

European Energy

June 2026

Public

Gippsland BESS

Noise Impact Assessment

wsp

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Gippsland BESS Noise Impact Assessment

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Rev	Date	Details
01	30/01/2026	Draft issue
02	02/04/2026	Issue
03	19/6/2026	Updated cumulative noise assessment

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Approved by:	Tim Ryan	19/6/2026	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Appendix A Noise Monitoring Results

Appendix B Victorian EPA

Glossary

Term	Definition / description
Decibel, dB	The decibel (dB) is a logarithmic scale that allows a wide range of sound pressures to be represented in a more comprehensible range, typically 0 dB to 120 dB. The decibel is ten times the logarithm of the ratio of sound energy (i.e. power squared or pressure squared) relative to a reference level squared. The reference level for sound pressure is typically 20 μ Pa which is the approximate threshold of human hearing.
Decibel (A-weighted), dBA	A-weighting was devised to attempt to account for human response to sound not being equally sensitive at all frequencies; it consists of an electronic filter in a sound level meter, which attempts to build in this variability into the indicated noise level reading so that it will correlate, approximately, with human response.
Equivalent Continuous Sound Level, $L_{eq,T}$	Many sounds, such as road traffic noise or construction noise, vary repeatedly in level over a given time period. $L_{eq,T}$ is the equivalent continuous sound level over a given time period (T). It is often referred to as the 'average' level.
Sound Power Level, L_w or SWL	The Sound Power Level is the inherent noise of the source and is the total power radiated by the source, in dB. Sound Power Level does not vary with distance from the noise source or within a different acoustic environment.
Sound Pressure Level, L_p or SPL	The Sound Pressure Level of a source, in dB, varies with distance from the noise source and with the environment in which it is located.
Statistical Noise Levels, L_n (L_{90} , L_{10} , L_{50} , etc.)	The noise level that is exceeded for the stated percentage of the noise measurement period. For example, L_{90} is the noise level that is exceeded for 90% of the noise measurement period. L_{90} is commonly referred to as the 'background' noise level. L_{10} is commonly referred to the 'intrusive' noise level. L_1 may refer to the 'average maximum' noise level.
L_{max}	L_{max} is the absolute maximum sound level recorded over the measurement period.

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Executive summary

European Energy (EE) are proposing to develop the Gippsland Battery Energy Storage System (the Project), located between 30 Church Road and 545 Tramway Road, Hazelwood North 3840, Victoria. The Project is known to be adjacent to several operational power generation and electrical infrastructure facilities, including Hazlewood Terminal Station, Hazlewood BESS and Jeeralang Power Station.

Noise from the Project is required to comply with the General Environmental Duty (GED) under the Environment Protection Act 2017 and must not result in unreasonable noise as prescribed under the Environment Protection Regulations 2021. Operational noise emissions have therefore been assessed in accordance with EPA Victoria Publication 1826.5, *Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues* (EPA 1826). In addition, cumulative noise impacts associated with the Project, in combination with Commercial, Industrial and Trade (CIT) premises identified nearby the Project (operational and those under construction), must be assessed under Regulation 119 of the Environment Protection Regulations 2021.

Noise monitoring data had previously been captured near the Project area in March 2021 by JTA consultants and adopted for the Noise Impact Assessments (NIA) of Wooreen BESS¹ and the initial NIA for Tramway BESS² (Initial title of Project), respectively. WSP have updated this data, undertaking background noise surveys in early 2026 for the Project, to establish current baseline acoustic conditions and determine operational noise criteria in accordance with current legislation (which was not enforced at the time of the 2021 surveys).

The assessment applies noise criteria based on WSP's recent monitoring of the existing noise environment and includes the applicability of any tonal penalties when finalising the Project's noise limits and obligations to address cumulative noise.

The Project is predicted to comply with the applicable EPA Publication 1826 noise limits at all identified Noise Sensitive Areas (NSAs) on a standalone basis, with practicable and reasonable mitigation measures incorporated into the design. This includes source noise controls, BESS Unit fan duty controls and Inverter Attenuation Kit.

The cumulative noise assessment, incorporating surrounding operational and under-construction CIT premises, similarly predicts compliance at all identified NSAs based on currently available information and inclusion of all feasible and reasonable noise control measures. This includes source noise controls, BESS Unit fan duty controls, BESS Unit Sound Covers and Inverter Attenuation Kit.

The Project has also considered additional feasible and practicable measures to further reduce its contribution to cumulative noise (including conceptual noise barriers); however, the preliminary assessment indicates negligible benefit.

A broader risk review of cumulative noise was undertaken for information only, including other identified CIT premises with planning approval but not yet constructed. This review indicates that cumulative exceedances at some NSAs may occur even without the Project, highlighting that cumulative outcomes are dependent on the actual noise emissions from surrounding sites and are inherently uncertain at the planning stage.

In this context, it is appropriate that the noise control measures requirements in this assessment remain subject to refinement through pre-construction verification and detailed design.

To manage the potential risks with respect to cumulative noise for future CIT premises as previously discussed, the proponent must undertake pre-construction verification measurements and incorporate the outcomes into detailed design. Operational verification and additional practicable and reasonable mitigation measures will be implemented where required to ensure compliance with EPA obligations.

¹ Wooreen Battery Energy Storage System Noise Impact Assessment, Aurecon, dated 14 July 2022 (Ref: P511147 – Rev 4).

² Tramway BESS Environmental Noise Assessment, Resonate, M240258RP2 Rev 0, June 2024)

1 Introduction

WSP has been engaged to carry out a noise impact assessment for the proposed Gippsland Battery Energy Storage System (the Project), to be installed adjacent to the Woreen BESS, Hazlewood Terminal Station and Jeeralang Power Station, near Hazelwood in Victoria.

The Project must comply with the General Environmental Duty (GED) under the Environment Protection Act 2017 and must not result in unreasonable noise as prescribed under the Environment Protection Regulations 2021. Operational noise emissions have therefore been assessed in accordance with EPA Victoria Publication 1826.5 (the Noise Protocol).

In addition, cumulative noise impacts associated with the Project, in combination with existing and approved surrounding noise sources, have been assessed in accordance with Regulation 119 of the Environment Protection Regulations 2021. The objective of this study is to assess operational noise emissions from the Project for compliance with the applicable Victorian EPA requirements, thereby supporting EE in meeting its obligations under the GED as required under the Environment Protection Act 2017.

1.1 Reference documentation

This document has been produced with reference to the following documentation:

- BESS Concept Design Layout Rev C drawings, dated 16 January 2026 (Ref: 260553-ELE-LAY-0002_C)
- Basis of Design Report Rev C by Beyond Electrical Engineering, dated 16 January 2026 (Ref: 260553-ELE-REP-0001_C - Basis of Design)
- Tramway BESS Environmental Noise Assessment by Resonate, dated 20 June 2024 (Ref: M240258RP2 Rev 0)
- Latrobe Valley BESS Desktop Noise Impact Assessment by Aurecon, dated 30 March 2021 [ref: Latrobe Valley BESS – Noise Impact Assessment, Revision 3 / Project No. 509891]
- Wooreen Battery Energy Storage System Desktop Noise Impact Assessment by Aurecon, dated 14 July 2022 [ref: P511147, Revision 4]
- Tramway Road BESS Noise Impact Assessment by SLR Consulting Australia, dated 28 April 2025 [ref: 640.031244.00001-R01-v1.1]
- Bennetts Creek Battery Energy Storage System Noise Assessment Report by Aurecon, dated 19 June 2023 [ref: Bennetts Creek BESS Noise assessment_20230616, Revision 2 / Project No. 522094]
- Hazelwood North Solar Farm Noise Impact Assessment by SLR Consulting Australia Pty Ltd, dated 30 June 2023 [ref: 640.30523.00000, Revision 1.0 / Client Reference No. R01]
- Morwell BESS Facility Acoustic Report by Renzo Tonin & Associates Pty Ltd, dated 18 September 2025 [ref: MD150-02F01 Acoustic Report (r7)]

1.2 Project description and location

The Project site is located between 30 Church Road and 545 Tramway Road, Hazelwood North 3840, Victoria, northwest of Hazelwood in Latrobe City Council. The Project comprises of:

- 336x EnerC+306 BESS units,
- 168x SMA SCS 4600 UP-S Central Battery Inverters at each cluster of BESS units
- 2x 600 MVA 33/220 kV transformers
- 8x 2MVA kiosk transformers
- 4x harmonic filters.

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Figure 1.1 shows an aerial view of the Project site, the proposed layout, noise monitoring locations (refer Section 2) and surrounding area. Figure 1.2 shows an aerial view of the Project site in the context of surrounding CIT premises.

- The following are the nearest Noise Sensitive Areas (NSAs) within 2000m of the Project site:
 - R1: 30 Church Rd, Hazelwood North
 - R2: 90 Church Rd, Hazelwood North
 - R3: 92 Church Rd, Hazelwood North
 - R4: 545 Tramway Rd, Hazelwood North - Associated landowner of Morwell Solar Farm ³
 - R5: 130 Church Rd, Hazelwood North

1.3 Other Energy Facilities

- Other energy facilities in the area, including:
 - Hazelwood Terminal Station (**Operational**)
 - Jeeralang Gas and Terminal Station (**Operational**)
 - Hazelwood BESS (**Operational**)
 - Latrobe Valley BESS (**Operational**)
 - Woreen BESS (**Approved, under construction**)
 - Marinus Link Switching Station (Approved, not constructed)
 - Tramway Road BESS (Approved, not constructed)
 - Bennetts Creek BESS (Approved, not constructed)
 - Hazelwood North Solar Farm (Approved, not constructed)
 - Morwell BESS (Approved, not constructed)
- Other CIT premises in operation in the area, including Parkside Timber and Latrobe Magnesium Demonstration Plant.

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³ Morwell Solar Farm Acoustic Report by Renzo Tonin & Associates, dated 27 July 2020 [ref: MD150-01F01 Acoustic Report (r4)]

