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PARRAMATTA NSW 2124

Submitted via the Major Projects Portal

**EPA Advice on Environmental Impact Statement
STACK SYD01 Data Centre - SSD-82211208**

Dear Shaun

I am writing in response to your request for the NSW Environment Protection Authority (EPA) to review the Environmental Impact Statement (EIS) and provide advice on the proposed STACK SYD01 Data Centre (SSD-82211208) at 78 Lockwood Road, Erskine Park.

The EPA has reviewed the following documents:

- Environmental Impact Statement prepared by Urbis Ltd - November 2025
- Air Quality Impact Assessment (Rev.8) prepared by Northstar Air Quality Pty Ltd – October 2025
- Noise and Vibration Impact Assessment (Rev. 4) prepared by Acoustic Logic – October 2025
- Detailed Site Investigation Report prepared by Douglas Partners Pty Ltd – August 2025
- Dangerous Goods Compliance Report (Rev. F) prepared by Acor Consultants – October 2025
- Waste Management Plan Operational (Rev.4) prepared by NULOOP Pty Ltd – October 2025
- Waste Management Plan Construction & Demolition (Rev.4) prepared by NULOOP Pty Ltd - October 2025
- Greenhouse Gas Assessment Report (Rev. E) prepared by LCI Consultants - October 2025

The EPA understands the proposal is for:

- Site preparation and construction of a three-storey 450 MW data centre comprising two buildings to be built in two stages.
- 170 on-site emergency diesel generators.
- Lithium-Ion electrolyte battery data halls
- Above-ground diesel storage tanks.

Based on the information provided, the proposal will require an Environment Protection Licence (EPL) under section 43 of the *Protection of the Environment Operations Act 1997* (POEO Act) for Chemical Storage clause 9 and may require an EPL for electricity generation clause 17 of Schedule 1 of the POEO Act.

NSW Environment Protection Authority

As the environmental steward and regulator of our State we are committed to a sustainable future. Join us on our mission to protect tomorrow together.

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The EPA has reviewed the above documents and notes that it does not provide the information required to allow us to complete our assessment. The EPA has the following comments and recommendations:

Matters to be addressed prior to determination

Air Quality Assessment

The EPA reviewed the Air Quality Impact Assessment (AQIA) and further information is required to complete our assessment.

1. Potential for over 200 hours of generator operations

The AQIA states that the generators will be tested for 198 hours, however, it is unclear although unlikely, that this has included warm-up/cool-down periods. 198 allows for very little buffer for non-routine operation (including but not limited to emergency power use). The AQIA refers to network reliability statistics (Figure 16) that there has been an average of 82 minutes power outages in the last 10 years. However, that is the normalised data which excludes planned interruptions and Major Event Days (eg. storms) (Ausgrid 2025 report). Figure 16 shows that unnormalised power outages averaged 142.9 minutes (2.4 hours) over 10 years with a yearly maximum of 303.6 minutes (5+ hours). As the emergency generators will be required regardless of the cause of loss of power, the calculation of hours should include an adequate conservative buffer, otherwise demonstration on how the applicant intends to achieve the POEO Clean Air Regulation limit for NO₂ for the generators must be provided.

The EPA recommends that DPHI requests from the applicant further information and clarity on the use of the diesel generators including:

- a) That testing is occurring in accordance with manufacturer specifications,
- b) That the hours of operations are calculated based on all minutes where generators are on (i.e. ensuing that warm-up/cool-down periods are included in the calculation),
- c) That an adequately conservative buffer is included for non-routine generator use.
- d) If the proposed generator use exceeds 200 hours, the EPA recommends that DPHI request the applicant provide details of how the POEO Clean Air Regulation NO₂ limit will be achieved.

