

MEMORANDUM



240182 – SYD086 SSSA 73761707 - PWNA Response – R1

COMPANY: LCI
FROM: Nikolaj Drydale-Cech
SUBJECT: Response to comments

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Response to the EPA comments

The following memorandum provides responses to the NSW Environmental Protection Authority's (EPA's) commentary on the previously submitted *Noise and Vibration Impact Assessment (NVIA)* (Ref *GRDC86-PWN-00-XX-RP-SSDA-Y-0000*, dated 14 March 2025).

The EPA's commentary is reproduced below, with PWNA responses following each comment:

1. Licensing Considerations

The EPA notes that the premises will require an EPL due to the capacity to store diesel fuel, and not electricity generation. Operational noise associated with all activities carried out on the premises are to be assessed and will be regulated through the EPL.

Recommendation: The EPA notes that as the premises will be required to be licensed under the POEO Act, operational noise associated with all activities on the premises is required to be assessed. This includes assessment of emergency generators.

PWNA Response:

The updated NVIA (Rev K) includes an assessment of the full systems emergency mode for the nighttime period. The updated NVIA provides a discussion within Section 7.2.2.2 which presents all of the mitigation measures added to the diesel generators. Both numerical and visual contour predictions are also presented within the updated NVIA.

Additionally, the current proposal has revised the quantify of diesel fuel stored on the premises. The current proposal will not require an EPL due to the quantify of diesel fuel stored on site.

2. Exceedances of project noise trigger levels

Table 27 of the NIA states that "Where the calculated noise levels are within +/- 2 dB of the specified level given above, the criteria will be considered achieved. The reason for this is because a 1-2 dB difference is difficult to perceive subjectively." The EPA notes that this statement is not in line with the NPfI. The NPfI requires that if predicted noise levels are above the project noise trigger level, all feasible and reasonable mitigation is applied prior to assessment of residual impacts.

Additionally, predicted noise levels for Scenario 06 have not been compared against the project noise trigger levels. Based on the predicted noise levels, exceedances of up to 17dB are predicted, and as such, all reasonable and feasible mitigation should be considered.

The EPA notes that the consideration of 'reasonable' mitigation involves considering whether the overall noise benefits outweigh the overall adverse social, economic and environmental effects, and can include a discussion of the duration and frequency of the predicted exceedances along with any other relevant consideration. This level of mitigation may not be required for the assessment of emergency situations.

Recommendation: The EPA requests the Applicant compare all predicted levels against the Project Noise Trigger Level (PNTLs), and where exceedances are identified, consider all reasonable and feasible mitigation before assessing residual impacts.

PWNA Response:

The generator testing regime has been revised to reduce the operational load of the diesel generators during the daytime testing period. As such, of the 20x generators tested simultaneously, 17x generators will operate at a reduced 25% load, whilst the remaining 3x generators will operate at 100% with the previous sound power level.

This update results in compliance for all considered receivers (including the additional 25 receivers added to the assessment within this revision).

Additionally, the full emergency scenario (previously Scenario 06 (now Operational Scenario 09)) has been assessed against the nighttime PNTL. Further discussions for the full emergency scenario are detailed within Section 7.2.2.2.

3. Modelling inputs

Under Section 5.4, the descriptions of Scenarios 4 and 5 state that "The modelled location of the generator / load bank represents the worst-case assessment for this scenario. The modelled generator / load bank location is not intended to restrict generator testing operations to this one specific location." The modelled generator is presented in Figure 13 as located in the northwestern corner of the proposal. While this appears to be the worst-case assessment scenario for NCA 1, for NCAs 2 and 3 the worst-case generators are likely to be different due to their different orientations to the premises. As the generator testing is not intended to be restricted to that one specific location, the assessment indicates an unknown level of risk, which should be addressed by further consideration of the worst-case configuration for NCAs 2 and 3.

Recommendation: The EPA requests the Applicant provides the predicted noise levels for the worst-case generator testing scenarios proposed.