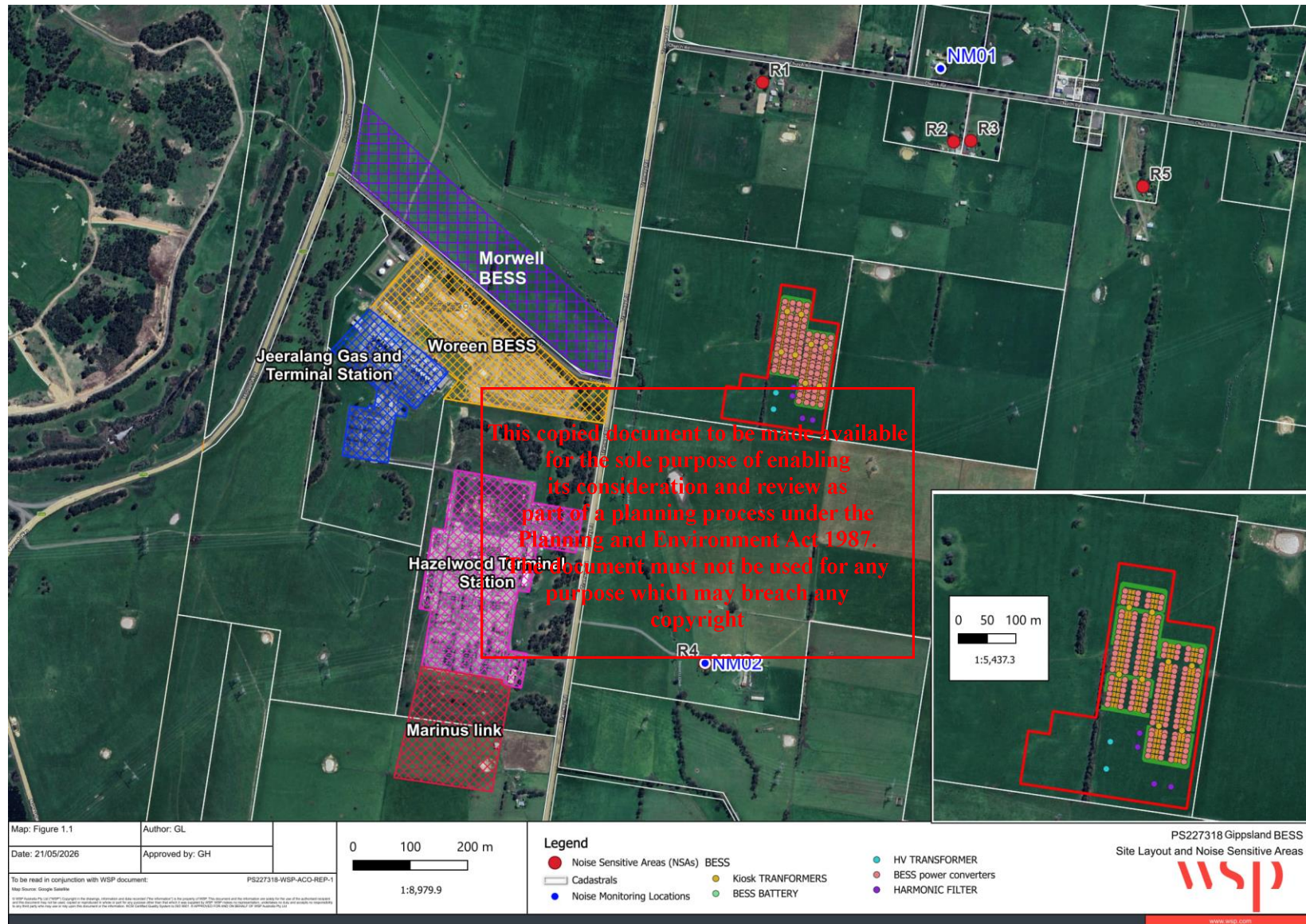


Figure 1.1 Site overview

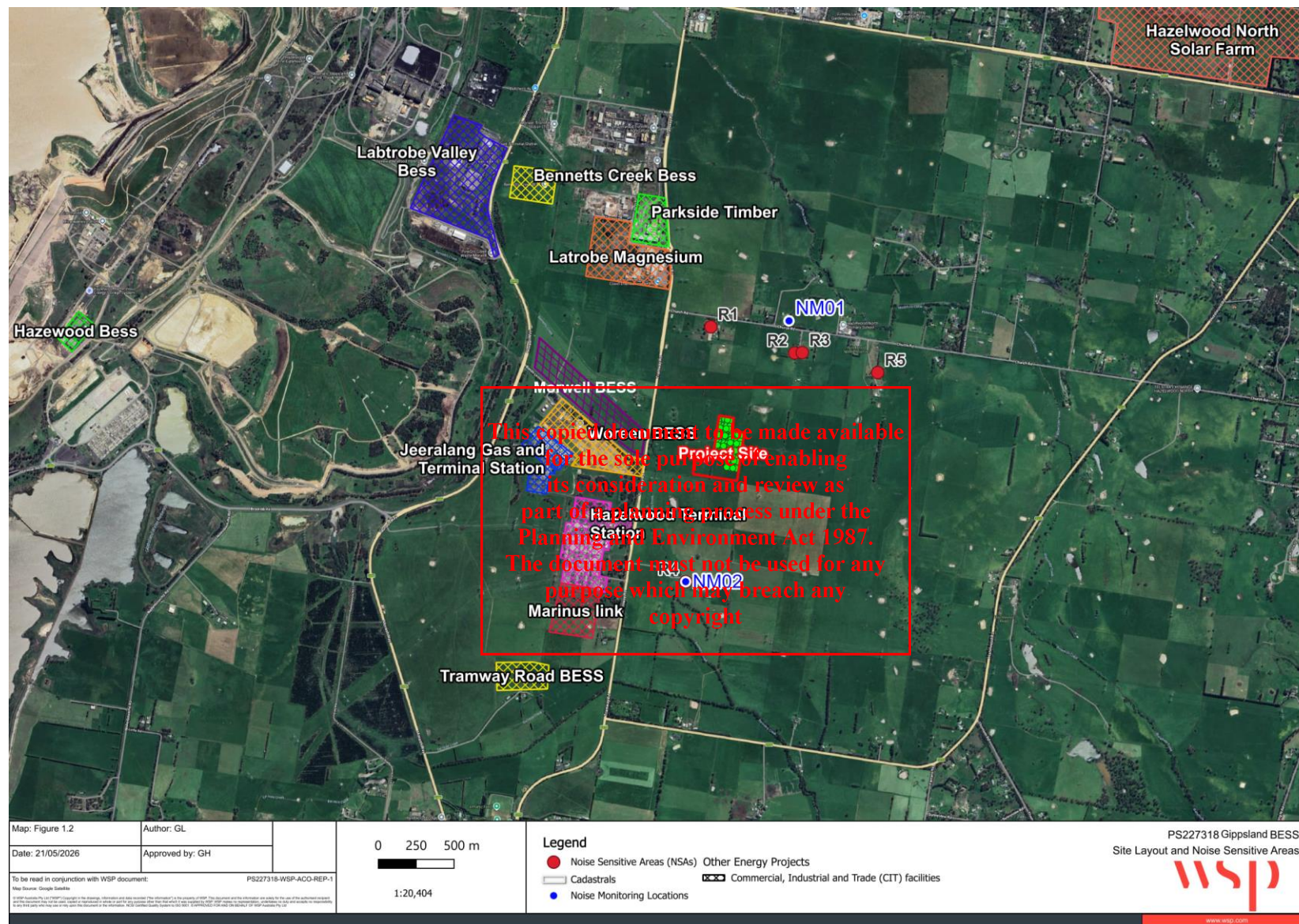


Figure 1.2 Site overview and surrounding CITs

2 Existing Noise Environment

This section presents a summary of the existing noise environment at the Project site, based on WSP's noise survey undertaken in January–February 2026. Information on previous monitoring undertaken by JTA Acoustic Consultants (March 2021) and subsequently used by Resonate Consultants (Tramway BESS Project Environmental Noise Assessment, M240258RP2 Rev 0, June 2024) is provided for context.

During WSP's deployment of noise monitoring equipment, the background noise environment was observed to be primarily driven by road traffic noise from Tramway Road. During lulls in traffic noise, nature sounds consisting primarily of trees rustling, bird and insects were audible. No noise was audible from either deployment location from surrounding CIT premises, validating the locations were appropriate for monitoring background noise in accordance with EPA guidelines (refer Section 2.1.1). Closer inspection was taken physically after noise monitors were deployed, confirming that both the Hazelwood Terminal Station and Woreen BESS construction site were emitting noise in the nearfield, all of which was inaudible at the two monitoring locations.

A summary of observations from surrounding CITs is provided below:

- **Woreen BESS (under construction):**
 - Currently under construction. Construction activity inaudible during attended site visits at noise monitoring locations – representative of nearest affected NSAs.
- **Hazelwood Terminal Station and Jeeralang Power Station (in operation):**
 - In operation during survey noise logger deployment, emitting a low frequency humming noise (assumed to be from transformers on site) (this is copied to a document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright)
 - Inaudible at noise monitoring locations – representative of nearest affected NSAs.
- **Parkside Timber (in operation):**
 - Understood to be in operation during survey noise logger deployment.
 - Inaudible at noise monitoring locations – representative of nearest affected NSAs.
- **Latrobe Magnesium Demonstration Plant (in operation):**
 - Understood to be in operation during survey noise logger deployment.
 - Inaudible at noise monitoring locations – representative of nearest affected NSAs.
- **Hazelwood BESS (in operation):**
 - Understood to be in operation during survey noise logger deployment.
 - Inaudible at noise monitoring locations – representative of nearest affected NSAs.
- **Latrobe Valley BESS (in operation):**
 - Understood to be in operation during survey noise logger deployment.
 - Inaudible at noise monitoring locations – representative of nearest affected NSAs

2.1 Unattended Noise monitoring

WSP undertook unattended noise monitoring between 30 January to 13 February 2026 to validate the initial monitoring completed in March 2021. It was deemed necessary to re-establish Project background noise levels in accordance with current Legislation as the monitoring undertaken by JTA was completed over five years ago with changes in legislation and data acquisition method occurring as of July 2021.

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2.1.1 Locations

Two noise monitoring locations were chosen to characterise the existing noise environment at the nearest sensitive areas as follows:

- **NM01** – 79 Church Rd, Hazelwood North
- **NM02** – 545 Tramway Rd, Hazelwood North

These two noise monitoring locations are shown in Figure 1.1.

2.2 Methodology

The prevailing background and ambient noise levels surrounding the site were determined through a combination of unattended and operator attended noise surveys in accordance with the following publications:

- EPA 1826.5 - *Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues* (EPA 1826)
- EPA 1997 *Technical guide: Measuring and analysing industry noise and music noise* (EPA 1997).

2.3 Instrumentation and quality control

The monitoring equipment was fitted with windshields and field calibrated before and after monitoring. No significant drifts in calibration (± 0.5 dB) were noted. The monitoring equipment has current certified calibration certificates (National Association of Testing Authorities (NATA)) at the time of use. Details of equipment used to conduct the noise survey are presented in Table 2.1. Copies of the calibration certificates were provided upon request.

Table 2.1 Noise monitoring equipment

Location	Survey Method	Manufacturer and Model No.	Serial No.
NM01	Unattended measurement	Rion NL-42	510112
NM02	Unattended measurement	Rion NL-55	730380
NM01 and NM02	Calibrator	Rion NC-75	34534927

2.4 Unattended noise survey (Year 2026)

Unattended noise monitoring was carried out by WSP between 30 January 2026 and 13 February 2026 at NM01 and NM02, to capture background noise levels in the vicinity of the proposed facility. During deployment and collection of both noise loggers, there was no audible noise generated from surrounding industry.

Analysis of the BoM's 30-minute weather data for Morwell during the monitoring period indicated that conditions were generally dry during the first week of measurements with only one day affected by high winds (greater than 5 m/s) and rain. The second week was largely affected by adverse weather, and specific monitoring periods have been excluded from the assessment as appropriate.

Location NM01 was situated 1m from an acoustically reflective surface and an arithmetic correction for this has been included to account for this and approximate a "free-field" representation of the noise levels measured.

Detailed unattended noise survey results are presented in Appendix A.

In accordance with EPA 1997, measurements should capture the lowest period averaged background noise levels for day evening and night to establish noise limits. The results from the monitoring are summarised in Table 2.2.

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Table 2.2 Measured lowest period average background noise levels

Location	Measured Lowest Period Average Background Noise Levels L ₉₀ , dBA		
	Day	Evening	Night
NM01	24	23	19
NM02	30	31	30

2.5 Historic unattended noise surveys

Previous background noise monitoring relevant to the initial assessment (by Resonate) of the Project was undertaken by JTA Acoustic Consultants in March 2021 at representative NSAs, locations R1 (30 Church Road) and R4 (545 Tramway Road), in accordance with EPA Noise protocol methodology at the time of measurement. WSP note that this monitoring was done prior to the change in data acquisition method which was brought about in the EPA 1997 methodology (July 2021).

The background noise data captured in March 2021 was adopted for the 2024 environmental noise assessment of the Project by Resonate. Therefore, WSP has since carried out updated measurements under the current EPA 1826 and 1997 methodologies. For reference, the March 2021 background noise monitoring results used as the basis for the previous assessment of this Project and approved Woreen BESS are detailed in Table 2.3. In addition, relevant background noise monitoring results in the vicinity have been provided for information from Morwell Solar Farm and Bennetts Creek BESS in Table 2.4 and Table 2.5.

Table 2.3 Woreen BESS - Background Noise as reported by JTA Acoustic Consultants (March 2021)

Location	Measured Background Noise Levels L ₉₀ , dBA		
	Day	Evening	Night
30 Church Road (representative of NM01)	38	38	33
545 Tramway Road (NM02)	40	40	37

Table 2.4 Morwell Solar Farm - Background Noise as reported by Renzo Tonin & Associates Acoustic Consultants (9 – 16 June 2020)

Location	Measured Background Noise Levels L ₉₀ , dBA		
	Day	Evening	Night
545 Tramway Road (NM02)	42	37	36

Table 2.5 Bennetts Creek BESS - Background Noise as reported by Renzo Tonin & Associates Acoustic Consultants (30 – 31 January 2023)

Location	Measured Background Noise Levels L ₉₀ , dBA		
	Day	Evening	Night
92 Church Road (representative of NM01)	35	27	31

3 Environmental noise criteria

The following sections present the applicability and derivation of environmental noise criteria for the Project.

Noise criteria for the Project have been established in accordance with the EPA Noise Protocol using current background noise measurement and analysis methods. Refer to Appendix B for details of Victorian EPA Acts and Regulations.

3.1 EPA Publication 1826 (Noise Protocol)

EPA 1826 is the applicable legislative document for the assessment of environmental noise from commercial, industrial, and trade premises within Victoria.

The protocol prescribes a methodology to determine noise limits to protect people from noise emissions from the facility. It particularly refers to noise emissions that may affect normal domestic or recreational activities, such as sleep during the night period.

Definitions adopted by EPA 1826 are outlined in Section 5.3 (Noise) of the EPR.

A Noise Sensitive Area (NSA) is defined in the EPR as that part of the land within the apparent boundaries of any piece of land, which is within a distance of 10 m outside the external walls of a noise sensitive building (such as residential buildings or buildings with similar types of accommodation, and sensitive educational uses). The noise limits are to be determined for the noise sensitive area that may be the worst affected by noise emitted from a facility.

To determine if noise is 'unreasonable' per Section 166 of the Act, the effective noise level (L_{eff}) from the industry is compared with the derived noise limits. The effective noise level (L_{eff}) is the level due to the industry measured or predicted at a residential dwelling or noise sensitive location over a continuous 30-minute period, which has had adjustments applied to account for certain characteristics such as tonality, impulsiveness, duration, intermittency, etc.

3.1.1 Rural area method

As the Project site and surrounding noise sensitive areas are located well outside of the Melbourne Urban Growth Boundary (UGB) and any identified Major Urban Areas (i.e. UGB identified in the planning scheme where the population is greater than 7,000 people), noise limits have been derived in accordance with EPA 1826 Part I.A.2 *Noise Limits – Rural Area Method*.

