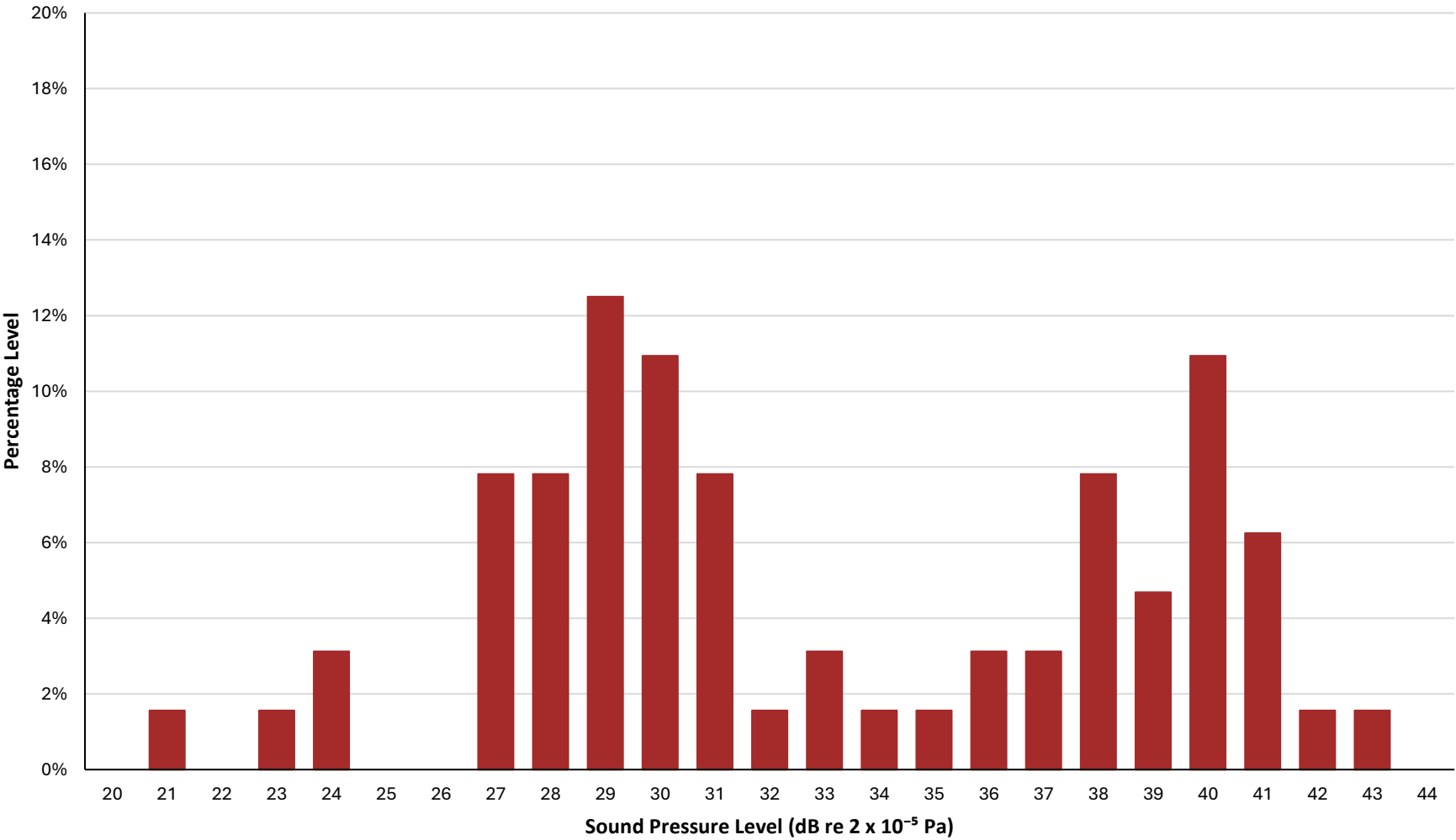


A.6 Parcel Group 6

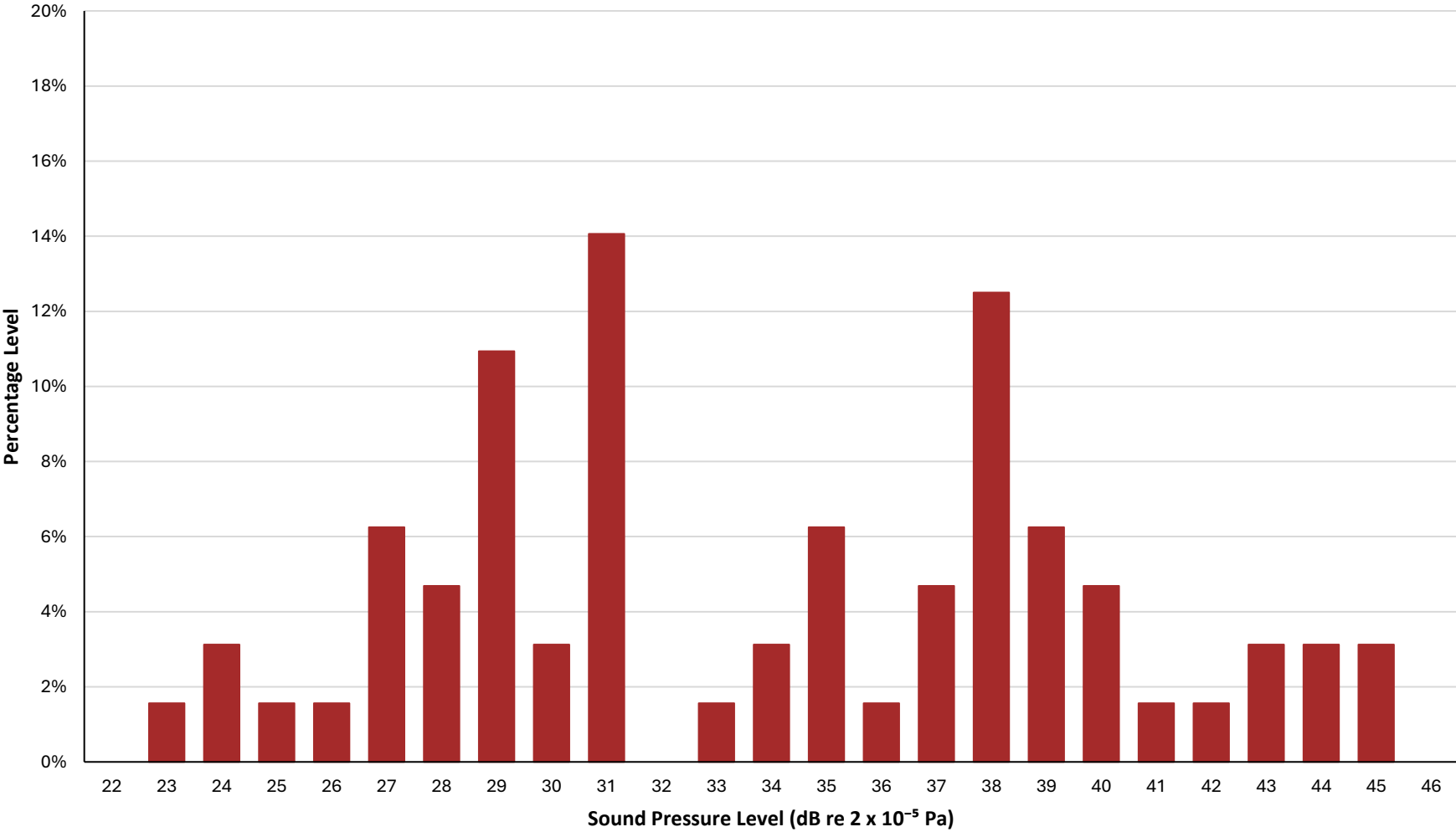
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP35



