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PARRAMATTA NSW 2124

Submitted by the Major Projects Portal

EPA Advice on Submissions Report – 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 Submissions Report for the proposed STACK SYD01 Data Centre (SSD-82211208) at 78 Lockwood Road, Erskine Park.

The EPA has reviewed the following documents:

- *Appendix A – Response to Submissions prepared by Urbis March 2026.*
- *Dangerous Goods Compliance Report (Rev. F) prepared by Acor Consultants – October 2025.*
- *Submissions and Amendment Report prepared by Urbis March 2026*
- *Air Quality Impact Assessment (updated) prepared by Northstar Air Quality Pty Ltd – 24 March 2026.*
- *Noise and Vibration Impact Assessment (Rev. 9) prepared by Acoustic Logic – 20 March 2026.*
- *Waste Management Plan Operational (Rev.3) prepared by NULOOP Pty Ltd – 10 March 2026.*
- *Greenhouse Gas Assessment Report (Rev. F) prepared by LCI Consultants – 24 March 2026.*

The EPA understands the proposal is for:

- Site preparation and bulk earthworks
- Construction of a three-storey data centre comprising two buildings, including technical data halls, office and administrative areas, and ancillary circulation space.
- Separate generator gantry accommodating 188 backup generators.
- Total onsite diesel storage will be 3,790.1 tonnes
- Lithium-Ion electrolyte battery data halls

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 9 of Schedule 1 of the POEO Act.

The EPA has reviewed the above updated documents and notes that the applicant has not adequately addressed the EPA's request for information in letter dated 23 January 2026 (our ref: DOC25/1034532-6). The EPA requests additional information in **Appendix A** regarding:

1. Air Quality
2. Greenhouse Gas Assessment
3. Battery Energy Storage System

The EPA will provide a two-part response to DPHI, this letter addressing air quality, greenhouse gas assessment, the battery energy storage system, and a second letter addressing noise and dangerous goods storage.

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 'Gabby Sutherland', with a long horizontal stroke extending to the right.

GABBY SUTHERLAND
A/Unit Head – Industry Assessments
Environmental Protection Authority

Appendix A – STACK SYD01 Data Centre - SSD-82211208

The EPA has the following advice and recommendations:

Matters to be addressed prior to determination

1. Air Quality Assessment

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

Potential for over 200 hours of generator operations

The EPA recommended the applicant provide details 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.

The EPA recommended that if the proposed generator use exceeds 200 hours, the applicant must provide details of how the POEO Clean Air Regulation NO₂ limit will be achieved.

The applicant's response: *"The revised AQIA has revised the testing scenario to include 4 generators tested at once resulting in a total of 136 hours for testing"*.

The revised AQIA has provided a table that outlines the specific testing scenarios (eg. run test, off-load run, load banking). The revised AQIA states that *"where power outages result in the generators running, this would be factored into the annual testing requirements and planned maintenance would be deferred to the following year in lieu of hours already run under load"*.

The EPA has become aware of additional uses of back-up generators at data centres including for voltage disturbances, IT maintenance, substation maintenance, load shedding and grid firming. The EPA considers that any foreseen use of the diesel generators must be considered in both the accounting of the 200 hours and the modelling of impacts. Where the diesel generators may be used for load shedding and grid firming purposes, the number and load of generators must be clearly described and the modelled impacts must meet the impact assessment criteria in the Approved Methods, including for 1-hour NO₂ for all hours of the year.

Further, the revised AQIA states: *"The generators are maintained in a 'service-ready' state and do not require a warm-up period, with individual start-up times of less than 20 seconds"*. The EPA considers any state where the generators are on and producing emissions is considered operating for the purposes of calculating 200 hours under the Clean Air Regulation clause 73. As such, the applicant must provide demonstration that the proposed generators will not be operating (i.e. in any manor) for less than 200 hours a year.

The EPA has calculated that the proposed volume of diesel (4454 kL) for the data centre would be able to supply the facility for 31.4 hours for all 188 generators operating at 100 % load. If the applicant expects they will need more than 30 hours of fuel supply for emergency use, then this is the number of hours that needs to be accounted for in determining the total number of hours the generators will operate.

The EPA recommends that DPHI requests that the applicant:

- a) provides an updated accounting of diesel generator operating hours (accounting for any circumstance where the generators are on including voltage disturbances, IT maintenance, substation maintenance, load shedding and grid firming).

- b) for each specific use of generator operation (eg. Routine testing, IT maintenance, substation maintenance, grid firming, load shedding, power failure), the applicant must provide details on the number of generators that will be required.
- c) for any foreseen use of generators, the applicant must model the ground level concentrations to transparently represent the proposals potential impacts.