The method uses land use zoning of the industry and receiver as the basis for establishing noise limits. Where the receiver is in a background relevant area (for example, where the ambient noise environment is dominated by high levels of road traffic/Freeway noise), adjustments can be applied to increase the noise limits. Other adjustments can be included where there are multiple industries, based on the distance to the industry/boundary, or where the noise source under assessment is classified as an extractive industry.

In accordance with EPA 1997, the lowest calculated 'period-average' $L_{A90,1hr}$ for each of the day, evening and night periods will be adopted for the purpose of establishing noise limits.

3.1.2 Distance adjusted levels

Clause 20 of EPA 1826.5 states the distance adjustment is 0 as both the Project and the receivers are located within the same contiguous zone.

Under EPA 1826.5, the Project is classified as a utility and the surrounding area is classified as a Farming Zone (FZ). Clause 31 of the protocol states that:

"If the utility is located in a Farming Zone (FZ), Rural Activity Zone (RAZ) or Green Wedge Zone (GWZ) and the distance adjustment is 0 dB, and unless a background level assessment is conducted in accordance with clauses 21 to 23, then:

a. the distance-adjusted level for each period is –

- i. Day: 45 dB(A)*
- ii. Evening: 39 dB(A)*
- iii. Night: 34 dB(A).*

b. The noise limit is the distance-adjusted level defined in clause 31, unless a background level assessment is conducted in accordance with clauses 21 to 23.”

3.1.3 Background level adjustments

Clause 32 of EPA 1826 states that where background noise monitoring has been undertaken in accordance with Clauses 21 to 23, the noise limit for each NSA is determined as per Clause 24 by comparing the distance adjusted zoning levels and background noise levels for each time period as follows:

a. for the day period, the noise limit is the greater of:

- o the distance-adjusted level*
- o the day background level plus 8 dB*

b. for the evening period, the noise limit is the greater of:

- i) the distance-adjusted level*
- ii) the evening background level plus 5 dB*

c. for the night period, the noise limit:

- i) is the greater of-*
 - the distance-adjusted level or base noise limit; or*
 - the night background level plus 5 dB*
- ii) Noise limits for the night period must not be greater than 55 dB(A)*

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In accordance with EPA 1997, the lowest calculated ‘period-average’ $L_{A90, 1 \text{ hour}}$ for each of the day, evening and night periods (during the time the premises operates) will be adopted for the purpose of establishing noise limits.

3.1.4 Derivation of noise limits (NM01 and NM02)

The established noise limits applicable to noise emissions from the proposed development at surrounding NSAs are presented in Table 3.1 and Table 3.2 for receptor Zone 1 (NM01) and Zone 2 (NM02), respectively. Receptor Zones 1 and 2 contain the following NSAs, referencing Figure 1.1.

- Zone 1: NSAs R1-R3, R5
- Zone 2: NSAs R4

Table 3.1 EPA Noise Limits – NSA Zone 1 (NM01)

Descriptor	Noise Limits, dBA		
	DAY	EVENING	NIGHT
Zoning level (Clause 19)	46	41	36
Distance adjusted levels (Clause 20)	45	39	34
Distance adjusted levels - Utilities (Clause 31)	45	39	34
Measured lowest ‘period-average’ background noise level L_{90} (Clause 21 – 22)	24	23	19
Background level check (Clause 24)	45	39	34
EPA 1826 Noise Limits, $L_{eq,30min}$	45	39	34

Table 3.2 EPA Noise Limits – NSA Zone 2 (NM02)

Descriptor	Noise Limits, dBA		
	DAY	EVENING	NIGHT
Zoning level (Clause 19)	46	41	36
Distance adjusted levels (Clause 20)	45	39	34
Distance adjusted levels - Utilities (Clause 31)	45	39	34
Measured lowest 'period-average' background noise level L_{90} (Clause 21 – 22)	30	31	30
Background level check (Clause 24)	45	39	35
EPA 1826 Noise Limits, $L_{eq,30min}$	45	39	35

3.2 Adjustments for noise character

In addition to the assessment of unreasonable noise against the operational noise limits outlined above, EPA 1997 requires the consideration of potentially annoying noise characteristics. These may include:

- Impulsive noise
- Tonal noise
- Low frequency noise

Impulsive noise is defined as impulses of noise from a Project with a gap between impulses of approximately 10 seconds.

Annex C of EPA 1826 describes the methodology for determining the extent of tonal noise associated with a Project. This method is based on the analysis of 1/3 octave noise levels, where a single octave extends more than 3 dB above the level of adjacent octave bands.

Low frequency noise is defined and assessed using EPA Publication 1996 *Assessing low frequency noise – June 2021* (EPA 1996)

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3.3 Cumulative noise

Several CIT premises that have potential to contribute to the effective noise level (L_{eff}) at the NSAs have been identified near the Project (refer Section 1.2) and therefore cumulative noise needs to be considered. Regulation 119 under the Environment Protection Regulations states the following with respect to cumulative noise:

- (1) If 2 or more commercial, industrial and trade premises (whether existing or proposed) emit, or are likely to emit, noise that contributes to the effective noise level, a person in management or control of one or more of those premises must take all reasonable steps to ensure that the contribution from each of the premises, when combined, does not exceed the noise limit for the noise sensitive area.*
- (2) For the purposes of subregulation (1), what constitutes a reasonable step must be determined in accordance with the Noise Protocol.*

It is noted that Regulation 119 imposes a shared duty on persons in management or control of CIT premises to ensure that their combined noise contribution does not exceed the applicable noise limit at noise-sensitive areas, with compliance assessed in accordance with the EPA Noise Protocol.

EPA 1997 provides guidance to account for audible noise emission contributions from more than one industry. Under the shared principal pathway, the noise limits (derived in Section 3.1.4) should be reduced to threshold criteria, which is established by accounting for the number of premises contributing to the total noise level at the NSA under assessment.

During the noise survey undertaken by WSP, none of the existing and operational CITs identified in Section 2 were audible at monitoring locations NM01 and NM02. While observations were undertaken during the daytime period, the background noise measurements indicate consistently low background noise levels across the full week-long monitoring period across all periods of the day. Given that the surrounding CITs operate on a 24-hour basis (with the exception of Parkside Timber, which operates during the daytime only), it is therefore reasonable to infer that inaudibility of these sources is also likely to persist during night-time periods at these locations, particularly considering the consistency of measured low background noise levels.

On this basis, no further reduction has been applied to the Project noise limits for the cumulative noise assessment. As predicted noise levels are available for the predicted operational noise of listed CITs below, these predicted noise levels have been directly incorporated into the cumulative noise assessment. Accordingly, these CITs have not been included in the derivation of the reduced noise thresholds.

- Hazelwood Terminal Station (**Operational**)
- Jeeralang Gas and Terminal Station (**Operational**)
- Hazelwood BESS (**Operational**)
- Latrobe Valley BESS (**Operational**)
- Parkside Timber (**Operational**)
- Latrobe Magnesium Demonstration Plant (**Operational**)

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3.4 Summary of operational noise limits

The summary of operational noise limits itemised for each identified NSA are shown in Table 3.3. For clarity, all contributing CIT premises (combined noise from the Project and CITs) are required to comply with these noise limits (Regulation 119).

Table 3.3 Summary of operational noise limits

Noise Sensitive Area	EPA Noise Limits, $L_{eq,30min}$		
	Day	Evening	Night
R1	45	39	34
R2	45	39	34
R3	45	39	34
R4	45	39	35
R5	45	39	34

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4 Operational Noise Assessment

4.1 Assessment Inputs

4.1.1 Modelling Method

A noise model was created with SoundPLAN 9.1 modelling software, and noise modelling of the Project was undertaken using the methodology provided in *International Standard ISO9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation (ISO 9613-2:1996)*.

This internationally recognised standard was designed to assume conditions that favour the propagation of noise from meteorological effects, described as a slight wind (1 to 5 m/s) blowing from source to NSA, or a well-developed moderate ground-based temperature inversion. As such, the standard always predicts noise levels slightly higher than levels under calm or neutral propagation conditions and represents a conservative approach.

Key modelling parameters and assumptions are shown in Table 4.1.

Table 4.1 Operational noise modelling inputs and assumptions

Parameter	Modelling input
Ground absorption	30% on the Project site. 80% ⁽¹⁾ porous for the remaining area, which is indicative of grass / open vegetation located throughout the study area.
Terrain data	Terrain data have been downloaded from VICMAP. Topography within the site boundary has been flattened to account for the approximately final elevation.
Meteorological conditions	Winds (1 to 5 m/s) blowing from source to NSA, or a well-developed moderate ground-based temperature inversion (light moderate worst case).
Buildings	The sensitive NSA is modelled as point NSAs only (free-field levels).
NSA height	Point NSAs within 10 m of the most exposed façade. The NSA heights are set at 1.5 m above ground level.
Location of noise sources	Refer Figure 1.1
Modelled sound power levels	As described in Section 4.1.3. Detailed information regarding noise sources was not available for the transformer, therefore assumptions have been made based on similar projects.
Assessment parameter/ duration	L _{Aeq} , 30 minutes (all noise sources assessed as part of this scope of works)

- (1) Ground absorption factors are set to soft (0.8) which is indicative of the mixed grass/open vegetation located throughout the study area. This is based on current research applicable to the Project area and considered best practice. ⁴

⁴ Noise Reduction by Greening – Attenborough, Taherzadeh (2023)

4.1.2 Noise mitigation

As part of the obligations under the GED, all reasonably practicable mitigation options have been considered for a 'baseline' prediction assessment, including equipment noise control such as silencer kits and equipment operational cooling duties, as well as noise barriers. These options are detailed in the following sections.

Further assessment will be undertaken during the detailed design stages of the project to ensure proposed noise controls and operational inputs will minimise risk of harm to the environment, including the risk of increasing cumulative noise alongside adjacent industries. The project may rationalise and refine aspects of the controls described in this report to optimise the design.

4.1.2.1 Central battery inverters source noise control

As the proposed central battery inverters are expected to be the primary dominant noise source from the Project, noise mitigation considerations have been focused on this equipment. Lower noise emitting models of the central battery inverters are available, with noise source data as provided by the manufacturer outlined below:

- All scenarios: SMA SCS 4600 UP-S at 80% duty, with attenuation (approximately 5dB reduction compared with without attenuation)

4.1.2.2 BESS source noise control

As the proposed BESS units are expected to be the secondary dominant noise source from the Project, noise mitigation considerations have also been considered for this equipment. BESS, source noise mitigation is available, with noise source data provided by the manufacturer for each model outlined below:

The following operational fan speeds for the BESS for each period of the day have been provided by Client and adopted for this assessment:

- Day / Evening:
 - BESS EnerC+306 (79.5% fan speed i.e. highest operational speed) - with consideration of sound cover
- Night:
 - BESS EnerC+306 (50% fan speed) - with consideration of sound cover

4.1.2.3 Propagation noise control

To demonstrate consideration of all reasonably practicable mitigation measures, a preliminary assessment of noise barriers has been undertaken based on the indicative configuration presented in Figure 4.1. Barrier heights in the range of 4–6 m (shown as green lines) were evaluated and have been considered residual control measures in addition to source noise control measures.

