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Attention: Mr Lander Robinson

EPA Advice on Environmental Impact Statement

Dear Mr Robinson

Thank you for the request for advice from Public Authority Consultation (PAE-36410475), requesting the review by the NSW Environment Protection Authority (EPA) of the Environmental Impact Statement (EIS) for the proposed Wallerawang Battery Energy Storage System – SSD-14540514 (the project) at the former Wallerawang Power Station.

The EPA has reviewed the following documents:

- Wallerawang Battery Energy Storage System: Environmental Impact Statement and supporting documents.

The EPA understands the proposal is for:

1. Large scale Battery Energy Storage System (BESS) including battery enclosures, inverters, and transformers
2. 33/330kV switchyard
3. Overhead transmission line connection between the BESS and the nearby TransGrid Wallerawang 330kV substation
4. Ancillary elements including site access from the Castlereagh Highway, internal access roads and parking, site office and amenities, stormwater and fire management infrastructure, utilities, signage, fencing, security systems and landscaping

Based on the information provided, the proposal is to be constructed "within the land subject to an existing Environment Protection Licence (EPL 766) for the Wallerawang Power Station (WPS) and surrounding area". The scheduled activity on the WPS EPL is no longer for the generation of electricity, the scheduled activity is now 'crushing, grinding or separating'. The EPA acknowledges that at present the proposed project in isolation is not listed within Schedule 1 of the *Protection of the Environment Operations Act 1997* (the POEO Act).

The project is proposed to be constructed on land subject to an existing EPL, the EPA has therefore reviewed the EIS in accordance with EPA policy with regards to the assessment procedures of new / modified developments on land subject to a new or an existing EPL.

The EPA has the following additional comments and recommendations:

1. Matters to be addressed prior to determination

Noise Impact Assessment

The EPA considers that the Noise Impact Assessment (NIA) does not currently satisfy the requirements set out in the SEARs and does not provide sufficient information and assessment of operational and construction noise in accordance with the Noise Policy for Industry (NPfI), and Interim Construction Noise Guideline (ICNG) respectively. This makes understanding the risk of noise impacts from the proposal unclear based on the assessment and information currently in the NIA. As such, the EPA is not able to assess the NIA associated with the proposal.

The EPA requires clarification, further information or potential amendment regarding the following matters:

a. Receiver Identification and Organisation

Reviewing the tables of receivers in the NIA appendices, it's not clear how the usage of receivers has been determined. For example, the receiver at 9 Springvale Lane has been classed as "Rural/Primary Production", however satellite imagery clearly indicates the presence of a residential dwelling. It's not clear if receivers with these classifications have been considered in the assessment as residential dwellings under a Noise Policy for Industry (NPfI) assessment.

Receivers in the tables in the NIA appendices and the noise maps have been assigned an ID number, however they appear to have been assigned the number in an arbitrary manner. The tables in the appendices also do not appear to order receivers in a logical way (for example, by location, street, NCA, ID number etc) and in conjunction with the apparent arbitrary ID numbering make it difficult to locate receivers and their neighbours.

Recommendation: The proponent must clarify the receiver type according to the NPfI and Clarify ID numbers and the layout of tables.

b. Background Noise Monitoring

The address of monitoring location L1 (4 Millers Road, Marrangaroo) is around 100m from the Castlereagh Highway and appears to be the nearest residential receiver to the proposed battery enclosures.

NIA Figure 2 has defined Noise Catchment Area (NCA) 2 as essentially all receivers not within the Wallerawang township. NIA Figure 2 used measurements at L1 to define the Rating Background Level (RBL) for the whole of NCA 2. However, as location L1 is relatively close to the highway and would be significantly influenced by passing and distant vehicles, it appears inappropriate to use these measurements to be representative of RBLs at distances further from the highway. For potentially affected receivers that are further than L1 from the highway, additional data could be supplied, or a conservative approach used such as the minimum values from the NPfI.

Recommendation: The NIA must be amended to include appropriate RBLs to represent potentially affected receivers.

The EPA does not support use of measurement location L1 to represent RBLs across the whole of NCA2 and recommends that the NCA and RBLs are amended to be more representative of potentially affected receivers. Additional data or a sufficiently justified alternative approach should be used in the amendment.

c. Assigned Rating Background Levels and Project Noise Trigger Levels

There appears to be inconsistency between the allocation of RBL data from locations L1 and L2 to NCAs 1 and 2. For example:

- NIA Figure 2, L2 is assigned to NCA 1 and L1 is assigned to NCA 2.
- NIA Table 1, L1 is listed as 4 Millers Road, Wallerawang which appears to be in NCA 2 and L2 is listed as 2 Blaxland St, Wallerawang which appears to be in NCA 1.
- NIA Table 4 lists NCA 1 with L2 (2 Blaxland St) and NCA2 as L1 (4 Millers Rd).
- NIA Table 6, Table 8 and the Appendices appear to have assigned RBLs and PNTLs from L1 to NCA 1 and L2 to NCA 2.