PWNA Response:

The updated NVIA includes separate operational scenarios (Operational scenario 05, 06, and 07) with both quantitative noise emissions and contour maps for each data centre that is proposed to operate with a generator and load bank during the evening period. These considered scenarios represent the worst-case scenario for each NCA during the evening period.

4. Assessment Locations

Predicted noise levels for emergency generator operation (Scenario 6), presented in Table 28 of the NIA, shows that there are multiple exceedances of the PNTLs. The noise contours presented in Appendix D indicate that there are additional receivers exceeding the PNTLs that have not been included in the extent of the maps. The assessment should identify all receivers predicted to be above the PNTL for each assessed scenario.

Additionally, the noise contours in Appendix D indicate that there are receivers further set back from Phillip Parkway receiving similar impacts to the assessed receivers adjacent to the road. Since these set back receivers are further from these roads, the existing traffic noise level correction applied may result in more stringent PNTLs or may not be applicable. The predicted noise levels for these receivers have not been tabulated, and the EPA cannot confirm whether the PNTLs would be achieved without the inclusion of the existing traffic noise correction. As such, there is a risk that the most affected receivers (with the greatest difference between PNTL and predicted impact) may not have been identified.

Recommendation:

- a. The EPA requests the Applicant provides the predicted noise levels for all receivers predicted to experience noise levels above the PNTLs for all assessed scenarios.
- b. The EPA requests the Applicant identify and assess impacts against the most-affected receivers. In practice, this may not just be the closest receivers, as the receivers further away from roads may experience similar impacts from the premises with less influence from the existing traffic noise level correction in the derivation of PNTLs.

PWNA Response:

The updated NVIA includes additional unattended noise monitoring (located at 9 Carroll Crescent, Plumpton) to establish an additional noise catchment area (NCA01B) for all residential receivers located to the west of the project site, that are not located directly along the M7. Further, an additional 25x receivers have been added within this area (include many that are located further back from the M7) to address the concerns around receivers that are further shielded from M7 road traffic noise being adversely affected from the project site.

Additional noise mitigation has been added to DC02 to address some receivers that were found to exceed the now more stringent noise criteria.

The operational noise contours within Appendix D have also been 'zoomed out', allowing for a greater, overall view of the proposed development.

5. Annoying characteristics of noise

Section 5.6 is unclear on whether the third-octave measurements taken to inform the assessment of low frequency noise includes the operation and testing of the emergency generators. Annoying characteristics from noise associated with all activities undertaken on the premises are to be assessed.

Recommendation: The EPA recommends that DPHI request the Applicant to clarify whether all relevant noise sources associated with the proposal have been included in the assessment of annoying characteristics of noise.

PWNA Response:

The low frequency assessment section has been revised to include a detailed analysis of low frequency noise impacts for all considered receivers for the daytime generator testing scenario (Operational Scenario 08) which represents the scenario with the greatest potential for low frequency noise impacts.

The assessment concluded that none of the noise sensitive receivers were found to exceed the low frequency screening criteria. Hence, no further consideration of the unbalanced spectrum is required.

6. Background noise monitoring

The unattended noise monitors used to determine background noise levels for NCA 1 and 2 appear to be in or directly adjacent to foliage. Fact Sheet B of the NPFI specifically states that "Data loggers should be sited as far away from trees as practicable to avoid noise produced by wind blowing through foliage". The microphone also appears to be located higher than the 1.2 - 1.5m height above ground level specified in Fact Sheet B and potentially influenced by a greater exposure to traffic noise. As such, there is potential that the background noise levels used to inform the PNTLs are excessively influenced by foliage noise and/or traffic noise, and as a result, may be unrepresentative of the surrounding environment.

Recommendation: The EPA requests the Applicant justify whether the background noise monitoring undertaken for NCA 1 and 2 is appropriate.

PWNA Response:

PWNA can confirm that the noise logger 01 was not placed within a tree for the measurement periods (the noise logger was temporarily located within a tree during the setup phase (to avoid a dog within the backyard). The noise logger photo has been updated within the appendix which illustrates the actual location of the logger for the measurement period, at a height of ~1.3 m above the ground. This issue occurred due to a communication error with the engineer of site, and the author of the NVIA.