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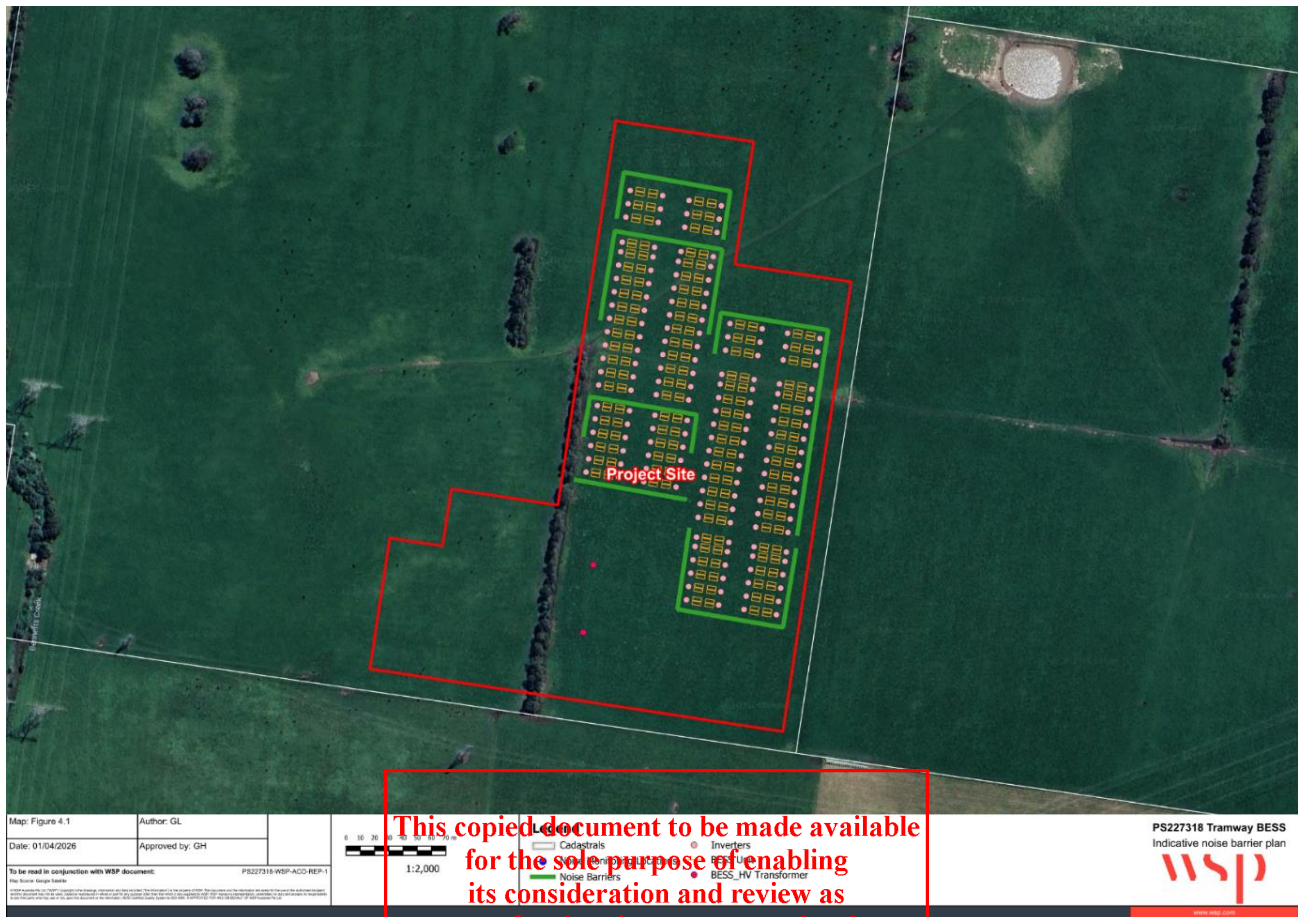


Figure 4.1 Indicative noise barrier plan

Preliminary analysis of noise barrier heights up to 6m based on the configuration in Figure 4.1 (approximately 980m length of total noise barrier) indicate a maximum noise reduction of up to 1dB during the daytime period and 1.5dB during the night time period, inclusive of the source noise controls. Estimated noise barrier reductions at each NSA are presented in Table 4.2.

Given the low noise attenuation achieved for the extent of barriers required, **the implementation of noise barriers is not considered a practical or cost-effective mitigation measure.** Accordingly, noise barriers have not been included in the predicted 'baseline' Project noise level results used to demonstrate compliance with the noise limits summarised in Section 3.4.

Table 4.2 Predicted reduction at each NSA with 6m high noise barriers

NSA	Noise barrier reduction, dB	
	Day / Evening	Night
R1	<1	1
R2	1	1 - 2
R3	1	1 - 2
R4	0	<1
R5	<1	<1

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4.1.3 Sound Power Levels

The key infrastructure components associated with the proposed BESS is captured in Table 4.3 together with estimated Sound Power Levels (SWLs) and proposed noise reduction controls. Information captured in Table 4.3 has been modelled for the Project for the ‘baseline’ assessment, based on available Project information provided.

Table 4.3 Primary noise generating equipment at the Project Site

Equipment	Manufacturer/Model	Sound Power Level, dB L _{Aeq,30min} , per unit	Number of plant	Modelled noise source height, m
Transformer ⁽¹⁾	Nominated specifications: — Voltage: 500 / 33 / 33 kV — Power rating: 350 / 175 / 175 MVA (3 winding)	94	2	4.5
Kiosk Transformer	Nominated specifications: Power rating: 2 MVA	70	8	2.0
Harmonic Filters	-	83	4	2.0
Battery Energy Storage System ⁽²⁾	EnerC+306 <u>without sound cover</u> — 79.5% fan speed (full capacity) — 50% fan speed EnerC+306 <u>with sound cover</u> — 79.5% fan speed (full capacity) — 50% fan speed	85 85 73 79 69	336	2.9
Central Battery Inverters	SMA SCS 4600 UP-S at 80% Duty with attenuation kit	82	168	2.3

- (1) The sound power level for the 350 MVA transformer was calculated using the reduced limits specified in *AS/NZS 60076-10 Power transformers – Part 10: Determination of sound levels*. One-third-octave band data was sourced to a similar high-voltage transformer (WSP database – Stockdill) and subsequently calibrated to align with the overall SWL reported.
- (2) Modelled as an industrial building, with an area source used to represent the air vents, which acts as the primary noise source. Validated against measured sound pressure levels documented in manufacturer’s data. Correction of 1.5 dB applied. Levels in table are exclusive of validation correction.

WSP has undertaken BESS fan speed optimisation studies in consultation with the Client and manufacturer, resulting in agreed fan speeds of **79.5% (full operational speed) for daytime and evening operation and 50% for night-time operation** for BESS model EnerC+306.

4.1.4 Adjustments for noise character

In consideration of the noise characteristics of the project noise sources, adjustments for noise character have been reviewed and corrections have been made for tonal noise, primarily due to the operation of the Transformers. Other noise characteristics such as low frequency noise and impulsive noise are not considered a risk from this Project as the BESS is expected emit continuous noise from the cooling and electrical equipment.

A tonality assessment of the predicted noise spectrum has been conducted to examine its tonal characteristics. The analytical methodology detailed in Annex C of EPA 1826 has been used to conduct this assessment.

The result of the assessment has indicated that a +2 dB tonality adjustment should be made for the BESS noise sources for most operational scenarios, see Section 4.2 for details.

4.2 Predicted noise levels – project only

The predicted noise levels from the Project (without any contribution of cumulative noise from neighbouring CIT premises) have been compared against the EPA 1826 limits to assess compliance.

The predicted operational noise levels, incorporating Client-supplied source noise control measures outlined in Section 4.1.2 are presented in Table 4.4 and Table 4.5 summarising the results of two scenarios:

- **Scenario 1: base operational** noise mitigation required to achieve compliance with the EPA noise limits from the Project on a standalone basis (in absence of surrounding CIT premises). This scenario includes optimisation of operational fan speeds for the BESS units during relevant assessment periods, without sound covers.
- **Scenario 2: additional feasible mitigation** to further reduce the Project contribution (if required) for cumulative noise consideration. This scenario includes the Scenario 1 controls, with sound covers installed to all BESS units and represents all feasible and practicable noise control measures.

Table 4.4 Predicted operational noise assessment (Project Only) – BESS (Scenario 1: EnerC+306 without sound cover)

Noise Sensitive Areas	Predicted noise level dBA		Tonal noise character adjustment dB		Project Effective noise level contribution, L _{eff} dBA		Project EPA Noise Limits, L _{eq,30min}			Project Complies?		
	D/E	N	D/E	N	D/E	N	D	E	N	D	E	N
R1	39	31	+2	+2	39	33	45	39	34	Yes	Yes	Yes
R2	39	31	+2	+2	39	33	45	39	34	Yes	Yes	Yes
R3	39	31	+2	+2	39	33	45	39	34	Yes	Yes	Yes
R4	38	31	+2	+2	38	33	45	39	35	Yes	Yes	Yes
R5	34	27	-	+2	34	29	45	39	34	Yes	Yes	Yes

D: Day, E: Evening, N: Night, as defined in Appendix B1.2.1

Table 4.5 Predicted operational noise assessment – BESS (Project Only) (Scenario 2: EnerC+306 with sound cover)

Noise Sensitive Areas	Predicted noise level dBA		Tonal noise character adjustment dB		Project Effective noise level contribution, L _{eff} dBA		Project EPA Noise Limits, L _{eq,30min}			Project Complies?		
	D/E	N	D/E	N	D/E	N	D	E	N	D	E	N
R1	34	29	+2	+2	36	31	45	39	34	Yes	Yes	Yes
R2	34	29	+2	+2	36	31	45	39	34	Yes	Yes	Yes
R3	34	29	+2	+2	36	31	45	39	34	Yes	Yes	Yes
R4	33	29	+2	+2	35	31	45	39	35	Yes	Yes	Yes
R5	30	25	-	+2	30	27	45	39	34	Yes	Yes	Yes

D: Day, E: Evening, N: Night, as defined in Appendix B1.2.1

4.3 Predicted noise levels - cumulative noise

The cumulative noise assessment includes only the surrounding **CIT premises that are either currently operational or under construction**. Other identified CIT projects have been excluded from assessment for planning approval, as their delivery remains uncertain.

For information potential risks associated with all known existing, under construction and future-approved CIT premises are summarised in Section 4.3.2.

Discussion of recommended noise management controls to address cumulative noise are outlined in Section 5.

4.3.1 Cumulative noise from Project and CITs in operation or under construction

The predicted noise levels from the Project, with contribution of cumulative noise from neighbouring existing and under construction CIT premises have been compared against the EPA 1826 limits to assess compliance in Table 4.6.

The Project noise contribution adopted for the cumulative assessment incorporates all practicable noise control measures, including operational duty controls and sound covers to the BESS units.

Predicted noise levels documented in the noise impact assessments for Woreen BESS have been logarithmically summed with the Project effective noise levels for the cumulative noise assessment.

The CIT premises accounted for in the cumulative noise assessment are as follows:

- Hazelwood Terminal Station (**Operational**)
- Jeeralang Gas and Terminal Station (**Operational**)
- Hazelwood BESS (**Operational**)
- Latrobe Valley BESS (**Operational**)
- Parkside Timber (**Operational**)
- Latrobe Magnesium Demonstration Plant (**Operational**)
- Woreen BESS (**Approved, under construction**)

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Table 4.6 Predicted operational cumulative noise assessment from Project + operational and under construction CITs

Noise Sensitive Areas	Project Effective noise level contribution, L_{eff} dBA		Cumulative Noise from CITs (Woreen BESS), L_{eff} dBA	Cumulative Noise from Project and CITs, L_{eff} dBA		Project EPA Noise Limits, $L_{eq,30min}$			Complies?		
	D/E	N	D/E/N	D/E	N	D	E	N	D	E	N
R1	36	31	31 ⁽¹⁾	37	34	45	39	34	Yes	Yes	Yes
R2	36	31	-	36	31	45	39	34	Yes	Yes	Yes
R3	36	31	-	36	31	45	39	34	Yes	Yes	Yes
R4	35	31	32 ⁽¹⁾	37	34	45	39	35	Yes	Yes	Yes
R5	30	27	-	30	27	45	39	34	Yes	Yes	Yes

(1) No tonal noise correction has been applied to the results for the noise assessment.

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4.3.2 Cumulative noise from Project and all identified CITs (for information only)

The cumulative noise assessment presented in this section considers the predicted noise contributions from all identified CIT premises, including those that are operational, under construction, and approved under planning. This assessment has been undertaken to identify potential cumulative noise risks in a conservative scenario where all identified CIT premises are built and operate concurrently. It is acknowledged that the predicted noise levels for surrounding sites are based on planning-phase design and assessment detail from external reports (refer to Section 1.1) and therefore incorporate inherent conservatism.

The primary cumulative assessment (Section 4.3.1) focus has been limited to CIT premises that are either operational or under construction, with compliance managed through pre-construction monitoring and, where necessary, implementation of additional residual noise control measures as discussed in Section 5. Notwithstanding this, and in accordance with the GED to minimise risks of harm to human health and the environment so far as reasonably practicable (refer Appendix B), the broader cumulative scenario has been assessed to highlight potential future risks of noise emissions. This supports the need for proactive, regulator-led management measures, including pre-construction validation monitoring and the application of residual noise controls where required for the Project and surrounding CIT premises. For reference, the cumulative noise contribution from surrounding CIT premises without the Project has also been assessed against the Project noise limits in Table 4.7.