Recommendation: The EPA recommends that the inconsistencies in the assignment of RBLs are clarified and the NIA amended accordingly, including taking into account the appropriateness of the RBLs based on the other concerns raised within this advice. A full assessment of the NIA cannot occur until RBLs, noise management levels and Project Noise Trigger Levels (PNTLs) have been confirmed.

d. Operational Noise Assessment

The operational noise assessment and mitigation may need to be revised following clarification of the PNTLs. At present, there is inconsistency between RBLs assigned to NCAs. Therefore, if the incorrect RBL has been assigned to receivers, this may change the PNTL and therefore also mitigation outcomes such the site layout and barriers.

However, regardless of the potential inconsistency with the RBLs, additional matters were identified that should be addressed as follows:

i. Reduction of fan sound power levels

NIA Table 16 appears to imply that the difference in sound power level per fan unit is around a 9 dB reduction between 80% to 40% fan duty, and around a 14 dB reduction from 80% to 20% fan duty. However, it's not explained how this reduction has been achieved, calculated or what assumptions or information has been used to generate these levels.
Recommendation: evidence must be provided in the NIA for the claimed sound power level difference between fan duty scenarios.

ii. Noise Sources

NIA Table 16 shows that the NIA has only considered noise from 33kV transformers and battery unit fans. However other noise assessments for BESS proposals in NSW have considered noise from other sources such as routine battery maintenance activities and inverters.
Recommendation: The NIA be amended to include clarification of the noise sources with potential to impact at receivers.

iii. NPfI Fact Sheet C Assessment

The NIA has not addressed all potential annoying characteristics as per NPfI Fact Sheet C which requires consideration of low frequency noise, tonality, and intermittency among others. Whilst the NIA has applied a tonality correction, the NIA does not appear to have addressed the other characteristics required under NPfI Fact Sheet C. Additional guidance on the assessment of low frequency noise was published in Acoustics Australia vol 48 No. 2 (https://doi.org/10.1007/s40857-020-00199-x).

Recommendation: The NIA must also provide an assessment of low frequency noise and intermittency, particularly as it appears there is potential for fans and other similar plant to turn on and off periodically during the night period.

iv. Assessment, mitigation, and residual impacts

NIA Chapter 7.7 has predicted noise levels above the PNTLs at multiple receivers during the day, evening, and night period for the 40% fan duty scenario. A separate prediction of a 20% fan duty scenario predicted no exceedances of the PNTLs.

The NIA states that during the night, the proposal will operate at 20% fan duty for greater than 99% of the time. However, it is not clear how often it will need to operate at 40% or higher during the evening and day period. Under the 40% and 80% duty scenarios, exceedances of the PNTLs are predicted in the day and evening periods, however the NIA has not provided sufficient evidence that all reasonable and feasible mitigation has been investigated. Chapter 3.4 of the NPfI states:
"When determining whether noise mitigation is 'feasible and reasonable', the starting point is identifying mitigation measures that would result in achieving the relevant project noise trigger levels, and then identifying why particular measures may not be either feasible or reasonable."

Therefore, the NIA should present the scenario where PNTLs are satisfied for all periods and then provide an analysis of reasonable and feasible measures (an example is provided in NPfI Table 3.1).
Where noise levels are predicted to be above the PNTLs, the NPfI has a clear and established process to be followed; mitigation to reduce noise levels at or below the PNTL is to be investigated and applied where reasonable and feasible. If after all reasonable and feasible mitigation has been exhausted, levels remain above PNTLs, a residual impact assessment in accordance with NPfI Section 4 is to be conducted.

From the NIA it's not clear what the proposed mitigation is, what if any residual impacts there will be and how they will be managed and if they have been assessed in accordance with the NPfI. The conclusion of the NIA in Chapter 8 appears to suggest that issues regarding noise levels being above the PNTLs can be resolved after approval. However, based on the information and assessment currently in the NIA, the EPA is not confident in this conclusion and considers that these matters need to be resolved further prior to a determination being made on the proposal.

Recommendation:

- **The NIA clarifies the proposed operating conditions/configuration of the premises for the day, evening, and night period;**
- **Clarifies the predicted impacts under the proposed operating conditions in each period;**
- **Presents a scenario where the PNTLs can be satisfied in each period;**
- **Provides an adequate assessment of reasonable and feasible mitigation (guidance can be found in Chapter 3 of the NPfI) and a final recommendation for mitigation and management; and**
- **Residual impacts are considered in the NIA according to Chapter 4 of the NPfI**

e. Construction Noise Assessment

i. Sound power levels and usage factors

NIA Table 13 sets out the equipment proposed to be used for each assessed construction scenario. It includes two different sound power level totals for each scenario, defined in NIA Chapter 6.1.2 as follows:
"The total activity sound power level is calculated as a logarithmic sum incorporating indicative operation time in a 15-minute period for impulsive equipment and the total number of plant items required within a 15-minute period."

This appears to imply that some sort of time correction has been applied to the sound power levels. However, this time correction is not stated in the report and no justification or evidence has been provided that it is appropriate. Therefore, from the information in the report it is impossible to understand how the total sound power levels were calculated.