PWNA can also confirm that during the installation of the noise loggers located near trees (noise logger 01 and 02) featured minimal leaves, with stiff branches that were not observed to result in any wind induced noise from rustling etc. during the setup time. It is not always possible to locate a noise logger within a property that is not within proximity to a tree.

It remains the opinion of PWNA that both noise loggers 01 and 02 are representative of the background noise environment, and have not been affected by any wind induced noise resulting from the installation position.

7. Construction Noise

Section 4.4 of the NIA notes that out-of-hours works may be required where works 'are determined to comply with the relevant Noise Management Level (NML) at the most affected sensitive receiver'. Section 2.3 of the Interim Construction Noise Guideline (ICNG) does not include this as a reason for undertaking works outside standard construction hours.

Recommendation: The EPA recommends the applicant considers whether any request for works outside standard construction hours meets the requirements outlined in Section 2.3 of the ICNG.

PWNA Response:

The updated NVIA has removed all mention of this reason for out of hour construction works.

Response to the DPHI comments

5. Cumulative noise impacts

The Department notes that Section 6.2 of the Noise and Vibration Impact Assessment (NVIA) asserts that cumulative noise impacts are inherently addressed through the application of the intrusiveness and amenity noise criteria outlined in the NSW Noise Policy for Industry (NPfI). However, this response is considered insufficient for the following reasons:

The NVIA does not adequately assess how the staged construction of the data centre buildings may influence the acoustic environment, particularly in relation to existing warehousing operations and future demolition and construction activities. The Department requires a detailed analysis of whether the constructed buildings (DC01 and/or DC02) may amplify noise emissions from neighbouring warehousing or construction activities through façade reflections or altered propagation paths.

PWNA Response:

See response to item number 6 below.

6. Cumulative noise impacts continued

Should the constructed buildings be found to materially increase noise levels at sensitive receivers—particularly where such increases exceed existing noise limit obligations—the NVIA must identify appropriate temporary mitigation measures. These may include, but are not limited to, the installation of temporary acoustic barriers, relocation of noise-generating equipment, or operational restrictions during sensitive periods.

PWNA Response:

We interpret this concern as the existing warehousing operations located on the same project site, and not neighbouring industrial developments. As it will not be possible to accurately equate the contribution from the neighbouring properties, and / or how the noise emissions will interfere with noise emissions from the project site.

As such, the client has confirmed that all existing operations on the project site will not be operational when DC01 begins the construction phase. However, the northernmost existing warehouse building will be used as a construction site office during the construction / operation for DC01, before being demolished to make way for DC03.

There will be no cumulative noise effects occurring from the project site with any of the previous warehousing operations. Additionally, all existing structures (excluding the northernmost warehouse building) will / have already been demolished, and will not create any cumulative noise / vibration impacts that will affect the construction / operational phases of the proposed development (including the construction / operation of DC01, DC02, and DC03)

Changes made to the NVIA are located within Section 6.2 Operational cumulative impacts.

7. –

In accordance with Section 6 of the Interim Construction Noise Guideline, the NVIA must consider how the presence of partially constructed buildings may affect the effectiveness of existing mitigation strategies.

Where necessary, the assessment should recommend provisions to avoid placing noise-generating equipment in locations where reflected noise may increase exposure at sensitive receivers.

PWNA Response:

The updated NVIA includes updated construction scenarios that include the staged construction of the data centre campus, including the added reflections from the partially constructed buildings. An additional recommendation has been added to avoid placing noise-generating equipment in locations where reflected noise may increase exposure at sensitive receivers. This change is located within Section 7.1.3 General comments of the NVIA.

8. – 9

The Department requires the NVIA to be updated to include a breakdown of the operational noise contributions from the data centre at each stage of development. This should include quantitative predictions of noise levels associated with the operation of DC01, DC02, and DC03 individually and cumulatively, to ensure that noise impacts are appropriately managed throughout the development lifecycle.