The predicted noise levels from the Project, with contribution of cumulative noise from all identified neighbouring CIT premises have been compared against the EPA 1826 limits to assess compliance in Table 4.8. The Project noise contribution adopted for the cumulative assessment incorporates all practicable noise control measures, including operational duty controls and sound covers to the BESS units (Scenario 2). Predicted noise levels documented in the noise impact assessments for Woreen BESS, Bennetts Creek BESS, Hazelwood North Solar Farm, Marinus Link Switching Station, Tramway Road BESS and Morwell BESS have been logarithmically summed with the Project effective noise levels for the cumulative noise assessment. The CIT premises accounted for in this cumulative noise assessment are as follows:

- Hazelwood Terminal Station (**Operational**)
- Jeeralang Gas and Terminal Station (**Operational**)
- Hazelwood BESS (**Operational**)
- Latrobe Valley BESS (**Operational**)
- Parkside Timber (**Operational**)
- Latrobe Magnesium Demonstration Plant (**Operational**)
- Woreen BESS (**Approved, under construction**)
- Marinus Link Switching Station (Approved, not constructed)
- Tramway Road BESS (Approved, not constructed)
- Bennetts Creek BESS (Approved, not constructed)
- Hazelwood North Solar Farm (Approved, not constructed)
- Morwell BESS (Approved, not constructed)

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Table 4.7 Predicted operational cumulative noise assessment from CITs (only) – for reference

Noise Sensitive Areas	Woreen BESS	Bennetts Creek BESS	Hazel wood North Solar Farm ⁽²⁾	Marinus Link Switching Station		Morwell Solar Farm	Tramway Road Bess	Morwell BESS	Cumulative Noise from CITs, L _{eff} dBA		Project EPA Noise Limits, L _{eq,30min}			Complies?		
	D/E/N	D/E/N	D/E/N	D/E	N	D/E/N	D/E/N	D/E/N	D/E	N	D	E	N	D	E	N
R1	31 ⁽¹⁾	34 ⁽¹⁾	-	-	-	35	-	33	40	40	45	39	34	Yes	No	No
R2	-	30 ⁽¹⁾	-	-	-	28	-	28	34	34	45	39	34	Yes	Yes	Yes
R3	-	-	-	-	-	27	-	-	27	27	45	39	34	Yes	Yes	Yes
R4	32 ⁽¹⁾	-	-	24 ⁽¹⁾	22 ⁽¹⁾	35	27 ⁽¹⁾	26	38	38	45	39	35	Yes	Yes	No
R5	-	-	-	-	-	25	-	-	25	25	45	39	34	Yes	Yes	Yes

(1) No tonal noise correction has been applied to the results for the noise assessment.

(2) Predictions do not go further south than Firmans Lane which is approximately 2km north of nearest NSA, therefore no noise contribution is expected from this CIT.

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Table 4.8 Predicted operational cumulative noise assessment from Project and all operating, under construction and future CITs

Noise Sensitive Areas	Project Effective noise level contribution, L_{eff} dBA		Cumulative Noise from CITs, L_{eff} dBA	Cumulative Noise from Project and CITs, L_{eff} dBA		Project EPA Noise Limits, $L_{\text{eq},30\text{min}}$			Complies?		
	D/E	N	D/E/N	D/E	N	D	E	N	D	E	N
R1	36	31	40	41	40	45	39	34	Yes	No	No
R2	36	31	34	38	35	45	39	34	Yes	Yes	No
R3	36	31	27	36	32	45	39	34	Yes	Yes	Yes
R4	35	31	38	40	38	45	39	35	Yes	No	No
R5	30	27	25	31	29	45	39	34	Yes	Yes	Yes

This cumulative noise assessment predicts potential exceedances of the applicable Project noise limits at NSA R1, R2 and R4 when the Project is considered together with all identified surrounding CIT premises. Potential exceedances are also predicted at NSA R1 and R4 from surrounding CIT premises in the absence of the Project.

The Project is predicted to comply with the applicable EPA noise limits on a standalone basis. Consistent with the GED and Regulation 119, additional feasible mitigation has been considered to minimise the Project contribution to cumulative noise.

Sound covers have been identified as an available mitigation measure and are required based on the planning phase assessment information, however this requirement may be subject to review following pre-construction noise verification and refinement in detailed design, refer to Section 5 for further discussion on cumulative noise and noise management.

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5 Discussion

As outlined in Section 4.2, the Project is predicted to comply with the applicable EPA Publication 1826 noise limits at all identified Noise Sensitive Areas (NSAs) on a standalone basis (i.e. with out consideration of cumulative noise contributions fro surrounding CIT premises), with practicable and reasonable mitigation measures incorporated into the design. This includes source noise controls: BESS Unit fan duty controls and Inverter Attenuation Kit.

The cumulative noise assessment, incorporating surrounding operational and under-construction CIT premises, similarly predicts compliance at all identified NSAs based on currently available information and inclusion of all feasible and reasonable noise control measures. This includes source noise controls: BESS Unit fan duty controls, BESS Unit Sound Covers and Inverter Attenuation Kit.

The Project has also considered additional feasible and practicable measures to further reduce its contribution to cumulative noise (including conceptual noise barriers); however, the preliminary assessment indicates negligible benefit.

A broader risk review of cumulative noise was undertaken for information only, including other identified CIT premises with planning approval but not yet constructed. This review indicates that cumulative exceedances at some NSAs may occur even without the Project, highlighting that cumulative outcomes are dependent on the actual noise emissions from surrounding sites and are inherently uncertain at the planning stage.

Considering this, it is appropriate that the noise control measures requirements in this assessment remain subject to refinement through pre-construction verification and detailed design.

Accordingly, the proponent must undertake pre-construction verification measurements and incorporate the outcomes into detailed design. Operational verification and additional practicable and reasonable mitigation measures will be implemented where required to ensure compliance with EPA obligations.

This approach provides a practical pathway to managing cumulative noise risk, noting that several surrounding CIT premises are either not yet constructed or are currently represented by planning-phase predictions only.

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6 Conclusion

An operational noise assessment has been undertaken for the Project in accordance with the Environmental Protection Act 2017, the General Environmental Duty (GED), EPA Publication 1826 and EPA Publication 1997.

Unattended noise monitoring was undertaken to better characterise the existing noise environment and update legacy measurements previously completed in the same locality.

The Project is predicted to comply with the applicable EPA Publication 1826 noise limits at all identified Noise Sensitive Areas (NSAs) on a standalone basis, with practicable and reasonable mitigation measures incorporated into the design. This includes source noise controls: BESS Unit fan duty controls and Inverter Attenuation Kit.

The cumulative noise assessment, incorporating surrounding operational and under-construction CIT premises, similarly predicts compliance at all identified NSAs based on currently available information and inclusion of all feasible and reasonable noise control measures. This includes source noise controls: BESS Unit fan duty controls, BESS Unit Sound Covers and Inverter Attenuation Kit.

The Project has also considered additional feasible and practicable measures to further reduce its contribution to cumulative noise (including conceptual noise barriers); however, the preliminary assessment indicates negligible benefit.

A broader risk review of cumulative noise was undertaken for information only, including other identified CIT premises with planning approval but not yet constructed. This review indicates that cumulative exceedances at some NSAs may occur even without the Project, highlighting that cumulative outcomes are dependent on the actual noise emissions from surrounding sites and are inherently uncertain at the planning stage.

In this context, it is appropriate that the noise control measures requirements in this assessment remain subject to refinement through pre-construction verification and detailed design.

To manage the potential risks with respect to cumulative noise for future CIT premises, the proponent must undertake pre-construction verification measurements and incorporate the outcomes into detailed design. Operational verification and additional practicable and reasonable mitigation measures will be implemented where required to ensure compliance with EPA obligations.

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Appendix A

Noise Monitoring Results

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Appendix A - Noise Logger Summary

Project No.	227318	Date	27 February 2026	Sheet	3
Project Title	Gippsland BESS	Engineer	LF	Rev	1
Description	LG	Type	LG		

Logger Location	79 Church Rd
Microphone Position	1m from Façade, 1.5m Height

		Fri, 30 Jan 2026			Sat, 31 Jan 2026			Sun, 01 Feb 2026			Mon, 02 Feb 2026			Tue, 03 Feb 2026			Wed, 04 Feb 2026			Thu, 05 Feb 2026			Fri, 06 Feb 2026		
		L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	
Daily Averages	LA10,18h	46.6			48.5			48.6			44.0			47.3			41.2			43.0			45.4		
	LAeq,24h		53.9			51.4			45.5			44.8			54.0			44.6			46.9			51.1	
	LAeq,16h		55.6			53.1			47.3			45.3			50.0			44.0			47.3			51.6	
	LAeq,8h		38.0			44.4			0.0			57.4			45.9			45.9			49.7			46.8	
	LA90 Day						32.6						31.5						26.6			26.6			30.0
	LA90 Evening			36.7			37.5						25.9			37.8			32.2			38.6			39.8
	LA90 Night			21.6			35.6						44.4			31.1			29.4			39.0			42.7
Hourly Values	00:00 to 01:00				26.5	29.5	20.1	46.8	44.0	40.3	35.8*	38.3*	26.9*	56.2	53.8	47.4	47.7	44.3	30.7	44.7	43.4	28.2	47.7	45.2	37.0
	01:00 to 02:00				26.6	32.5	20.4	47.8	45.4	38.8	38.2*	42.1*	26*	60.6	57.3	50.1	47.2	46.2	30.4	48.5	49.0	28.4	51.3	48.4	39.9
	02:00 to 03:00				23.8	30.1	19.4	48.9	45.9	38.8	39.7*	40.6*	28.6*	65.6	61.7	53.4	47.6	44.3	32.0	46.9	43.5	28.8	52.3	49.2	40.4
	03:00 to 04:00				23.8	34.9	19.3	45.5	43.4	38.0	41.7*	43*	30*	58.1	55.4	49.4	53.0	47.8	30.6	51.4	46.3	29.6	54.8	51.2	41.7
	04:00 to 05:00				31.6	36.0	20.4	43.6	43.5	32.6	47.3*	45.9*	34.4*	63.1*	59.0	48.6	48.3	45.6	29.9	50.2	46.0	29.2	56.6	53.5	45.8
	05:00 to 06:00				47.2	45.0	23.9	48.0	47.2	31.5	58*	52.1*	37*	62.9	59.8	53.5	48.5	45.3	31.1	49.1	45.2	31.5	54.7	51.6	43.6
	06:00 to 07:00				45.4	44.6	25.1	48.6	47.3	34.4	53.7*	50.3*	41.6*	62.8	58.1	47.9	50.4	46.9	34.4	46.7	45.1	32.3	51.2	49.7	42.0
	07:00 to 08:00				46.2	44.7	24.2	49.7*	48.5*	36.9*	53.5*	50.8*	37.9*	55.6	52.6	41.5	40.2	41.1	28.1	46.5	45.4	35.8	45.9	47.0	35.7
	08:00 to 09:00				48.4	45.3	26.8	56.7*	53.9*	42.6*	51.7*	48.5*	34.8*	48.6	48.0	37.4	38.5	39.4	27.9	57.5	53.5	31.1	68.8	62.2	34.7
	09:00 to 10:00				48.6	45.9	27.3	59.6*	58.4*	51*	49.6	47.5	30.8	56.4	51.7	35.7	33.6	36.5	25.5	38.6	42.4	29.3	46.3	44.9	32.8
	10:00 to 11:00				48.8	46.2	30.8	58.6*	55.8*	50.1*	44.2	44.7	30.0	39.3	39.1	32.2	37.3	40.8	22.1	38.5	38.5	26.8	38.8	39.5	27.5
	11:00 to 12:00				49.3	46.0	30.7	56.2*	53.8*	47.4*	47.7	44.3	30.7	37.0	37.2	30.3	33.5	40.3	24.6	28.2	30.3	20.7	34.0	31.1	25.5
	12:00 to 13:00	47.4*	44.4*	29.4*	49.3	46.4	30.0	60.6*	57.3*	50.1*	47.2	46.2	30.4	37.4	39.0	28.6	32.2	38.3	25.0	25.3	24.7	19.4	34.8	33.4	27.5
	13:00 to 14:00	48*	44.2*	30.2*	47.9	45.2	30.6	65.6*	61.7*	53.4*	47.6	44.3	32.0	35.8	38.3	26.9	31.0	28.7	25.3	30.8	37.5	22.1	30.3	32.4	24.6
	14:00 to 15:00	52.4*	47.7*	33.4*	49.7	48.2	35.9	58.1*	55.4*	49.4*	53.0	47.8	30.6	38.2	42.1	26.0	34.8	32.0	27.6	32.1	38.2	23.4	35.9	33.0	27.9
	15:00 to 16:00	52.9*	48.6*	35.7*	51.6	50.1	42.5	63.1*	59*	48.6*	48.3	45.6	29.9	39.7	40.6	28.6	35.9	38.3	29.7	34.9	42.9	25.7	37.8	40.4	28.3
	16:00 to 17:00	50.4*	48.1*	35.7*	52.8	50.8	42.1	62.9*	59.8*	53.5*	48.5	45.3	31.1	41.7	43.0	30.0	37.4	37.1	28.4	40.3	46.5	25.4	40.9	40.4	31.8
	17:00 to 18:00	48.4*	46.1*	37.6*	49.1	48.1	37.9	62.8*	58.1*	47.9*	50.4	46.9	34.4	47.3	45.9	34.4	36.4	41.1	28.6	45.8	45.8	33.2	44.0	44.0	34.0
	18:00 to 19:00	65.7	59.7	43.7	50.3	48.9	41.9	55.6*	52.6*	41.5*	40.2	41.1	28.1	56.0	52.1	37.0	50.8	48.6	32.1	53.9	50.4	38.5	52.1	49.6	38.9
	19:00 to 20:00	60.1	56.2	44.1	70.1	64.0	40.3	48.6*	48*	37.4*	38.5	39.4	27.9	53.7	50.3	41.6	50.7	47.6	34.5	53.5	50.8	42.6	53.5	49.6	40.8
	20:00 to 21:00	49.2	49.1	32.3	41.1	41.2	34.0	56.4*	51.7*	35.7*	33.6	36.5	25.5	55.5	50.8	37.9	54.3	49.3	34.1	54.5	51.0	42.8	56.8	52.6	41.2
	21:00 to 22:00	40.6	42.5	26.7	40.3	42.3	33.7	39.3*	39.1*	32.2*	37.3	40.8	22.1	51.7	48.5	34.8	49.2	47.1	28.2	52.3	48.6	30.5	49.9	48.0	38.1
	22:00 to 23:00	34.0	37.7	23.8	36.8	36.9	29.2	37*	37.2*	30.3*	33.5	40.3	24.6	49.6	47.5	30.8	46.4	44.4	27.3	46.1	44.2	29.2	47.0	44.7	36.6
	23:00 to 0:00	30.2	33.2	22.2	46.5	43.2	36.6	37.4*	39*	28.6*	32.2	38.3	25.0	44.2	44.7	30.0	49.1	46.7	28.9	48.6	46.0	31.4	49.8	48.2	39.2