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP36

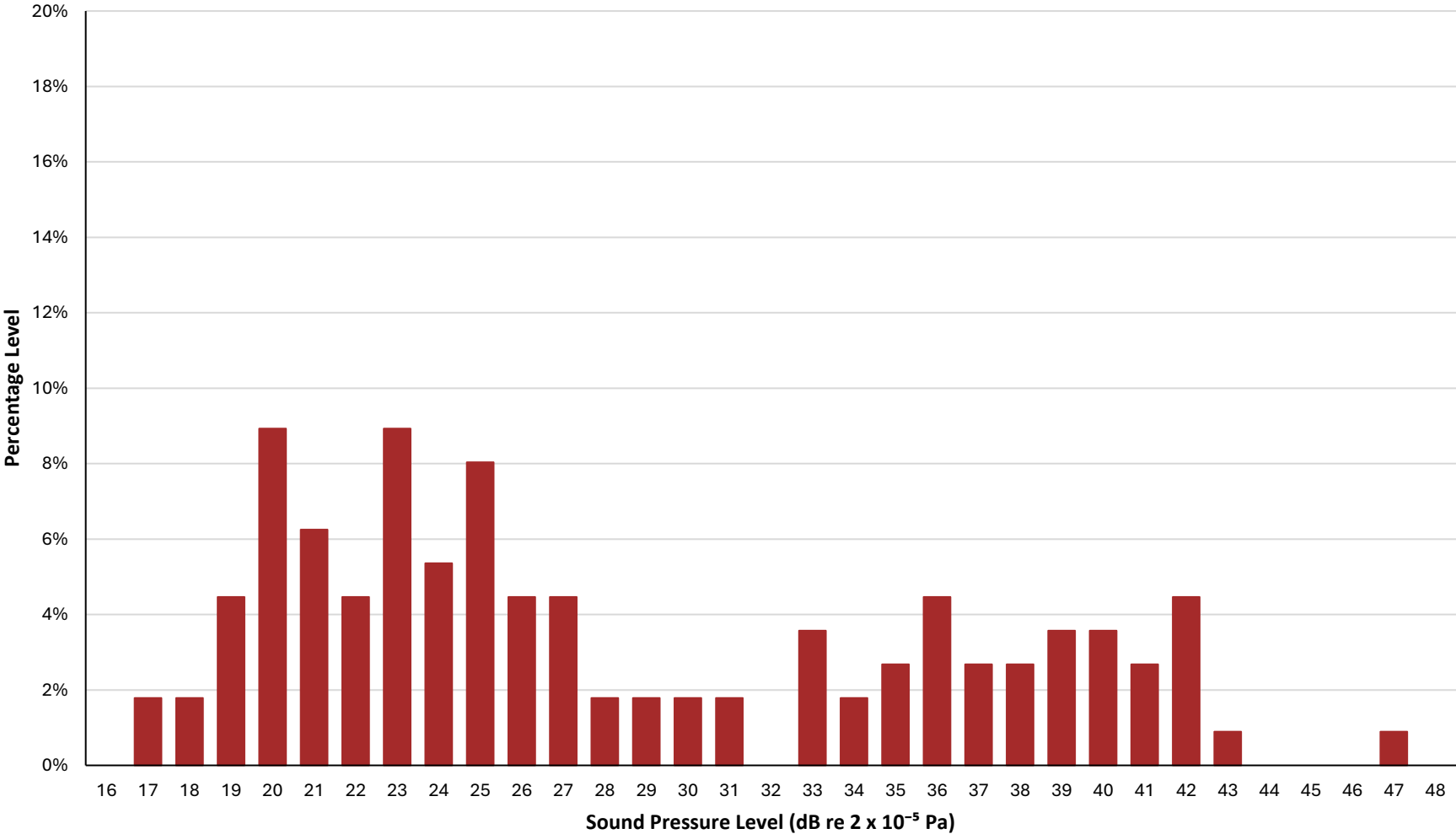


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP37

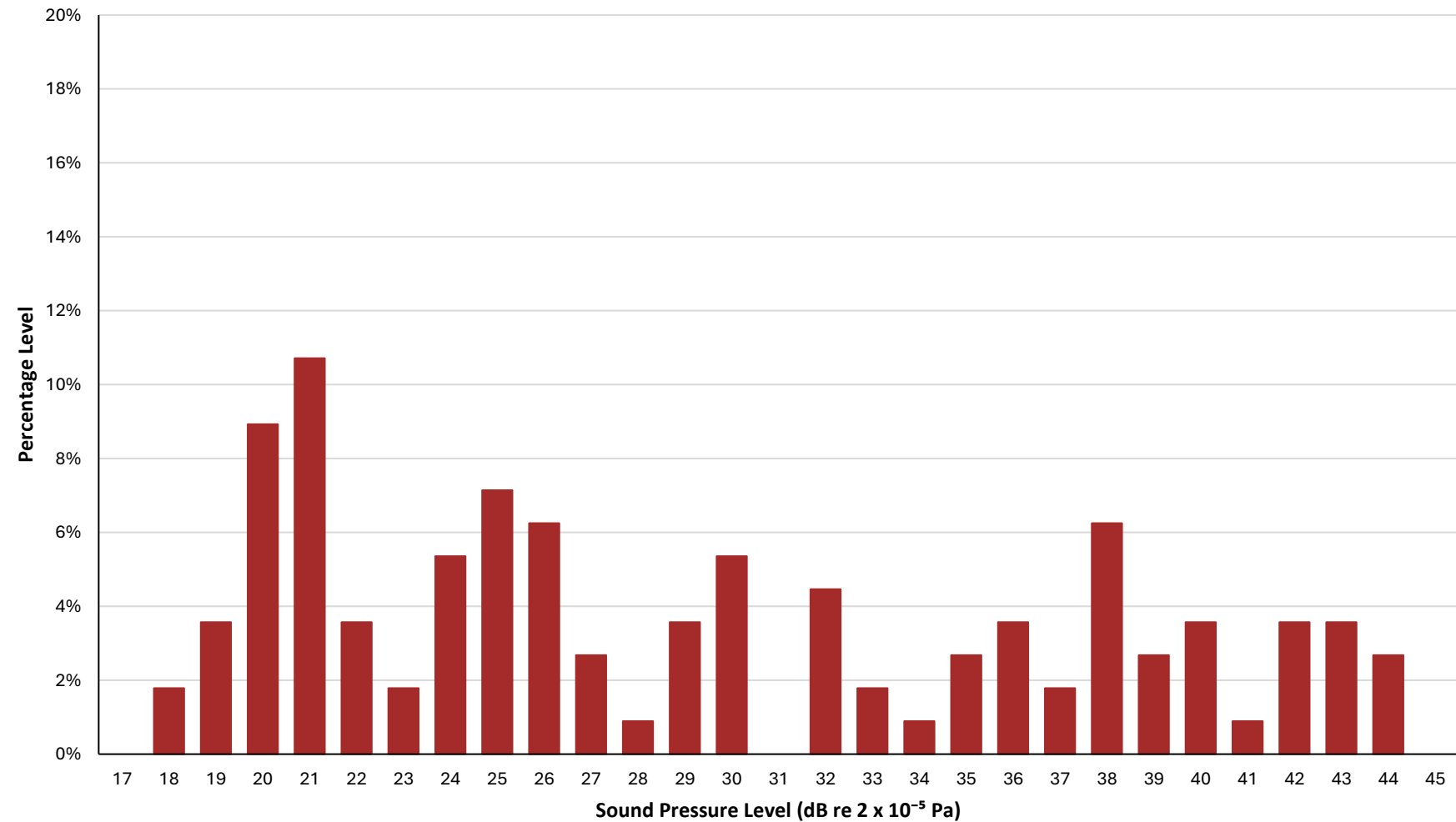


A.7 Parcel Group 7

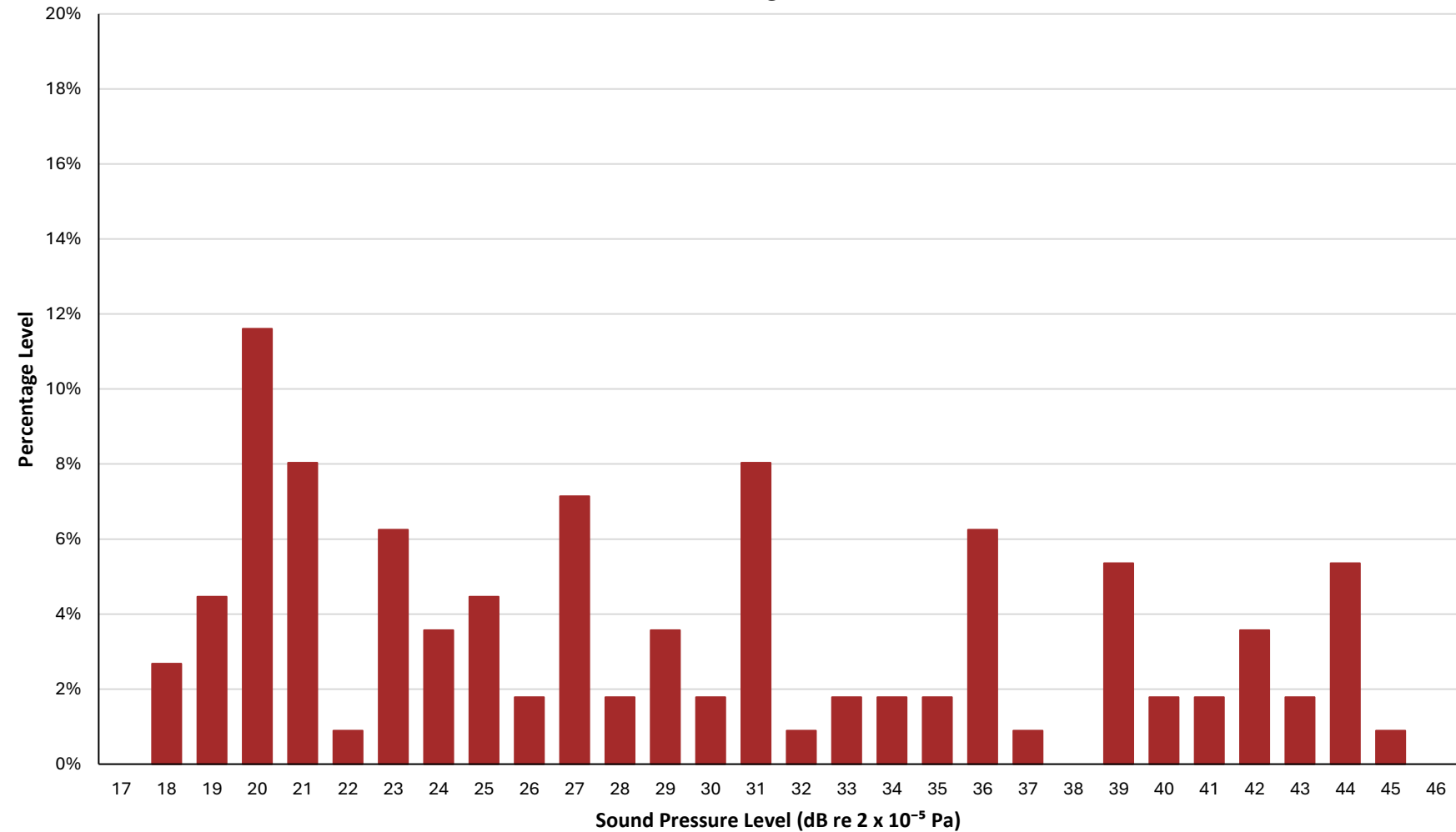
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP14



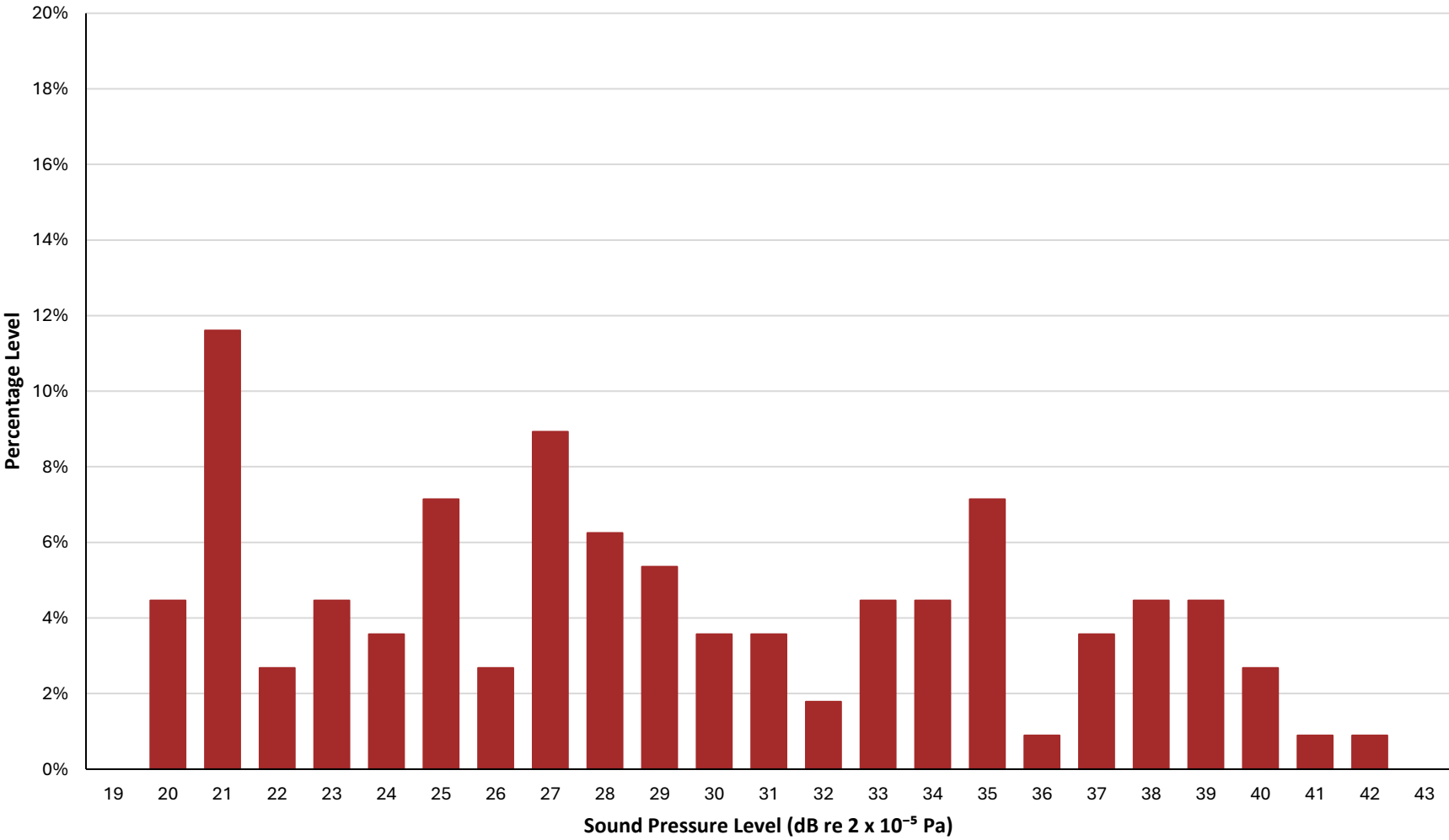
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP15