2. Justification of emission performance

Table 12 of the AQIA states that the engine performance is 15.2 g/kWh for NO_x giving an emission rate of 13.9 g/s. This emission performance does not meet any emission performance level as it is below Tier 1 generator emission performance requirements of 9.2 g/kWh. The emergency scenario impacts are predicted to be over 1200% (Table 19) of the 1-hour NO₂ criterion. While EPA understands that the emergency scenarios for data centres of this scale all exceed the 1-hour NO₂ criterion and have a low probability of occurring, the use of exceedingly poor engine performance results in excessive and unnecessary adverse impacts on surrounding receptors.

The EPA recommends that DPHI requests the applicant to evaluate the generator emission performance against Best Available Technology (UK Emergency Generator BAT) and justify where best emission performance generators are not selected.

Noise Assessment

The EPA reviewed the Noise and Vibration Impact Assessment and requires further information to complete our assessment.

1. Noise monitoring and amenity criterion.

The increase of amenity criterion at location NCA1 from 'suburban' to 'urban' is partially justified by the results of unattended monitoring undertaken at NL1. The EPA notes that NL1 is located in the north-eastern corner of NCA1, while the receivers most affected by the proposal appear to be located along the southern corner and/or edge of the NCA. Section B1.1 of the Noise Policy for Industry (NPI) states "*Site the data logger(s) at the most- (or potentially most-) affected residence(s). If this is impractical, site the logger(s) at locations with a similar acoustical environment.*" The NIA uses attended monitoring along the southern edge of the NCA to justify that the unattended measurement at NL1 is of a similar acoustical environment to the potentially most affected receivers in NCA1. The attended measurements from the early morning of 30th September 2025 show a reasonable agreement in levels between attended and unattended locations, however attended measurements in the late evening of 29th September 2025 appear to be ~10dB lower than those recorded at NL1.

The EPA recommends that DPHI requests from the applicant further information to:

- Justify that the background noise levels measured at NL1 are representative of the worst-affected receivers in NCA1 (which may require additional unattended monitoring).
- Ensure that any changes in the measured background levels are reflected in the selection of amenity criterion and justified appropriately, and that any necessary adjustments to the intrusiveness criterion and project noise trigger levels (PNTLs) made.

2. Predicted noise levels

The maximum operational noise level predicted on any façade is presented for each noise catchment area in Section 9.4.2 of the Noise and Vibration Impact Assessment. This section identifies maximum exceedances of up to 2dB across NCA2 but does not identify which individual receivers are impacted. All individual receivers predicted to experience exceedances of the PNTLs need to be identified with the predicted noise levels at those receivers presented.

The EPA recommends that DPHI requests from the applicant further information to:

- Tabulate all receivers predicted to experience exceedances of the PNTLs with the noise levels predicted for each receiver.

3. Low frequency assessment

Section 9.4.4 of the Noise and Vibration Impact Assessment assesses low frequency characteristics down to 50Hz. Fact Sheet C of the Noise Policy for Industry requires a detailed evaluation of the one-third octave frequencies between 10Hz to 160Hz. The technical note *An example approach to consider low frequency noise in the context of the NSW noise policy for industry* (Acoustics Australia Vol. 48, No. 2, August 2020, pages 170-172), located on the EPA website, provides an example case study which shows how a lack of published sound power level data for plant and equipment down to 10Hz can be addressed.

The EPA recommends that DPHI requests from the applicant further information specifically:

- Update the low-frequency assessment to include one-third octaves down to 10Hz with reference to *An example approach to consider low frequency noise in the context of the NSW noise policy for industry* (Acoustics Australia Vol. 48, No. 2, August 2020, pages 170-172)

Deisel Generator Testing Regime

The information provided does not clearly outline the proposed testing regime for the back-up generators. EPA recommends that DPHI requests from the applicant further information specifically:

- All testing types (e.g. monthly, annual) and details of scheduled and unscheduled works that would require use of back-up diesel generators (e.g. electrical infrastructure works),
- Number of tests for each generator/year,
- Number of generators to be tested at any one time,
- Testing duration for each generator (including cool down),
- Load during testing,
- Time of the day testing will occur,
- Maximum number of tests per day,
- Total number of cumulative hours generators will be tested and operated per annum.