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Appendix A - Noise Logger Summary

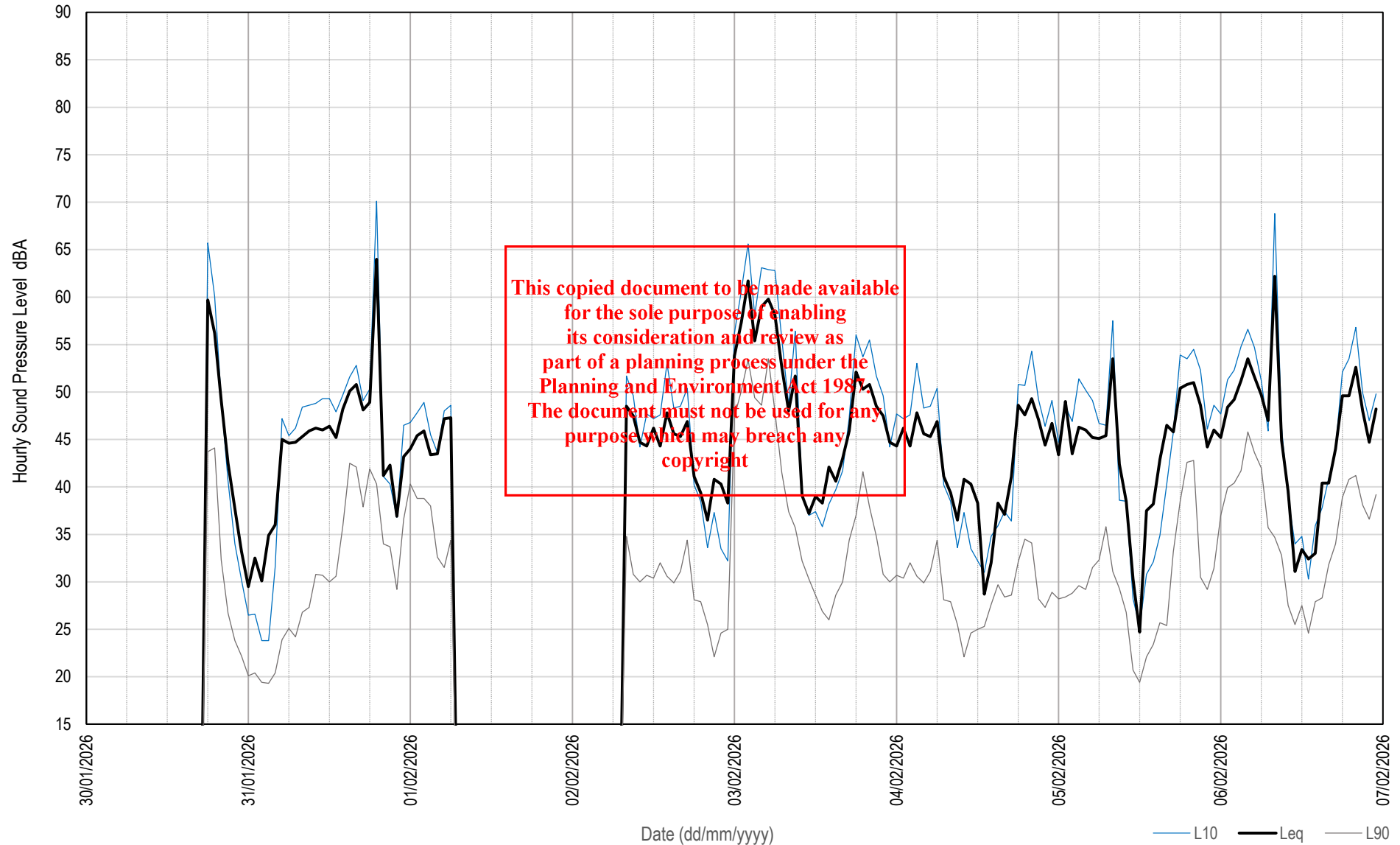
Project No.	227318	Date	27 February 2026	Sheet	4
Project Title	Gippsland BESS	Engineer	LF	Rev	1
Description	LG	Type	LG		

Logger Location	79 Church Rd
Microphone Position	1m from Façade, 1.5m Height

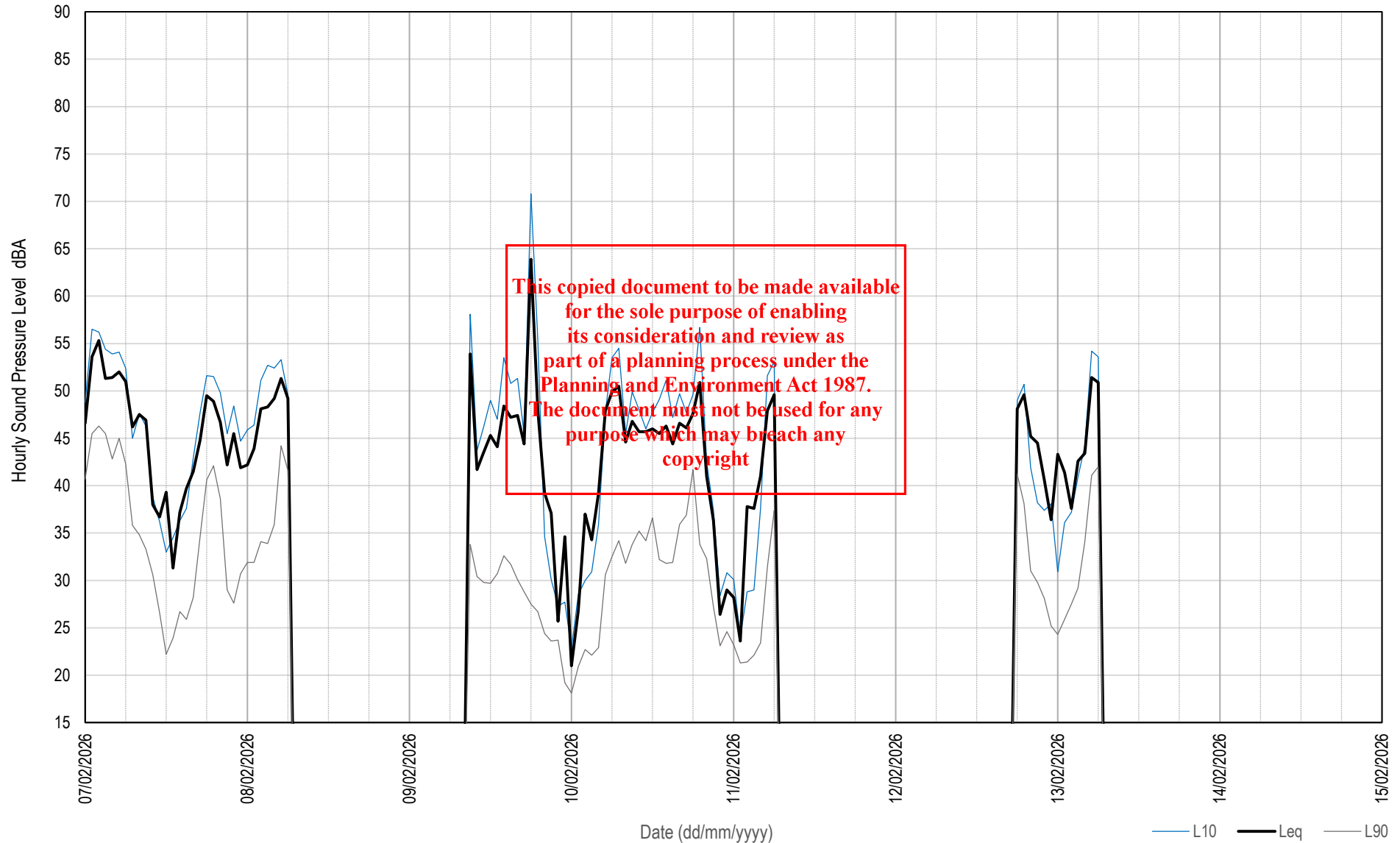
		Sat, 07 Feb 2026			Sun, 08 Feb 2026			Mon, 09 Feb 2026			Tue, 10 Feb 2026			Wed, 11 Feb 2026			Thu, 12 Feb 2026			Fri, 13 Feb 2026					
		L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}
Daily Averages	LA10, 18h	43.9			49.6			46.1			46.4			53.1			42.6			53.6					
	LAeq, 24h		48.4			48.3			53.1			45.6		44.1				45.9			46.9			0.0	
	LAeq, 16h		45.6			49.2			53.7			46.9		49.6				47.3			50.9			0.0	
	LAeq, 8h		47.4			0.0			40.1			40.4		0.0				44.7			0.0			0.0	
	LA90 Day			29.3						30.8			34.0												
	LA90 Evening			37.6						25.6			33.8							35.0					
Hourly Values	LA90 Night			34.6						23.6			25.3							30.8					
	00:00 to 01:00	48.8	46.6	40.7	45.9	42.2	31.9	29.2*	29.2*	22.1*	22.8	21.0	18.1	30.1	28.2	23.2	36.5*	33.8*	28.2*	30.9	43.3	24.3			
	01:00 to 02:00	56.5	53.6	45.5	46.4	43.9	31.9	33*	33.8*	24.4*	28.5	26.8	20.9	24.0	23.6	21.3	40.3*	37.2*	30.7*	36.1	41.4	25.9			
	02:00 to 03:00	56.2	55.3	46.3	51.1	48.1	34.1	35.9	37.4	26.2*	30.0	27.0	22.1	28.8	37.8	21.4	42.4*	40.3*	33*	37.2	37.6	27.5			
	03:00 to 04:00	54.4	51.3	45.5	52.7	48.3	33.9	43.5	39.5	26.8*	36.9	34.3	22.1	29.1	37.6	22.1	41.8*	43.7*	30.7*	40.9	42.6	29.2			
	04:00 to 05:00	53.9	51.4	42.8	52.4	49.2	35.9	43.8	43.2	29.1*	35.9	39.2	22.9	37.6	41.0	23.4	44.6*	43.3*	32.4*	44.2	43.4	34.1			
	05:00 to 06:00	54.1	52.0	45.0	53.3	51.3	44.2	51.8	49.8	35.6*	47.7	47.9	30.6	51.6	47.9	31.4	52.6*	49.6*	39.9*	54.2	51.4	41.1			
	06:00 to 07:00	52.4	51.0	42.3	49.6	49.2	41.6	55.8*	53.8*	37.4*	53.3	49.9	32.5	53.1	49.6	37.4	56*	52*	42.7*	53.6	50.9	42.0			
	07:00 to 08:00	45.0	46.2	35.8	58.6*	56.5*	33.5*	54.5*	51.1*	36.8*	54.9	50.5	34.2	54.6*	51.7*	37.2*	58.5*	53.8*	40.9*	55.2*	50.7*	39.4*			
	08:00 to 09:00	47.6	47.5	34.8	67.7*	61.7*	31.2*	53.4*	47.4*	31.3*	45.5	44.6	31.8	49.8*	48.5*	34.8*	50.7*	49.2*	40.1*	50.6*	47.2*	31.9*			
	09:00 to 10:00	46.3	46.9	33.3	39.4*	39.9*	26.7*	58.1	53.9	33.8	49.9	46.8	33.8	47.6*	44.2*	33.5*	57.4*	54.4*	46.5*	45.6*	45.7*	32.3*			
	10:00 to 11:00	38.8	38.0	30.6	34.3*	37.4*	24.9*	43.7	41.7	30.4	48.0	45.7	35.2	48.4*	45.7*	36*	57.1*	54*	46.2*	50.2*	47.7*	32.9*			
	11:00 to 12:00	36.2	36.7	26.6	35.2*	40.2*	24.1*	46.2	43.5	29.8	46.0	45.7	34.2	58.3*	54.3*	42.2*	57.8*	54.9*	47.1*	47.8*	47.3*	35.8*			
	12:00 to 13:00	33.0	39.3	22.2	33.9*	41.1*	22.7*	49.0	45.3	29.7	47.7	46.0	36.6	57.2*	53.8*	45.3*	60*	56.9*	51.3*	51.6*	49.5*	34.8*			
	13:00 to 14:00	34.5	31.3	23.9	26*	32.6*	20.8*	47.0	44.1	30.7	49.1	45.5	32.2	55.6*	52.2*	44.8*	58.5*	55.6*	49.3*						
	14:00 to 15:00	36.3	37.2	26.7	31.1*	28.1*	20.9*	53.5	48.4	32.6	51.1	46.3	31.8	62.8*	59.3*	50.3*	58.6*	55.2*	47.9*						
	15:00 to 16:00	37.6	39.7	25.9	35*	38.3*	25.7*	50.8	47.2	31.7	47.2	44.4	31.9	64.3*	61.6*	56.8*	57.6*	54.5*	47.9*						
	16:00 to 17:00	42.9	41.5	28.2	34.4*	31.5*	26.1*	51.3	47.4	30.1	49.7	46.6	35.9	59.1*	55.7*	47.5*	56.5*	54*	48.1*						
	17:00 to 18:00	47.7	44.8	34.6	36.6*	37.7*	25.1*	45.4	44.4	28.8	47.7	46.1	36.9	57.3*	53.7*	44.9*	53.8*	51.7*	45.4*						
	18:00 to 19:00	51.6	49.5	40.6	46.1*	45.4*	26.5*	70.8	63.9	27.5	49.6	47.6	41.7	53.8*	52.1*	44*	49.0	48.1	41.2						
	19:00 to 20:00	51.5	48.9	42.1	45.8*	45.5*	27.1*	55.4	48.0	26.7	56.7	50.9	33.8	53.4*	53.5*	40.5*	50.7	49.6	38.1						
	20:00 to 21:00	49.8	46.7	38.6	47.3*	46.5*	26.5*	34.6	39.2	24.4	42.5	41.0	32.3	53.1*	50.3*	40.3*	41.9	45.2	31.0						
	21:00 to 22:00	45.5	42.2	29.0	45.5*	44.3*	27.5*	30.1	37.1	23.6	37.4	36.3	27.2	52.6*	48.5*	34*	38.2	44.5	29.8						
	22:00 to 23:00	48.4	45.5	27.6	47.3*	47.4*	30*	27.3	25.7	23.7	28.4	26.4	23.1	41.2*	40.4*	32.2*	37.4	40.6	28.1						
	23:00 to 0:00	44.7	41.9	30.7	45.8*	44.3*	29.8*	27.7	34.6	19.2	30.8	29.0	24.6	34.3*	31.7*	27.2*	38.1	36.4	25.2						