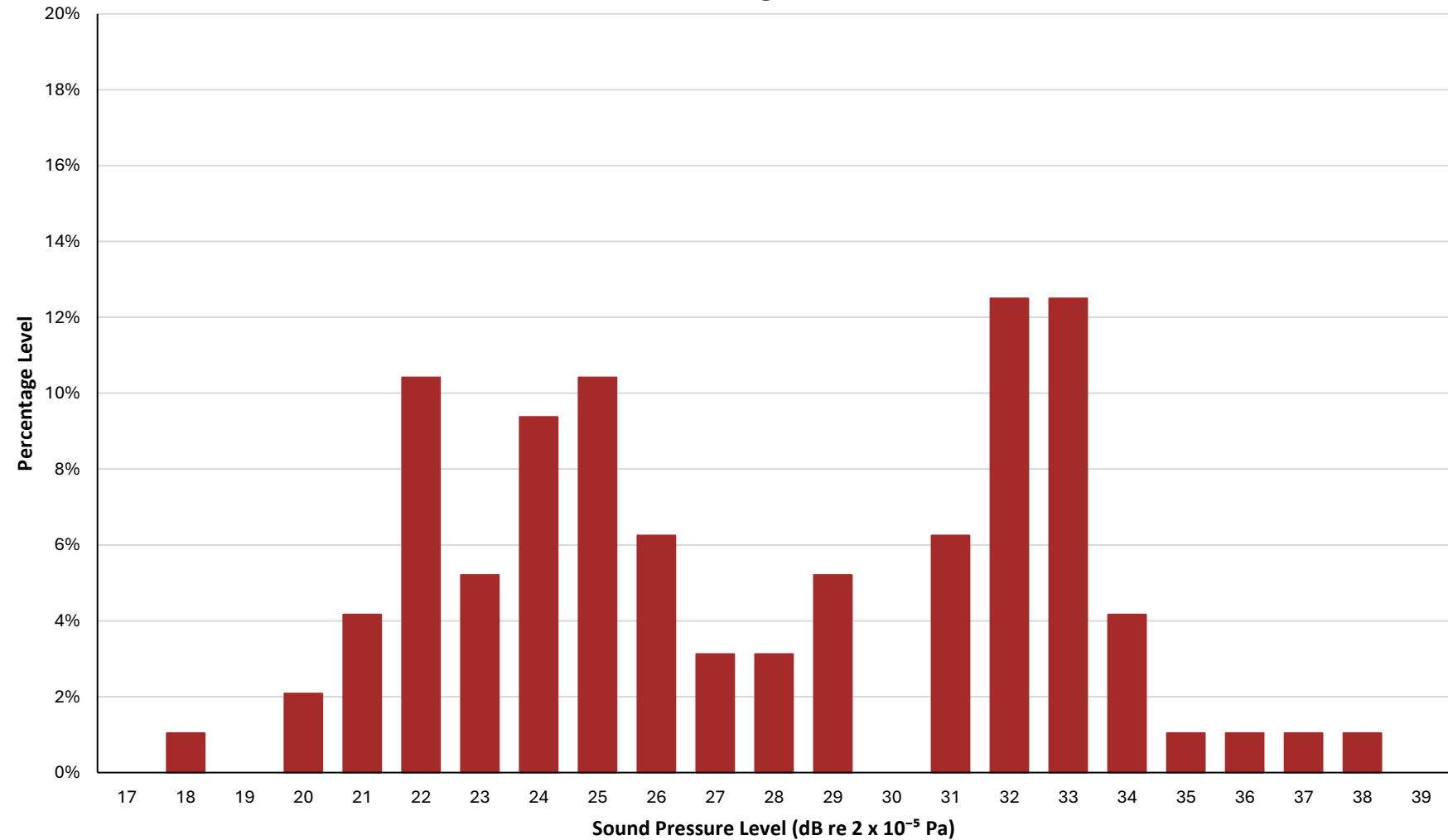
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP16



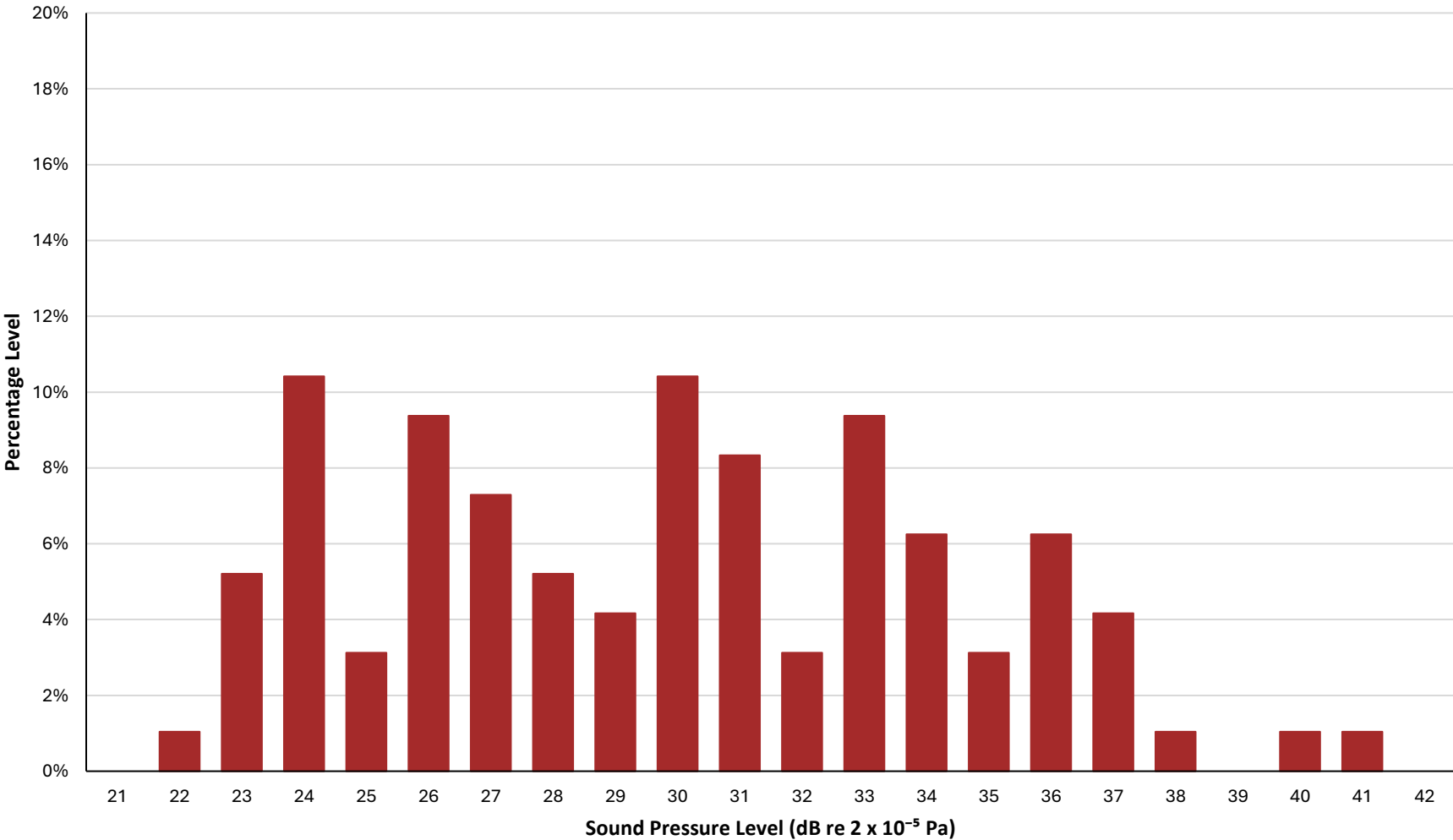
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP17



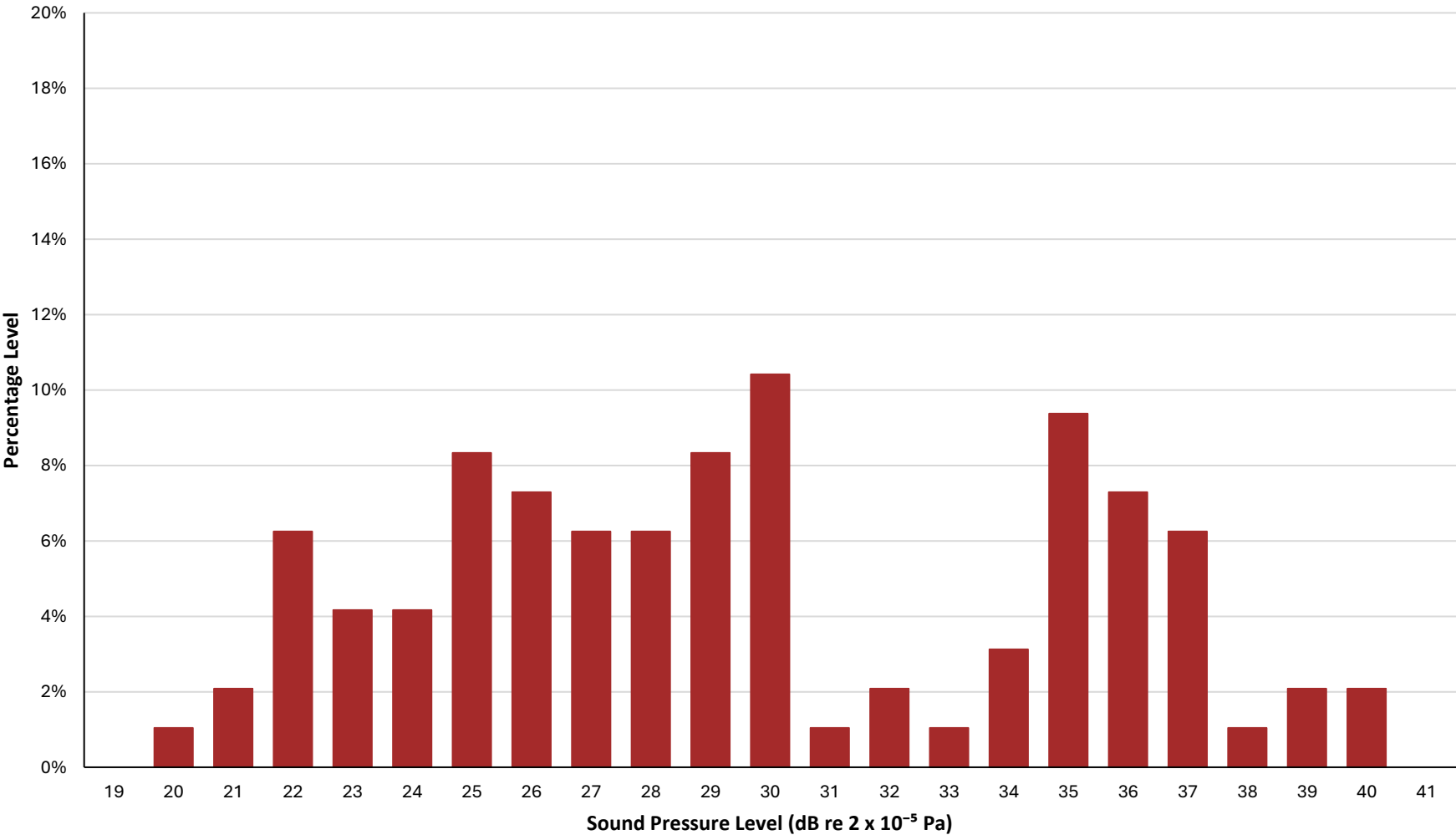
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP19