Waste Batteries

The volume of waste batteries proposed to be stored at the Premises at any one time has not been clearly specified. The EPA advises DPHI to request information from the applicant that details the amount of waste batteries proposed to be stored on the premises at any one time and appropriate fire management measures proposed, including separation and storage of any contaminated fire-fighting water.

Greenhouse Gas Assessment

The EPA has reviewed the Greenhouse Gas Assessment (GHG assessment) and confirms that the Proposal will likely generate more than 25,000 tonnes of Scope 1 and 2 CO₂-e emissions in at least one financial year during operation. As a result, the NSW Guide for Large Emitters (Large Emitters Guide) applies to this proposal.

There is inadequate information provided in the GHG assessment and EPA requires additional information to complete its assessment against the requirements of the Large Emitters Guide.

1. GHG inputs and assumptions

For the EPA to replicate the estimated emissions in the GHG assessment, details are needed to demonstrate how the reported activity data was quantified and how it is reflective of the project.

To be consistent with section 4.4.1 of the Large Emitters Guide, the GHG assessment should clearly document the assumptions, data and methods used in estimating Scope 1 and Scope 2 emissions. The GHG assessment should include sufficient supporting information to enable replication of the emissions calculations, with information disaggregated for each operation. The underlying assumptions and input data used to develop the emissions estimates should be clearly documented for all relevant GHG sources, in particular:

- Additional detail is required to explain how the activity data presented in Appendix B was sourced and compiled.
- No supporting documentation has been provided for the activity data, including the emissions information reported for the applicant and tenant(s).
- Scope 3 emissions associated with the applicant's organisational operations, as well as emissions from decommissioning, closure, post-closure, and maintenance/repair/replacement activities, have not been included within the GHG assessment boundary. Similarly, the GHG assessment identifies water treatment and distribution for use as a relevant Scope 3 emissions category however no associated emissions have been quantified in the Scope 3 estimates.

To ensure the GHG assessment provides representation of the project's entire emissions profile, the applicant should supply appropriate justification for excluding these activities. Alternatively, the assessment should include indicative estimates or calculations to demonstrate the potential magnitude and relevance of emissions from these sources, confirming whether their exclusion is appropriate based on materiality.

- The basis for the diesel consumption values presented in Table 4 is unclear. The applicant should provide further information demonstrating how diesel use for the proposed generator testing regime was calculated (e.g., testing frequency, generator specifications, operating assumptions). This clarification is necessary to confirm that the estimated Scope 1 emissions accurately reflect expected diesel consumption. It should also be clarified whether emissions from actual emergency operations, in addition to routine testing, have been considered.
- The EPA notes that the calculations of Scope 1 and Scope 3 emissions do not reference the most up-to-date emissions factors published in the National Greenhouse Accounts Factors: 2025 by DCCEEW ([National Greenhouse Accounts Factors: 2025 - DCCEEW](#)).
- Further explanation is required to understand how the reported GHG emissions were derived once the proposed mitigation measures were applied.
- The EPA notes the GHG assessment disclaimer stating that “*all quantified data presented in this report are estimates only for the preliminary design and provided for information only. No guarantee or warranty can be placed on the data presented.*” In response to this disclaimer, the EPA expects the applicant to prepare a report that can be relied upon, is consistent with the Large Emitters Guide requirements and presents the best available GHG estimates for the project.

To be consistent with the Large Emitters Guide, the GHG assessment is to be well documented, clearly outlining the information sources, data inputs, assumptions, methodologies, and findings that inform the emissions estimates. The applicant's assessment is also required to include the project's expected emissions profile, the emissions-reduction measures considered, the emissions-reduction goals, and the proposed monitoring approach. This ensures that the GHG assessment remains sufficiently detailed, transparent, and defensible, despite the preliminary nature of the data.

The EPA recommends DHPI request that the applicant revises the GHG assessment to include and justify all input data and assumptions used to estimate Scope 1, Scope 2, and Scope 3 emissions, and to clearly demonstrate how these inputs reflect the number of generators, fuel consumption rates, and the proposed testing regime over the project's life.