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Logger Summary - 79 Church Rd



Logger Summary - 79 Church Rd





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Appendix A - Noise Logger Summary

Project No.	227318	Date	27 February 2026	Sheet	5
Project Title	Gippsland BESS	Engineer	LF	Rev	1
Description	LG	Type	LG		

Logger Location	545 Tramway Rd
Microphone Position	Freefield, 1.5m Height

		Fri, 30 Jan 2026			Sat, 31 Jan 2026			Sun, 01 Feb 2026			Mon, 02 Feb 2026			Tue, 03 Feb 2026			Wed, 04 Feb 2026			Thu, 05 Feb 2026			Fri, 06 Feb 2026		
		L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	
Daily Averages	LA10,18h	45.9			44.0			44.9			43.0			48.4			40.4			43.0			45.9		
	LAeq,24h		44.8			42.6			43.5			43.8			55.0			42.1			44.8			47.1	
	LAeq,16h		46.3			44.1			41.4			44.3			51.8			42.1			44.8			45.1	
	LAeq,8h		34.7			42.9			0.0			58.0			42.3			44.4			49.1			48.5	
	LA90 Day						34.8						36.1					30.2					32.0		35.1
	LA90 Evening			39.2			38.1					30.8			41.4			37.7					41.5		40.7
	LA90 Night			30.2			36.4					45.2			34.5			35.7					41.8		42.4
Hourly Values	00:00 to 01:00				33.5	31.5	29.3	49.2	45.5	37.8	40*	40.9*	34.4*	59.5	56.0	48.1	40.7	40.0	32.5	40.1	38.4	34.1	47.0	44.7	39.1
	01:00 to 02:00				33.3	31.3	29.2	47.1	43.6	37.2	40.7*	38.6*	32.9*	59.6	56.3	49.3	43.7	42.7	33.2	42.1	41.1	35.3	49.9	47.4	40.7
	02:00 to 03:00				35.5	33.3	30.3	46.8	43.8	37.6	41.7*	42.4*	34.5*	62.5	58.9	51.2	43.2	41.2	34.5	43.8	43.2	36.1	54.9	51.8	45.0
	03:00 to 04:00				33.9	32.3	30.2	47.3	44.0	38.3	46	41.9*	35*	66.6	62.4	52.1	45.0	42.7	36.6	43.7	43.6	36.8	53.2	51.0	44.7
	04:00 to 05:00				33.6	32.0	30.0	46.5	43.8	37.2	47.5*	43.5*	33.5*	58.3	55.1	48.1	44.4	44.5	35.1	44.4	45.0	36.4	54.3	51.5	45.7
	05:00 to 06:00				36.5	34.4	30.8	43.4	40.3	35.2	48.9*	45.8*	39.4*	64.8	61.5	49.8	42.7	39.9	35.1	46.5	49.6	36.8	51.7	48.9	44.0
	06:00 to 07:00				38.2	39.0	29.6	44.9	41.4	35.8	52.8*	49.1*	39.5*	64.7	61.1	51.7	47.0	45.9	35.2	46.8	45.8	38.3	51.2	49.0	41.4
	07:00 to 08:00				42.2	45.5	29.4	50.1*	46.6*	38.1*	54.0*	50.8*	45.8*	59.3	56.8	46.2	49.4	46.3	36.2	50.6	47.2	37.0	50.5	47.8	42.2
	08:00 to 09:00				41.2	41.0	30.1	51.7*	49*	40.5*	47.4*	47.5*	40.8*	53.4	50.3	39.5	37.2	36.2	29.2	49.2	46.2	37.6	46.7	43.9	38.6
	09:00 to 10:00				39.4	40.9	32.0	55.7*	52.3*	44.2*	46.1	44.6	36.3	49.6	46.4	37.4	36.8	34.2	28.2	42.6	38.8	32.0	47.1	43.8	37.5
	10:00 to 11:00				42.0	42.8	32.7	58.9*	55.3*	47.2*	41.9	38.7	32.0	53.7	49.5	36.3	39.7	36.2	29.5	36.5	35.5	32.2	43.8	40.4	34.2
	11:00 to 12:00				39.9	40.1	34.7	59.5*	56*	48.1*	40.7	40.0	32.5	43.0	40.3	35.6	36.9	34.3	27.6	37.1	43.8	30.4	38.9	35.9	29.9
	12:00 to 13:00				40.5	40.4	34.8	59.6*	56.3*	49.3*	43.7	42.7	33.2	40.4	38.8	33.9	34.9	33.1	29.3	34.1	32.2	28.9	38.4	36.0	30.7
	13:00 to 14:00				42.2	43.3	33.9	62.5*	58.9*	51.2*	43.2	41.2	34.5	40.0	40.9	34.4	33.3	31.0	28.0	33.2	31.3	28.1	39.2	38.3	33.7
	14:00 to 15:00	43.2*	42.8*	35.4*	45.5	42.4	35.6	66*	62.4*	52.1*	45.0	42.7	36.6	40.7	38.6	32.9	35.1	32.7	29.2	33.6	33.2	28.7	39.6	37.8	35.0
	15:00 to 16:00	45.2*	42.7*	38*	48.0	46.2	38.5	58.3*	55.1*	48.1*	44.4	44.5	35.1	41.7	42.4	34.5	34.9	32.9	29.9	39.1	36.5	30.4	40.1	38.7	33.6
	16:00 to 17:00	47.2*	46.2*	37.1*	49.4	46.5	41.2	64.8*	61.5*	49.8*	42.7	39.9	35.1	46.0	41.9	35.0	36.9	34.6	31.5	41.8	38.5	32.2	42.4	39.5	34.9
	17:00 to 18:00	53.4*	49*	38.9*	49.9	47.0	40.2	64.7*	61.1*	51.7*	47.0	45.9	35.2	47.5	43.5	33.5	41.1	38.2	33.9	43.7	40.8	34.7	45.6	42.0	36.2
	18:00 to 19:00	50.9	47.4	39.4	48.5	46.0	37.7	59.3*	56.8*	46.2*	49.4	46.3	36.2	48.9	45.8	39.4	41.9	39.2	34.8	47.2	43.9	37.6	49.0	45.8	37.6
	19:00 to 20:00	48.9	45.6	38.7	50.2	46.7	39.4	53.4*	50.3*	39.5*	37.2	36.2	29.2	52.6	49.1	39.5	45.3	45.0	38.1	49.5	47.1	40.7	50.1	47.8	40.2
	20:00 to 21:00	50.2	47.7	42.0	48.2	45.0	39.1	49.6*	46.4*	37.4*	36.8	34.2	28.2	54.0	50.8	45.8	47.9	47.2	39.9	53.9	51.3	45.3	51.6	49.4	42.1
	21:00 to 22:00	45.9	42.8	36.8	44.0	40.9	36.1	53.7*	49.5*	36.3*	39.7	36.2	29.5	47.4	47.5	40.8	46.0	47.2	38.1	48.2	48.6	42.5	51.2	49.0	42.7
	22:00 to 23:00	44.5	40.4	31.8	41.5	38.4	33.5	43*	40.3*	35.6*	36.9	34.3	27.6	46.1	44.6	36.3	42.5	43.4	34.2	44.2	46.0	38.5	50.5	49.8	42.0
	23:00 to 0:00	35.1	32.9	30.2	41.2	38.5	34.8	40.4*	38.8*	33.9*	34.9	33.1	29.3	41.9	38.7	32.0	39.5	40.5	33.0	42.5	43.8	37.2	49.5	46.5	41.3

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Appendix A - Noise Logger Summary

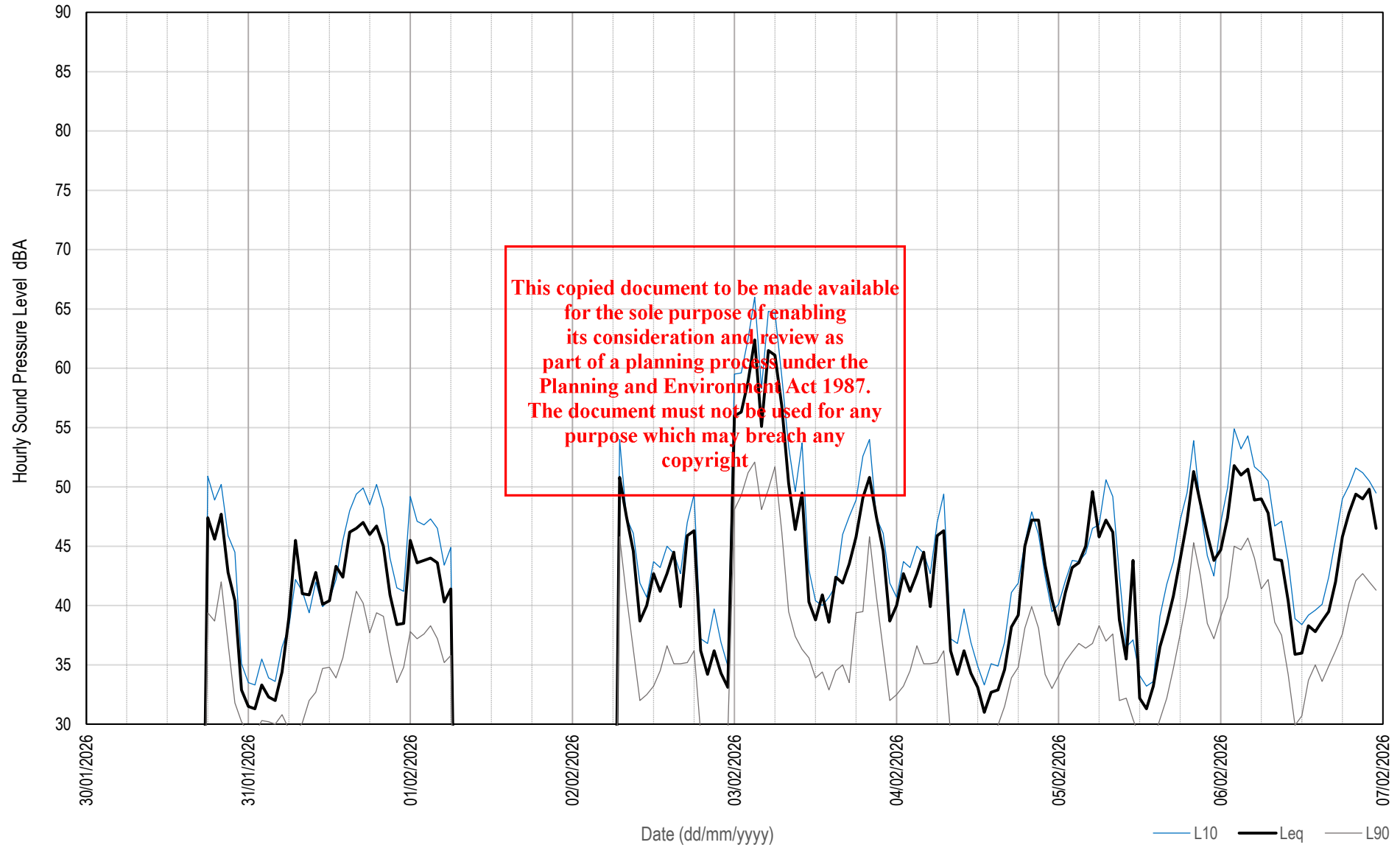
Project No.	227318	Date	27 February 2026	Sheet	6
Project Title	Gippsland BESS	Engineer	LF	Rev	1
Description	LG	Type	LG		