The Department expects these matters to be addressed in an updated NVIA to ensure that cumulative and progressive impacts are fully considered and mitigated in accordance with relevant policy and guidelines.

PWNA Response:

This response address both items number 8 and 9.

The updated NVIA includes additional quantitative and contour map results for these additional operational scenarios (Operational Scenarios 03 and 04) which include the noise emissions from DC01, and DC01 + DC02. There is no scenario where other data centres will operate in different combinations (e.g. DC02 + DC03 only).

These scenarios have been assessed for the nighttime period, which represents the most stringent period.

10. – Low frequency noise

The Department notes that Section 5.6 of the Noise and Vibration Impact Assessment (NVIA) asserts that the proposed data centre development is unlikely to result in operational noise with dominant low-frequency content at surrounding sensitive receivers. This conclusion is based on reference to noise measurements taken at an existing data centre with similar mechanical equipment.

However, the Department considers this justification to be insufficient for the following reasons:

- The NVIA does not provide full spectral data (10–160 Hz) from the referenced site, nor does it include the measurement methodology, equipment specifications, or prevailing operating conditions at the time of measurement.
- It is unclear whether the referenced data reflects worst-case operational conditions, including simultaneous operation of back-up generators and mechanical plant.

- The NVIA does not demonstrate whether appropriate adjustments have been made to account for differences in site layout, equipment configuration, or propagation conditions between the reference site and the proposed development.

Accordingly, the Department requests that the Applicant provide the additional information using the table format in Attachment 2.

PWNA Response:

The low frequency assessment section has been revised to include a detailed analysis of low frequency noise impacts for all considered receivers for the daytime generator testing scenario (Operational Scenario 08) which represents the scenario with the greatest potential for low frequency noise impacts. The assessment concluded that none of the noise sensitive receivers were found to exceed the low frequency screening criteria. Hence, no further consideration of the unbalanced spectrum is required.

11. –

The Department notes that 'Note 1' accompanying Tables 27 and 28 of the Noise and Vibration Impact Assessment (NVIA) asserts that:

"Where the calculated noise levels are within +/- 2 dB of the specified level given above, the criteria will be considered achieved. The reason for this is because a 1–2 dB difference is difficult to perceive subjectively. Additionally, the type of receiver (passive recreational) and the fact that potential exceedance is limited to only testing hours (not a continuous or highly regular event) while under adverse weather conditions only. Further, during periods of adverse weather, the background noise level (resulting from the rustling of tree leaves etc.) will likely be suitably loud to preserve the amenity of the passive recreational area while back-up power systems are being tested."

The Department does not support this interpretation. The NSW Noise Policy for Industry (NPfI) clearly states that where predicted noise levels exceed the project noise trigger levels, all feasible and reasonable mitigation measures must be applied before assessing the significance of any residual impacts.

PWNA Response:

The daytime generator testing regime has been revised to reduce the operational load of the diesel generators during the daytime testing period. As such, of the 20x generators tested simultaneously, 17x generators will operate at a reduced 25% load, whilst the remaining 3x generators will operate at 100% with the previous sound power level.

This update results in compliance for all considered receivers (including the additional 25 receivers added to the assessment within this revision).

12. –

The NVIA does not demonstrate that all feasible and reasonable mitigation measures have been considered or implemented for the generator testing scenarios. In particular, there is no evidence that alternative testing schemes, operational scheduling, or additional acoustic treatments have been explored to reduce noise levels below the applicable criteria.

Accordingly, the Department requests that the updated NVIA include:

- A detailed assessment of feasible and reasonable mitigation measures specifically for generator testing scenarios;
- Consideration of alternative testing schedules, load bank configurations, or acoustic treatments;
- Justification for any residual exceedances, including a demonstration that further mitigation is not practicable.

Please provide this information in the updated NVIA and ensure that all assumptions and mitigation strategies are clearly documented.

PWNA Response:

See response for Item 11 above.

The updated NVIA results in compliance for all considered receivers (including the additional 25 receivers added to the assessment within this revision) for all generator testing operational scenarios,