2. Scope 2 electricity emissions

If approved, the proposal will trigger EPL requirements under ‘*chemical storage*’ in accordance with Schedule 1 of the *Protection of the Environment Operations (POEO) Act*.

The applicant states in the assessment that: “*Electricity consumption and associated GHG emissions by tenant IT equipment within the data halls will be the responsibility of the tenant and outside the control of the proponent.*” This position is reiterated in Appendix C by the independent expert reviewer, who notes that the GHG assessment assigns Scope 2 emissions from tenant IT equipment electricity use to the tenant rather than the applicant.

It is important to clarify that the EPA's current position is that, for licensing and assessment purposes, indirect GHG emissions from electricity use within a licensed premises (whether by the operator or by lessees) are considered Scope 2 emissions attributable to the licensee.

This is consistent with the NSW EPA's regulatory approach whereby the EPA regulates all activities and operations within the premises. The licensee is responsible for managing emissions and potential environmental impacts due to activities undertaken within a licensed premises.

Currently, it is the EPA's position that the applicant:

- can influence the final project design to avoid, reduce and substitute emissions as far as is feasible and practicable.
- will have the power to purchase electricity that is backed by renewable sources for all operations within the premises.

The EPA recommends DHPI request that the applicant be made aware that for licensing and assessment purposes, the EPA considers that indirect GHG emissions due to electricity use (by the operator and lessees) within a licensed premises are Scope 2 emissions. This does not preclude the applicant from following relevant guidelines or fulfilling their obligations under other regulatory frameworks.

3. Commitment to 100% renewable electricity

The GHG assessment mentioned the applicant's broader corporate objective of achieving net-zero Scope 1 and 2 emissions by 2050. The EPA notes the percentage differences between the project's emissions and the benchmark emissions scenario throughout the GHG assessment. These differences should be explained in greater detail to clarify how these conclusions were reached.

The independent review commented that the GHG assessment followed the mitigation hierarchy in the Large Emitters Guide by considering avoidance and reduction measures first, followed by substitution and offsetting. The reviewer also commented that reasonable evaluation of avoidance and reduction opportunities have been explored and that substitution mechanisms involve sourcing 100% renewable electricity for all non-IT operations and investigating alternatives for diesel fuel.

The applicant considers that the operational control for electricity consumption (and therefore the GHG liability) resides with the tenant. As stated above, EPA's current position is that for licensing and assessment purposes, indirect GHG emissions from electricity use within a licensed premises (whether by the operator or by lessees) are considered Scope 2 emissions attributable to the licensee.

Therefore, the GHG assessment should confirm the applicant's commitment to procuring electricity backed by 100% renewable sources for the duration of the project.

The EPA recommends DHPI request that the applicant revise the GHG assessment to meet the requirements of the Large Emitters Guide, including:

- Detailed justification for the percentage differences identified between the project's emissions and the benchmark scenario presented throughout the GHG assessment.
- Confirmation of the applicant's commitment to procure electricity backed by 100% renewable sources for the duration of the project by providing details of their commitment and evaluating power purchase agreements (PPAs) or large generation certificates (LGCs), if applicable.

4. Revised GHG assessment in accordance with the *NSW Guide for Large Emitters*.

As outlined above, the GHG assessment does not provided sufficient information and is not consistent with the Large Emitters Guide.

The EPA recommends that DPPI requests from the applicant a revised GHG assessment that satisfies the Large Emitters Guide's requirements. The revised GHG assessment report should address the matters outlined in its Appendix C and include:

- Executive summary and conclusion sections consistent with the structure described in Appendix C
- A legislative and policy context section
- Consider including a figure to illustrate the Scope 1, Scope 2, and Scope 3 emissions sources within the boundary.

If you have any questions about this request, please contact Jenny Gustafson via email at environmentprotection.planning@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'G Sutherland', with a long horizontal stroke extending to the right.

Gabriel Sutherland
Unit Head – Environment Protection Planning
Environment Protection Authority