Logger Location	545 Tramway Rd
Microphone Position	Freefield, 1.5m Height

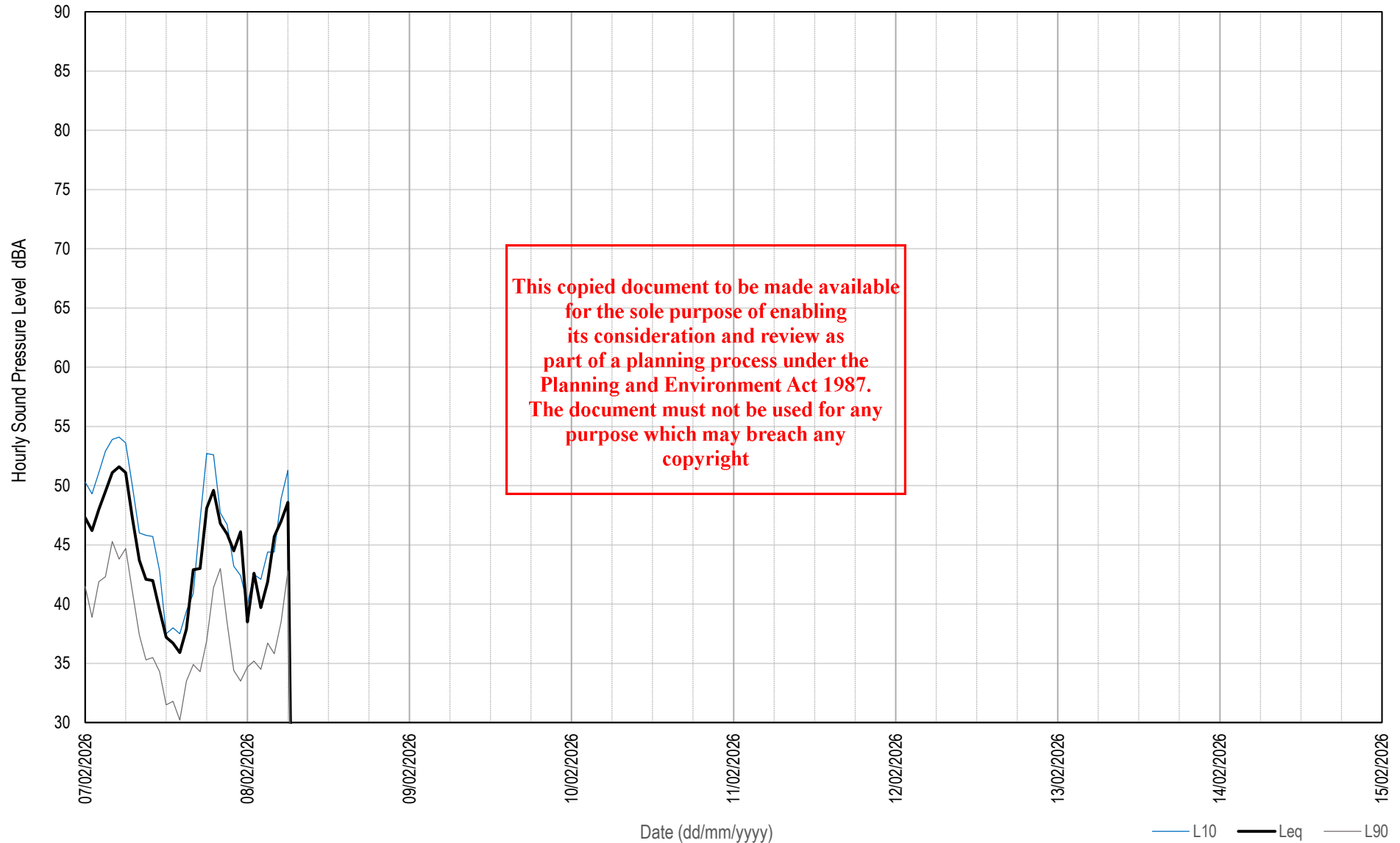
	Sat, 07 Feb 2026			Sun, 08 Feb 2026			Mon, 09 Feb 2026														
	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}	L _{A10}	L _{Aeq}	L _{A90}
Daily Averages	LA10, 18h			51.3																	
	LAeq, 24h	46.8			44.8			0.0			0.0			0.0			0.0			0.0	
	LAeq, 16h	45.3			48.6			0.0			0.0			0.0			0.0			0.0	
	LAeq, 8h	44.1			0.0			0.0			0.0			0.0			0.0			0.0	
	LA90 Day		34.5																		
	LA90 Evening		39.9																		
	LA90 Night		36.2																		
Hourly Values	00:00 to 01:00	50.3	47.3	41.5	40.0	38.5	34.7	37.3*	35.0*	27.4*											
	01:00 to 02:00	49.3	46.2	38.9	42.5	42.6	35.2	36.7*	34.5*	30.0*											
	02:00 to 03:00	51.1	48.0	41.9	42.1	39.7	34.5	37.6*	36.8*	33.6*											
	03:00 to 04:00	52.9	49.5	42.3	44.4	41.9	36.7														
	04:00 to 05:00	53.9	51.1	45.3	44.4	45.7	35.8														
	05:00 to 06:00	54.1	51.6	43.8	48.9	47.0	38.5														
	06:00 to 07:00	53.6	51.1	44.7	51.3	48.6	42.8														
	07:00 to 08:00	49.9	47.2	41.0	50.5*	49.6*	41.6*														
	08:00 to 09:00	46.0	43.7	37.4	47.8*	44.4*	37.4*														
	09:00 to 10:00	45.8	42.1	35.3	45.8*	42.7*	36.4*														
	10:00 to 11:00	45.7	42.0	35.5	42.7*	38.8*	29.5*														
	11:00 to 12:00	42.8	39.5	34.3	41.3*	37.1*	29.3*														
	12:00 to 13:00	37.5	37.2	31.5	36.2*	33.3*	27.8*														
	13:00 to 14:00	38.0	36.7	31.8	34.2*	31.6*	27.6*														
	14:00 to 15:00	37.5	35.9	30.2	38*	35.3*	30.5*														
	15:00 to 16:00	39.4	37.9	33.5	39.2*	37.2*	32.3*														
	16:00 to 17:00	40.9	42.9	34.9	38.8*	36.8*	33.3*														
	17:00 to 18:00	47.1	43.0	34.3	40.4*	38.1*	33.2*														
	18:00 to 19:00	52.7	48.1	36.9	42.4*	42.6*	33.4*														
	19:00 to 20:00	52.6	49.6	41.4	38.8*	37.2*	32.7*														
	20:00 to 21:00	47.7	46.8	43.0	42.9*	44.2*	31.6*														
	21:00 to 22:00	46.7	45.9	38.4	48*	48.3*	32.2*														
	22:00 to 23:00	43.2	44.5	34.4	40.7*	43.7*	31.6*														
	23:00 to 0:00	42.4	46.1	33.5	42.3*	43.5*	33.5*														

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Logger Summary - 545 Tramway Rd



Logger Summary - 545 Tramway Rd



Appendix B

Victorian EPA

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B1.1 Victorian Environment Protection Act 2017

The Environment Protection Act 2017 (the Act) provides the following framework for the assessment of environmental noise:

- Describes objectives and a governance structure for the Environment Protection Authority (EPA).
- Sets out principles of environmental noise protection.
- Mandates a General Environmental Duty (GED) to minimise risk of harm to human health and the environment from pollution. The GED is at the centre of the Act.
- Provides the EPA with a framework and authority enabling authorised officers to enforce compliance prior to environmental harm occurring, a key change to the previous Environment Protection Act 1970.

Relevant to noise, a person undertaking a Design or Construction Activity is obligated to do the following:

- **General Environmental Duty (GED):** Minimise risks of harm to human health or the environment from pollution or waste (noise) which may arise from the design or construction activity so far as reasonably practicable and therefore perform their duty under Section 25(1) of the Act.
- **Unreasonable Noise:** Ensure that no unreasonable noise is emitted or permitted to be emitted from the facility and therefore satisfy their obligations under Section 166 of the Act.

B1.2 Environment Protection Regulations (EPR)

The *Environment Protection Regulations 2021* (EPR) give effect to the Act by imposing obligations in relation to noise pollution and permissible activities under the Act, specifying and restricting activities in relation to environmental noise.

The Regulations made under the Act:

- 1 Provide regulations necessary to enable elements of the environment protection legislation to function
- 2 Prevent significant consequences from specific types of pollution or waste
- 3 Prevent significant risk of mismanagement
- 4 Provide certainty and consistency required by duty holders.

The EPR defines noise sensitive areas as:

- Residential premises
- Retirement villages
- Hospitals
- Child-care centres
- Kindergartens
- Primary and secondary schools
- Tourist establishments
- Camping grounds
- Caravan parks in rural areas.

B1.2.1 Time period definitions

Table B.1 details the time periods for the assessment of commercial, industrial and trade premises noise, as defined by the EPR.

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Table B.1 Time Period definitions

Weekday	Time period		
	Day	Evening	Night
Monday to Saturday	0700 to 1800 hours	1800 to 2200 hours	2200 to 0700 hours
Sundays and Public Holidays	-	0700 to 2200 hours	

B1.3 General Environmental Duty (GED)

The Act introduced a new approach for environmental protection and human health focused on a prevention-based approach rather than reactive measures to reduce risk of environmental harm. This approach is underpinned by the General Environment Duty (GED), which is outlined under Section 25(1) (Part 3.2) of the Act.

A definition of GED and its implications are provided below (excerpt from EPA 1741.1 *Industry guidance: supporting you to comply with the general environmental duty*):

A person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable.

Reasonably practicable means putting in controls that are proportionate to the risk.

It relates to the chance of harm occurring and potential impacts on the environment. It also relates to what controls are available, their cost, and the benefits of accepting knowledge about the risk and control options. This is termed the 'state of knowledge'.

The expression, 'state of knowledge', describes the body of accepted knowledge that is known or ought to be reasonably known about the harm or risks of harm to human health and the environment and the controls for eliminating or reducing those risks.

Under the GED, you are required to have reasonable knowledge about the risks your activities pose, and how to address them.

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Additionally, EPA Publication 1856 *Reasonably Practicable* (EPA 1856) focuses on the GED to minimise risks of harm to human health or the environment, so far as reasonably practicable. 'Reasonably practicable' means that proportionate controls must be undertaken to mitigate or minimise the risk of harm. Typically, this would mean elimination or substitution of the source, followed by engineering/building controls and finally by training and site management (often a combination of all mitigations).

Proportionate means the greater the risk of harm, the greater the expectation for you to manage it. This is done by demonstrating that the most suitable controls available have been considered to eliminate/minimise the risk of harm. Six factors come into play: Elimination, Likelihood, Degree (consequence of harm), Knowledge of Risk, Availability and Suitability of Controls, and Costs.

It is important to note that responding to duties under Section 25(1) of the Act is separate from the obligations outlined under Section 166 of the Act (unreasonable noise).

B1.4 Unreasonable noise

Under Section 166 of the Act, a person must not emit or permit the emission of unreasonable noise from a place or premises that are not residential premises. For clarity, Section 168 of the Act also defines 'aggravated noise', which is applicable to the following:

- Commercial, industrial and trade premises
- Entertainment venues

- Events.

Unreasonable noise is defined in section 3(1)(a) of the Act as noise that is unreasonable having regard to the following:

- (i) its volume, intensity or duration
- (ii) its character
- (iii) the time, place and other circumstances in which it is emitted
- (iv) how often it is emitted
- (v) any prescribed factors.

Unreasonable noise may also be defined as noise that is prescribed in the Regulations to be unreasonable noise or prescribed to be not unreasonable noise.

EPA considers noise from the following sources as able to generate unreasonable noise:

- Commercial, industrial and trade premises
- Indoor entertainment venues
- Outdoor entertainment venues and events
- Construction and demolition sites
- Transport infrastructure such as roads and railways (passenger services exempted).

While the Regulations do not prescribe what is unreasonable noise for construction and demolition sites and transport infrastructure, those sources must comply with section 166 of the Act by reference to paragraph (a) of the definition of unreasonable noise and the GED. The legislative exceptions to this are presented in the following section.

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