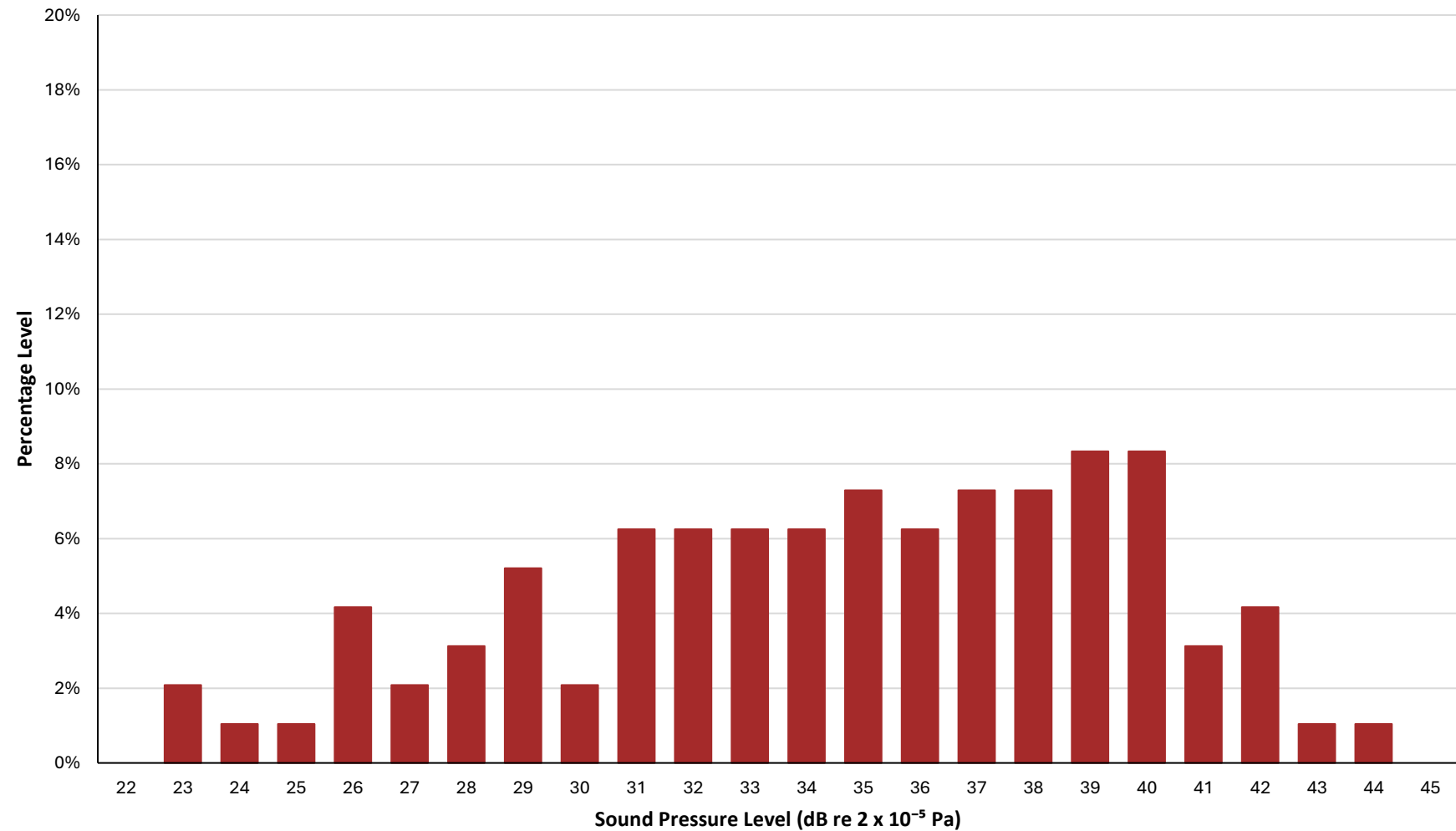
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP20



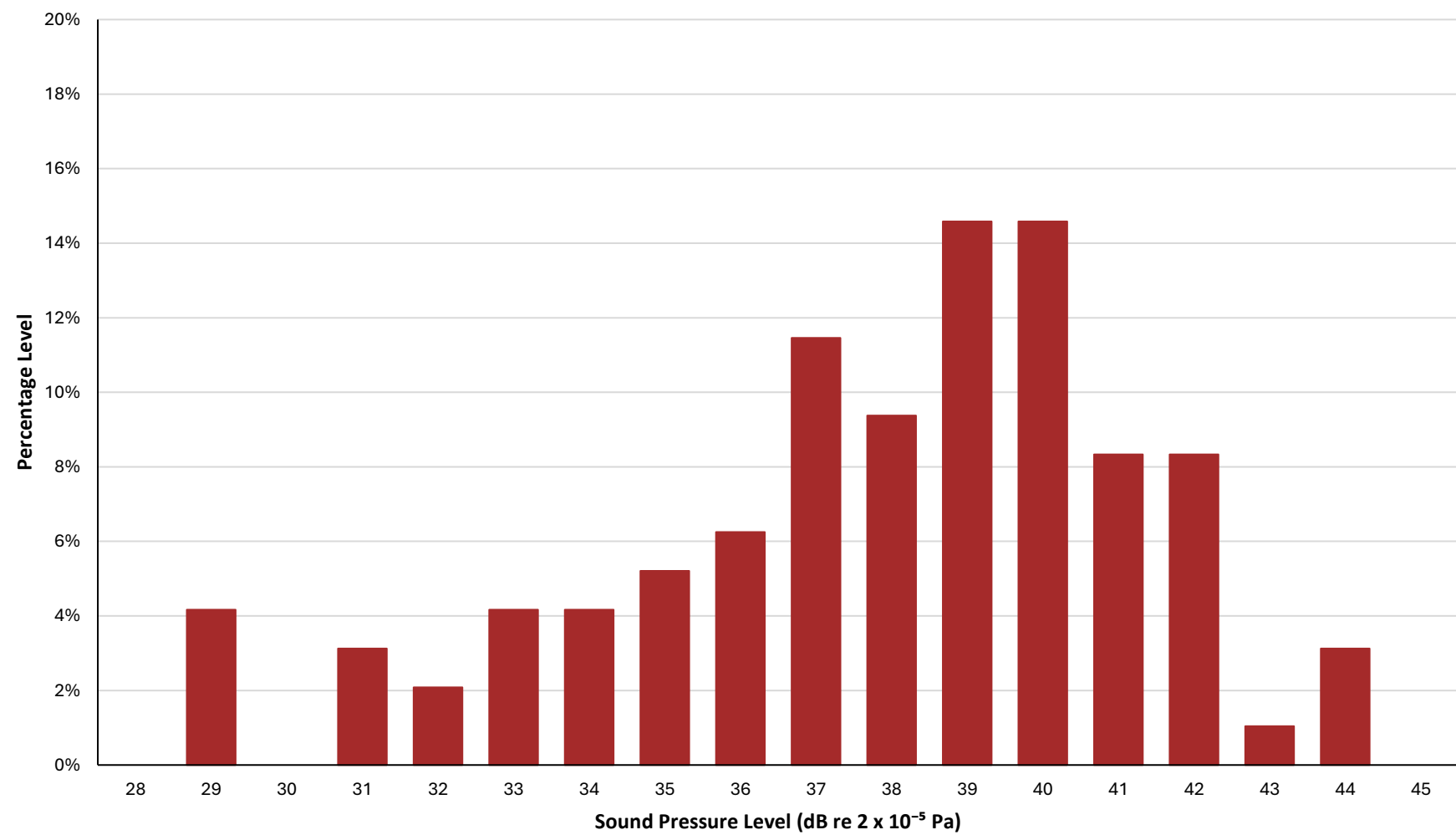
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP21



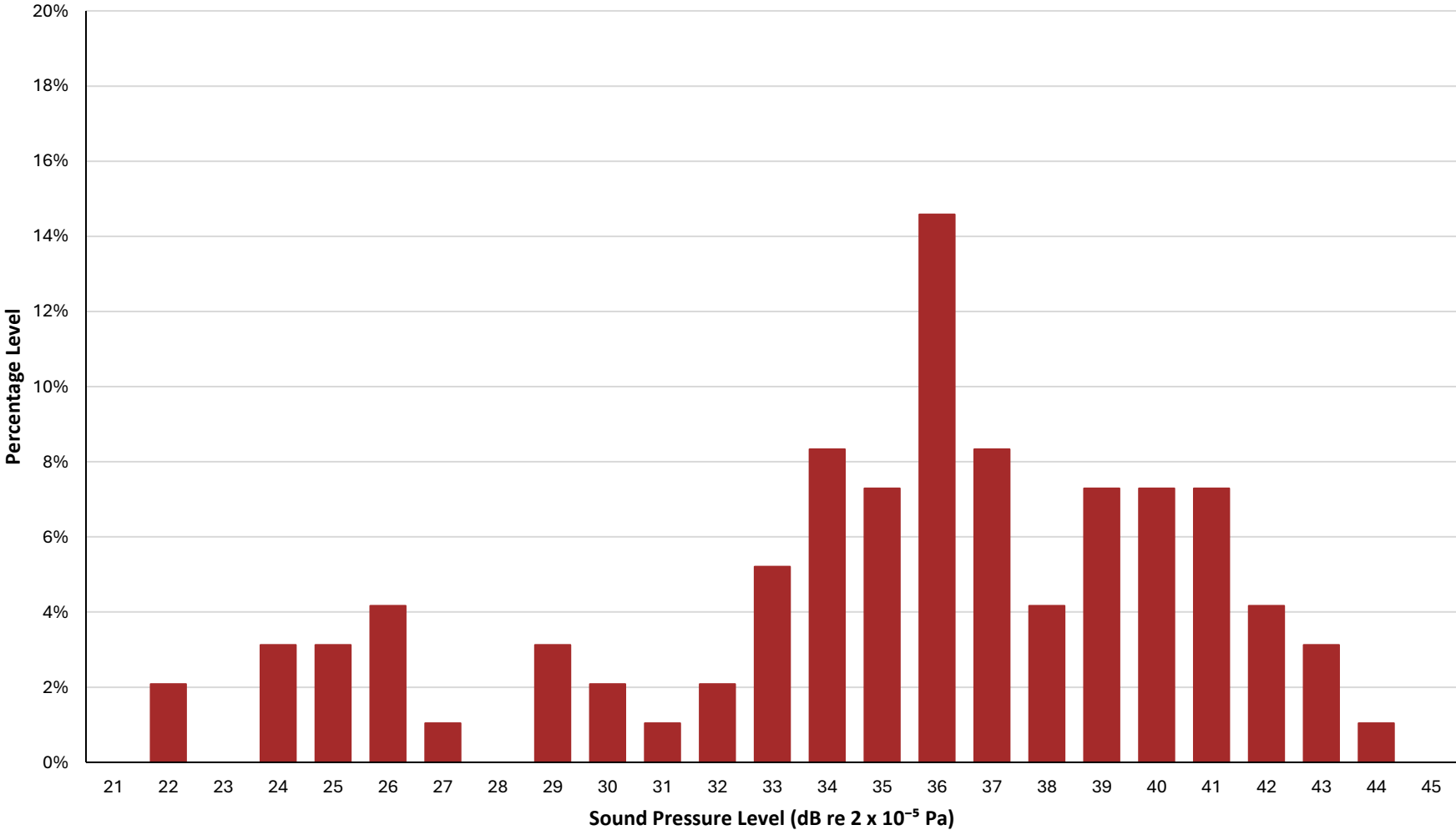
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP22