It's also not clear if any penalties have been added to specific equipment with annoying characteristics as suggested by Chapter 4.5 of the Interim Construction Noise Guideline (ICNG).
In general, the EPA does not support the use of time corrections for noise sources unless it can be demonstrated that they would continually only be used at that utilisation. Construction scenarios should include a reasonable worst-case equipment configuration and sound power levels reported should be representative of that scenario.

Recommendation: The NIA transparently reports all assumptions and inputs used in the assessment and the construction scenarios are amended accordingly. The NIA should provide a justification and evidence that any time correction applied is appropriate.

ii. Consistency of scenarios assessed between EIS and NIA

EIS Chapter 4.3.1 details the activities required for site preparation. Whilst tree harvesting is not included in this proposal, the clearing of vegetation and grubbing to remove tree stumps does appear to be included. However, from NIA Table 13 it's not clear if this construction activity has been adequately considered.

Recommendation: The proponent clarifies the proposed construction activities and amends the NIA accordingly to include consideration of all proposed construction activities.

iii. Activity based sound power levels

NIA Table 13 lists the sound power levels for construction plant and equipment, however it's not clear if these sound power levels consider the noise from the activity, and not simply the engine/exhausts of the equipment carrying out the activity. If a sound power level does not adequately consider noise from the activity (and not just the equipment), it may underestimate noise emissions.

Recommendation: The proponent clarifies if the sound power levels adequately consider the construction activity. If equipment only sound power levels are used, the potential for additional noise created by the equipment carrying out an activity should be accounted for in the assessment.

iv. Access roads used for construction

It's not clear how the NIA has considered vehicle movements from construction related vehicles on the access roads both to the BESS compound and the Wallerawang 330 kV substation and transmission line path.

Recommendation: The proponent clarifies how the NIA has considered construction related vehicles on the access roads and amends the NIA accordingly.

v. Construction management and mitigation

NIA Table 14 predicts that at least 928 residential properties have the potential to be affected above the noise management levels during the construction of the proposal. The ICNG requires that all reasonable and feasible mitigation is applied to minimise noise impacts. However, the NIA appears to have failed to provide adequate consideration of potential mitigation to reduce and minimise impacts from the construction phase of the proposal. It is not clear if the list of generic measures in NIA Chapter 6.6 is appropriate or relevant to the proposal.

The NIA should demonstrate that as a minimum an investigation or assessment has been done that considers how to reduce noise impacts, instead of providing a list of generic measures.

As a minimum this should consider the equipment and activities that create the highest impacts and impacts above the noise management levels, what measures exists to minimise their impact, the potential effectiveness of the measures and the factors that affect their ability to be implemented. Impact should be considered in terms of noise level, duration, time of day and community expectations. TANU understands that all details about the construction may not be known at this stage, however conceptual measures can be used to inform the assessment.

Recommendation: the NIA is amended to include adequate description, and consideration of potential mitigation measures to reduce construction noise impacts.

vi. SEARs requirements for construction noise assessment

Under the Key Issues - Noise in the SEARs, its states the following:
"a draft noise management plan if the assessment shows construction noise is likely to exceed applicable criteria". The EPA is unable to identify if this requirement has been fulfilled.

Recommendation: The Proponent must clarify if the SEARs relevant to noise have been met.

f. Heating, Ventilation and Air Conditioning Units

The EPA understands that the project will be comprised of approximately "2013 battery enclosures housing lithium-ion type battery cells, associated control systems and HVAC (heating, ventilation and air conditioning) units, and up to 372 power inverters".

Recommendation: **The EPA requests information regarding the HVAC system being, Will the proposal utilise any synthetic or natural cooling liquids or other, and if so, will the liquids require treatment and/or disposal?**

g. Cumulative Impact Assessment

Section 23 Cumulative Impact Assessment – of the EIS includes at page 6-3 the following statement, "the Cumulative Impact Assessment includes the discussion of all cumulative impacts of Neoen's Great Western Battery based on the currently available information". In reviewing the technical assessment at Appendix D – Construction and Operational Noise and Vibration Assessment, it is not evident that the cumulative impact assessment was undertaken as part of the technical noise assessment.

Recommendation: The EPA requests further clarification on the cumulative impact assessment and if this was undertaken as part of the technical noise assessment.

h. Clarification of Nearest Receivers, Identification and Organisation

Reference is made to the proposal to be constructed nearby, Great Western Battery (GWB), and the nearest receivers being 'unlikely' to be impacted as they are located about 3.5 kilometres south-east of the GWB proposal, which appears to be a vague description of nearest receivers.

Recommendation: The EPA is seeking clarification on:

1. **How the distance of 3.5 kilometres was determined, as the EPA understands the nearest sensitive receivers to be closer than 3.5 kilometres, and**
2. **If the statement is referring to the GWB or the project.**

If you have any questions about this request, please contact Mr Allan Adams on 6333 3804 or via email at info@epa.nsw.gov.au.

Yours sincerely

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