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP23

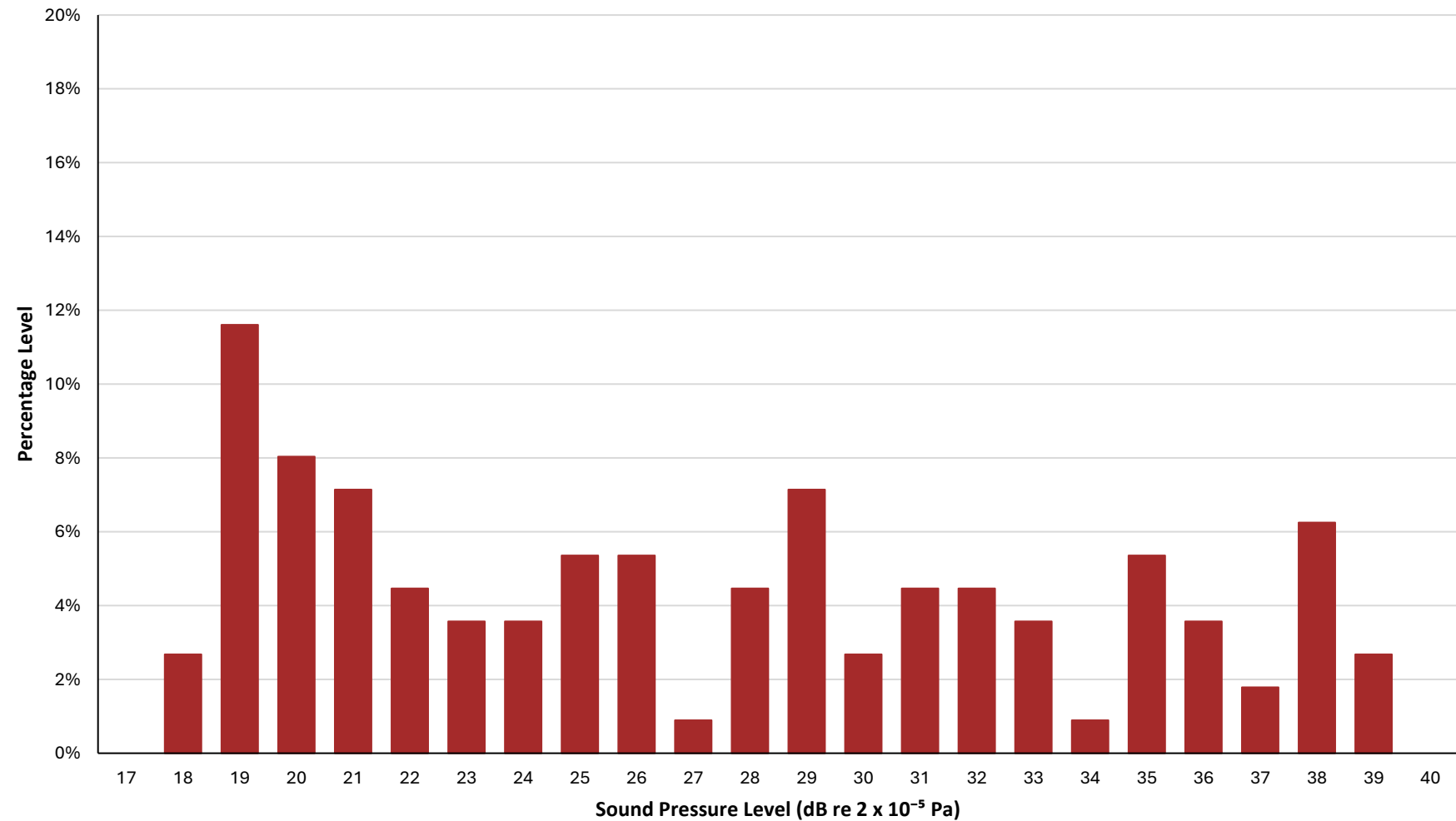


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP24

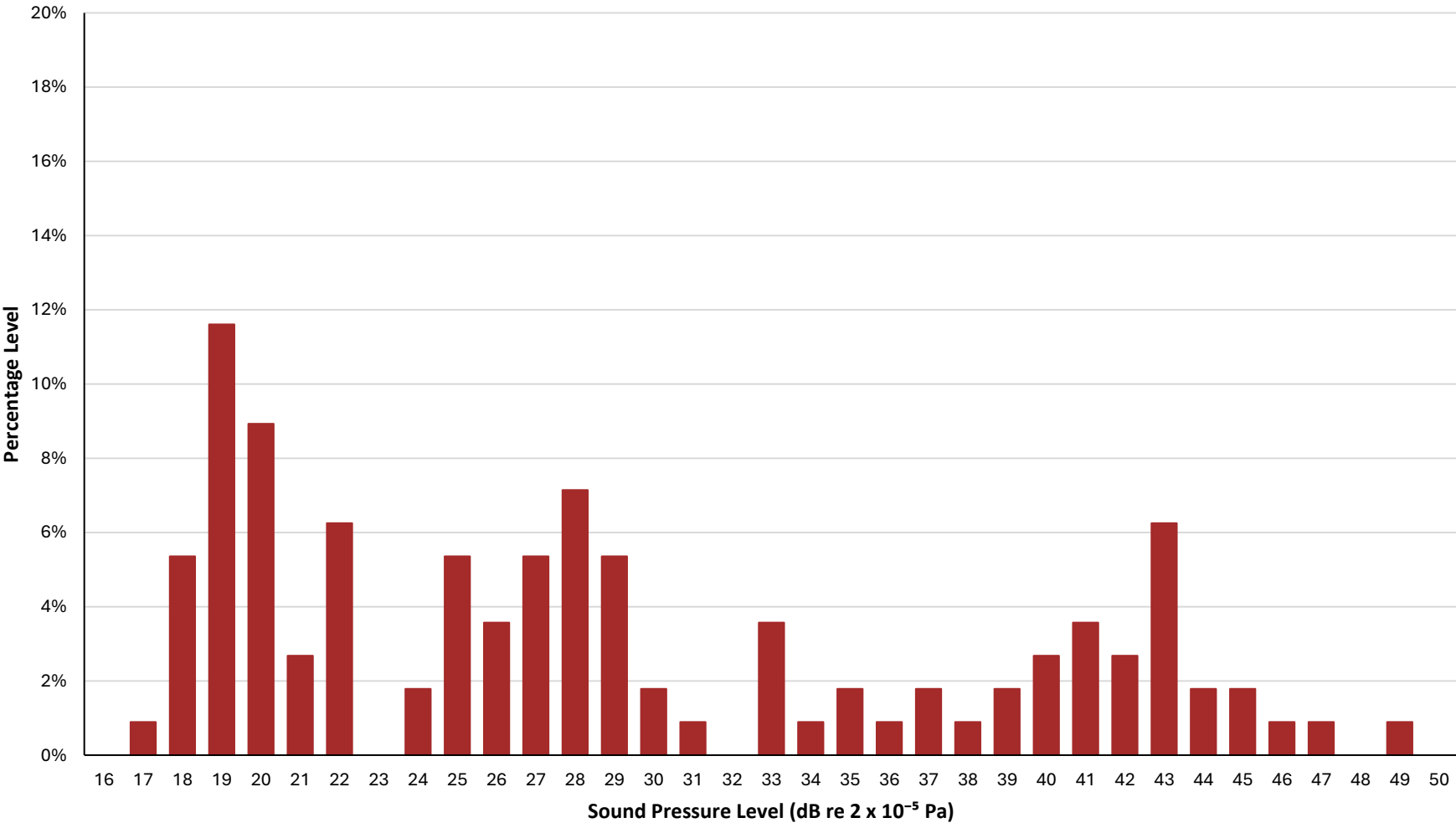


A.8 Parcel Group 8

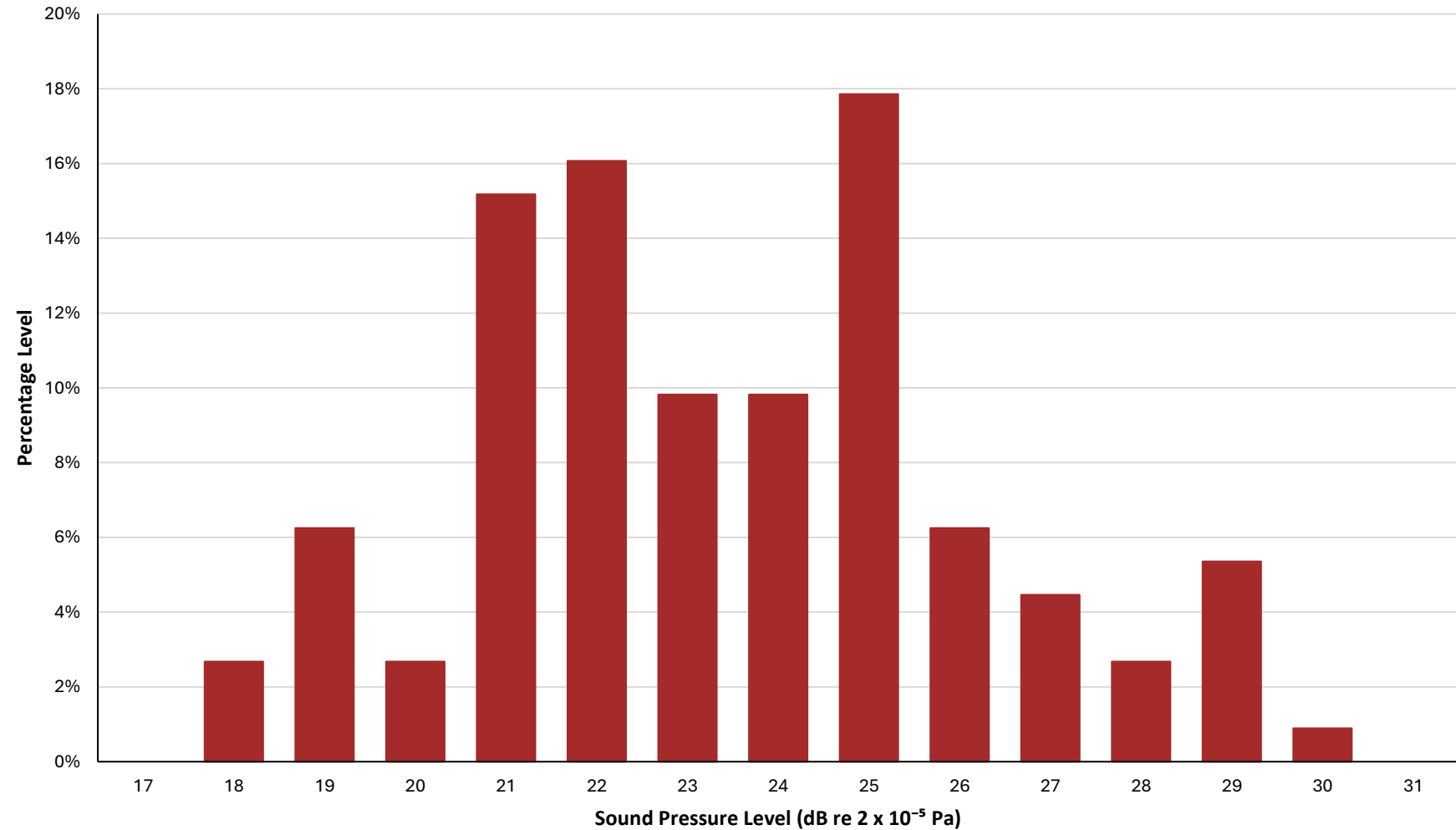
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP10



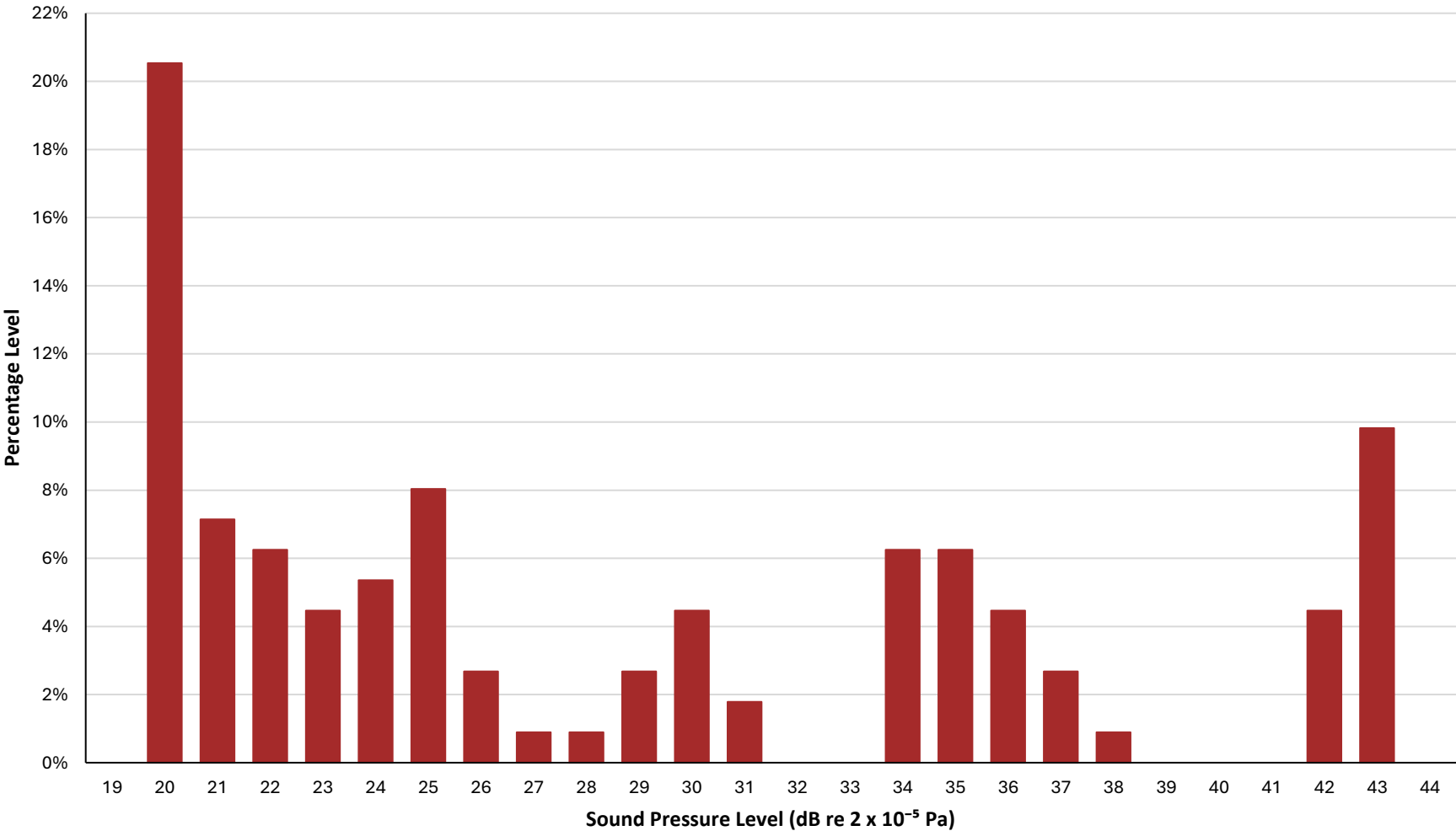
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP11



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP12

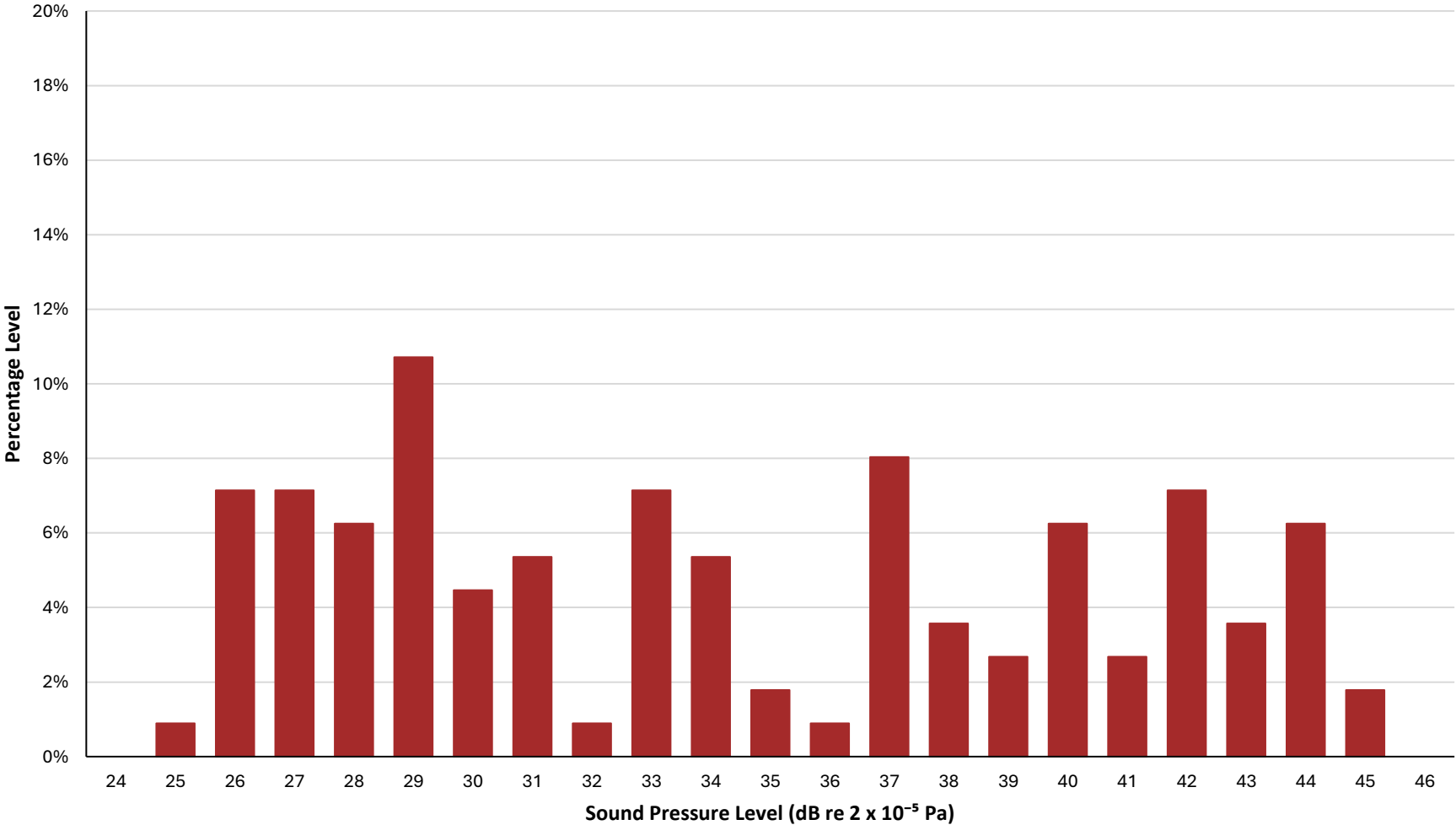


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP13

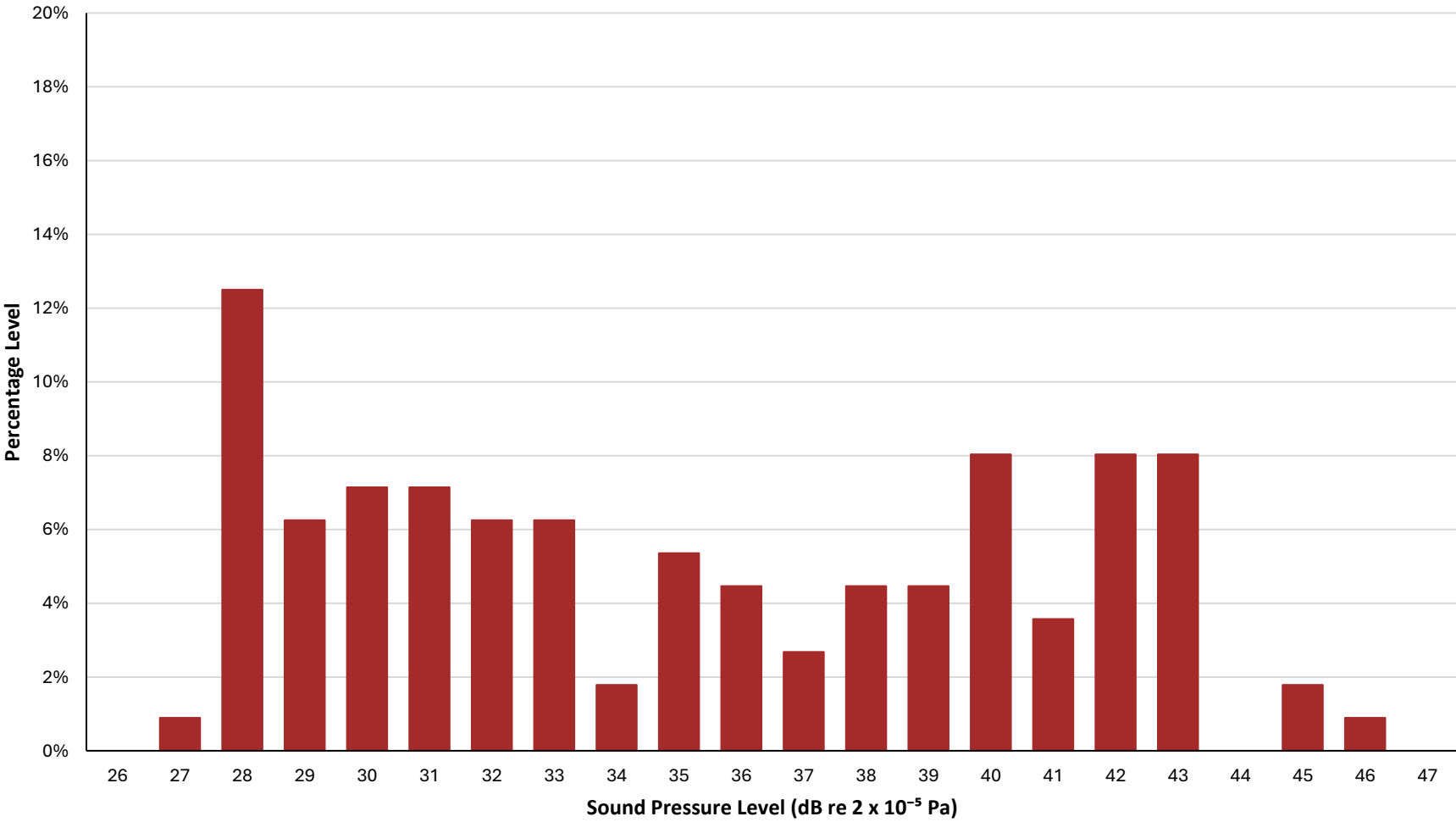


A.9 Parcel Group 9

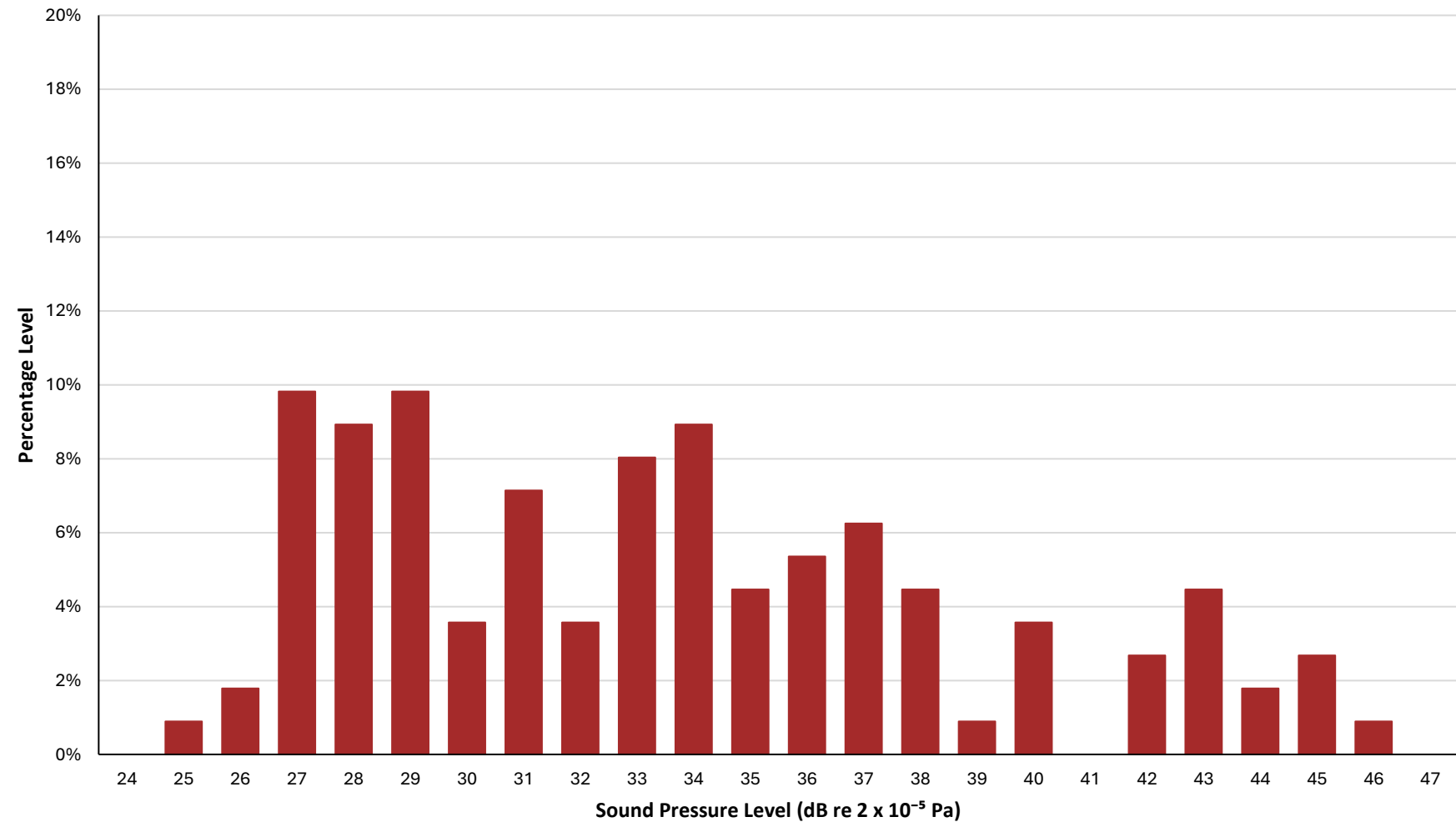
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP6



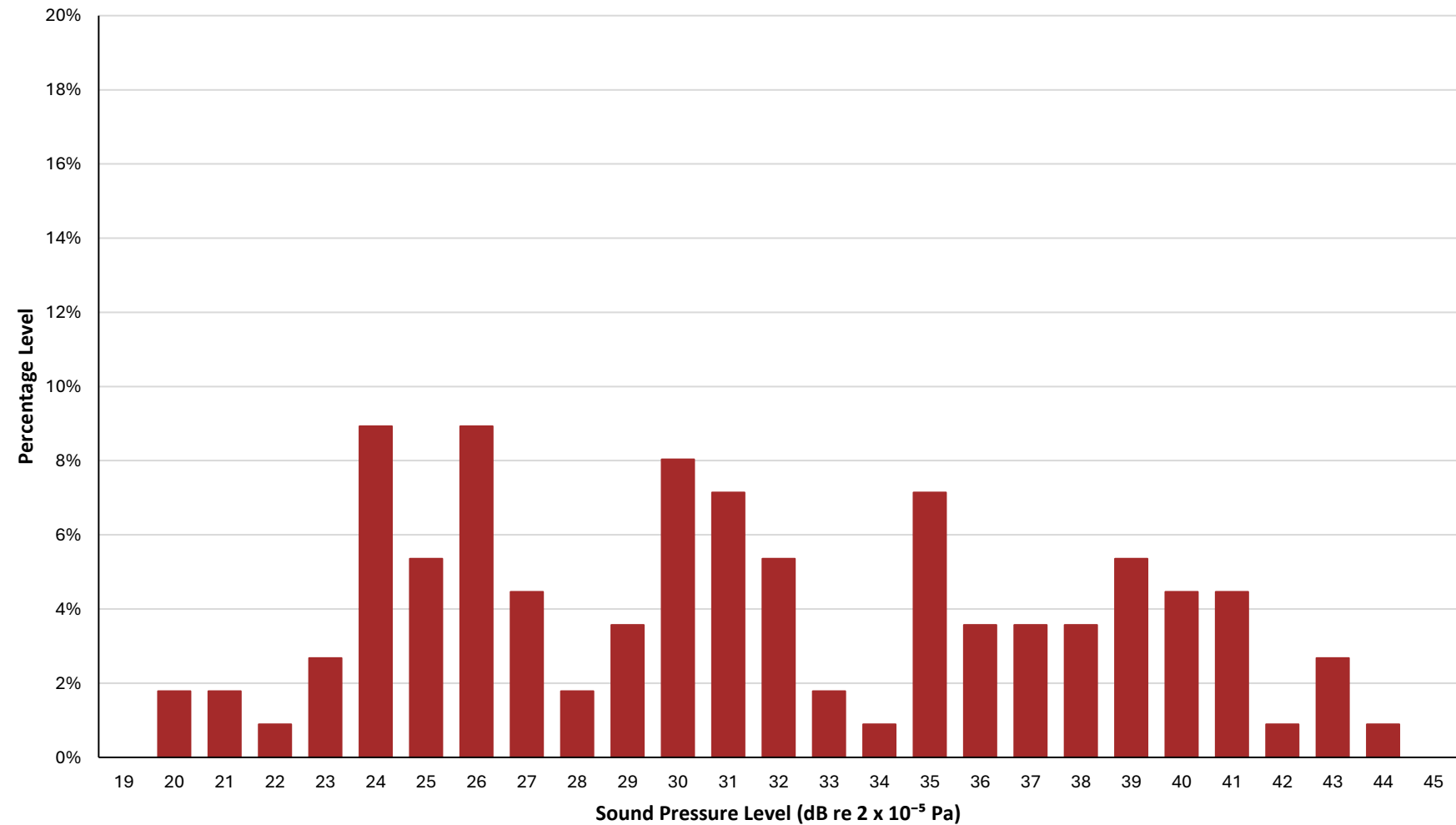
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP7



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP8

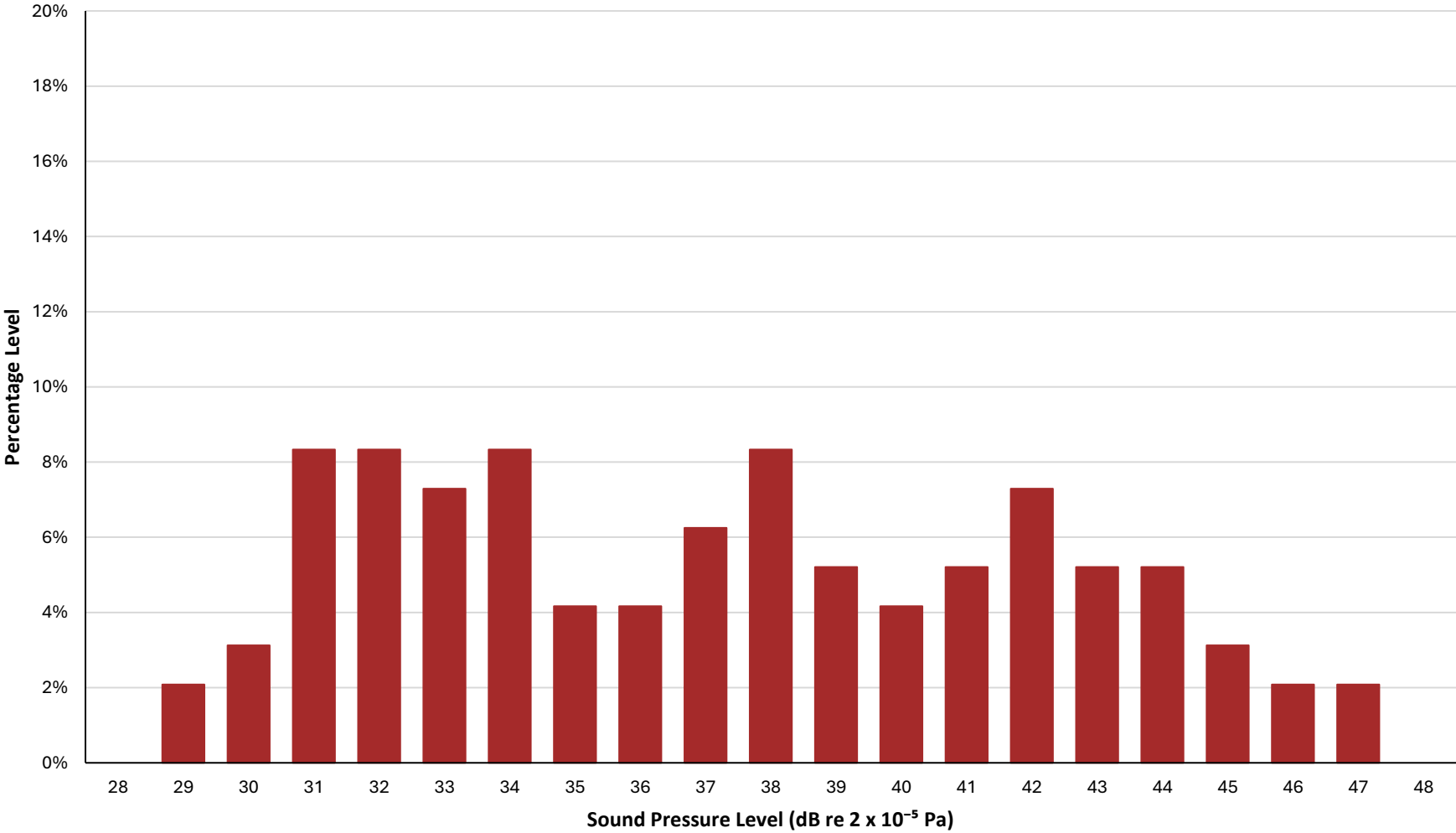


East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP9

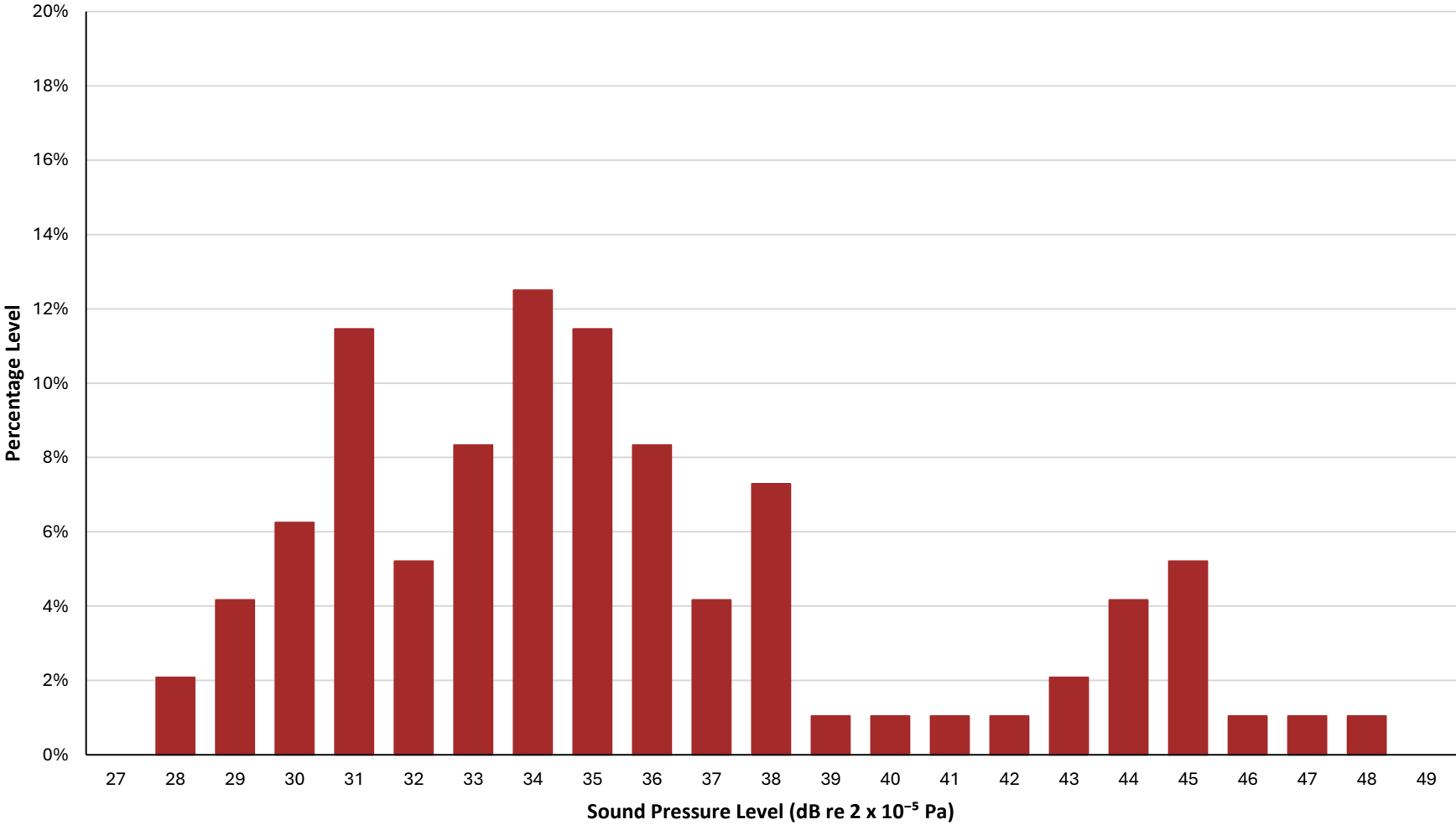


A.10 Parcel Group 10

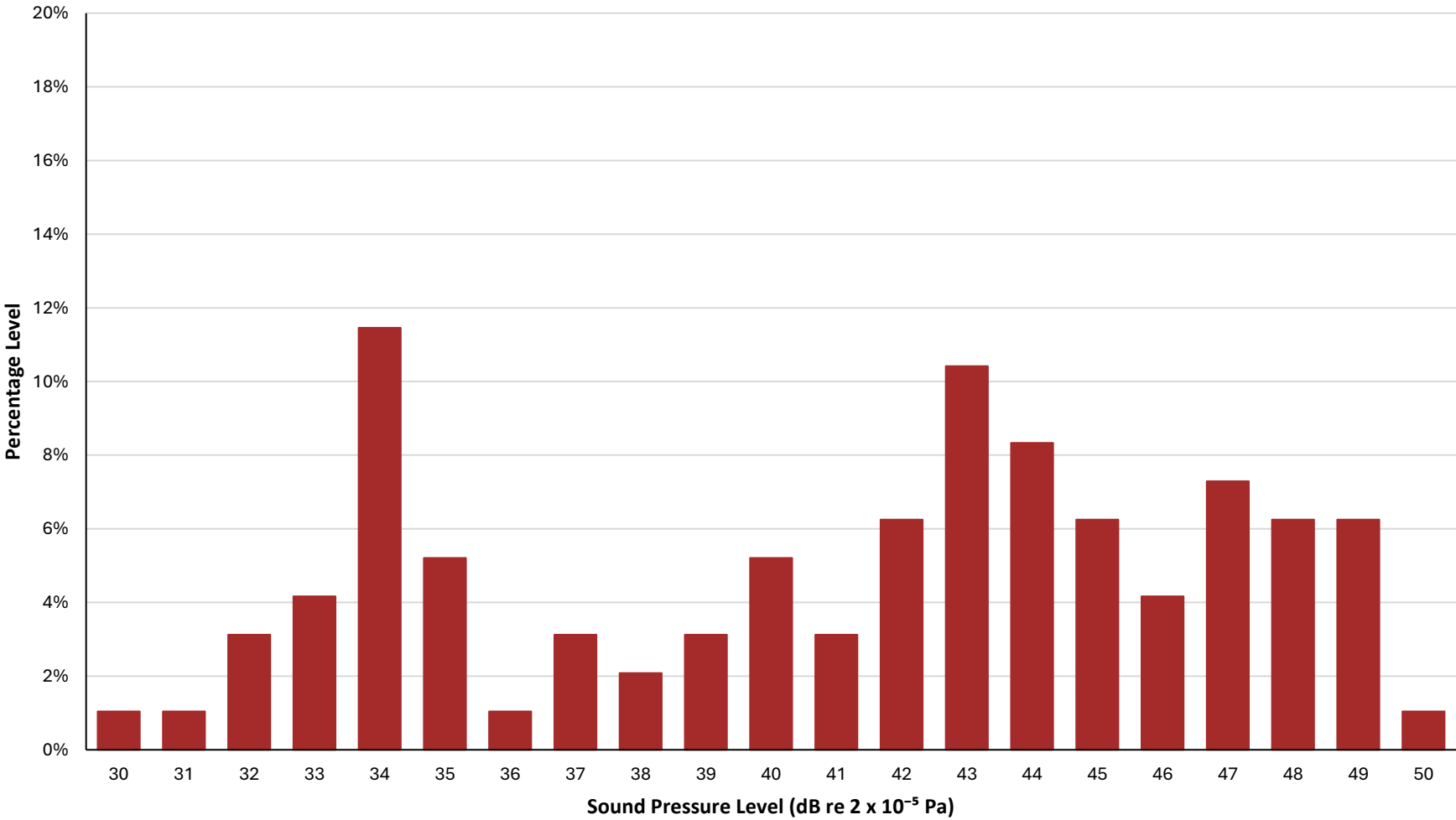
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP1



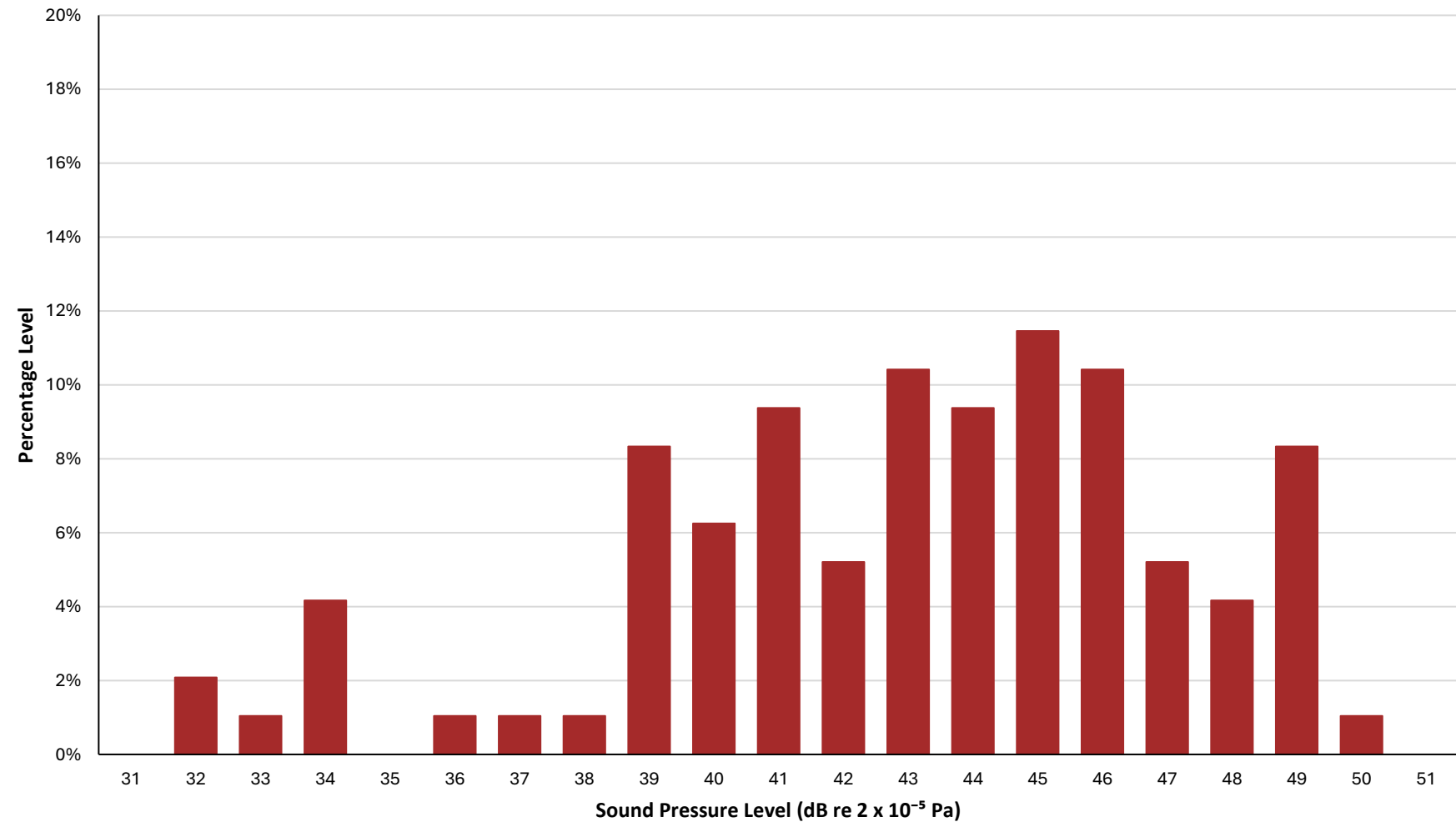
East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP2



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP3



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP4



East Pye Solar
 $L_{A90,15\text{minutes}}$ Evening Period Histogram
MP5