Justification of emission performance

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

Applicant Response: *“The revised AQIA acknowledges that the selected generators (Baudouin 16M55G3750/5) exceed all performance standards for NO_x”.*

The revised AQIA includes a review of Best Available Technologies (section 8.2.6 and Appendix G). The revised AQIA contradicts itself by stating that the emission performance is below Tier 1 then later claiming it meets Tier 2. The generator emission specifications (provided as Appendix E) identifies that the generators do not meet any emission standard. Appendix G identifies that in comparison to UK BAT for emergency generators NO₂ concentration of 2000 mg/m³ (5% O₂), the proposed generators for this data centre has a NO₂ concentration of 3813.5 mg/m³ (5% O₂).

The revised AQIA justification that the generators selected to ensure operational reliability and suitability for emergency power supply is not adequate considering many other data centres identify back-up generators that are capable of meeting Tier 1 and even Tier 2 emission standards. The revised AQIA includes a chapter on mitigation (section 8.2.5) which includes “liaison with suppliers should continue to investigate best-practice operation and technology improvements”. Better emission performance generators are already available. Tier 1 was phased in from 1996 and Tier 2 from 2001 (as identified in Appendix G of the revised AQIA). Other data centres are already adopting Tier 1 and Tier 2 engines, which indicates it is reasonable and feasible to install better emission performance generators to minimise emissions and impacts.

Although the applicant claims that the generators will only operate for less than 200 hours and that therefore the usage is low. The emergency scenario predicts up to 1043 exceedances of the hourly NO₂ criteria at the worst affected receptor and up to 1716 % of the 1-hour NO₂ criteria (NSW EPA's and NEPM's). The emergency scenario also predicts 68 exceedances of the PM_{2.5} 24-hour criteria at the worst affected receptor. The revised AQIA states that the probability of these impacts occurring is low, but as the occurrence of power outages (per Figure 16) happens every year for at least 1 hour, the probability of exceedances of the 1-hour NO₂ criteria is more than 11% and 18% for PM_{2.5} for the most impacted receptors (Table 32). This is not an insignificant occurrence and risk.

As this data centre will require a licence, EPA is required to consider the pollution likely to be caused, the likely impact of that pollution and the practical measures that could be taken to prevent, control, abate or mitigate that pollution (section 45 of the *Protection of the Environment Operations Act 1997*). The EPA considers that the practical measures include the selection of diesel generators that meet Tier 2 NO_x emission performance. While this will not result in compliance with criteria during an emergency scenario, it has the potential to reduce NO₂ impacts by half to a third of currently predicted.

The EPA recommends that DPHI requests that the applicant:

- a) must consider the installation of Tier 2 generators to ensure emissions and impacts are minimised.
- b) must provide details of the entire power supply system, including information on the UPS system capabilities to minimise diesel generator use.

2. Greenhouse Gas Assessment

The EPA reviewed the revised greenhouse gas (GHG) assessment prepared for STACK SYD01 Data Centre and further information is required to complete our assessment.

Provide information to support the assumptions used to report Scope 2 emissions as zero

The revised GHG assessment includes three different assessment scenarios. A detailed description of individual scenarios is provided in Section 3.1.2 of the assessment.

Scenario 3 is representative of all proposed emissions mitigation measures, including design features to maximise energy efficiency (e.g., target PUE ~1.3), use of low global warming potential refrigerants in cooling systems and securing electricity backed by renewable projects.

The operator and lessee Scope 2 emissions for IT requirements for Scenario 3 are reported as zero on the basis that the electricity supply will be backed by renewable projects. However, additional information is required to verify the estimates and conclusions in the revised GHG assessment.

The applicant has committed to procuring Power Purchasing Agreements (PPAs) for accredited GreenPower (i.e., renewable electricity). However, there is no information on the scheme that will be used to retain and retire certificates nor on specific reporting requirements that would allow for emissions to be reported as zero.

The project operation will constitute a significant additional load to the grid and additional large indirect GHG emissions. It is critical the applicant provides information to support the assumptions made to report Scope 2 emissions as zero.

The EPA recommends that DPHI requests that the applicant provides information to support the assumptions made to report Scope 2 emissions as zero. Consideration is to be given, but not limited to:

- a) Relevant schemes that will be used to retain and retire certificates.
- b) Reporting requirements that would allow for indirect emissions to be reported as zero.
- c) Any other relevant information.

The Applicant's role in securing electricity backed by renewables on behalf of the lessees remains unclear

For both operator and lessee IT requirements the Scope 2 emissions for Scenario 3 are reported as zero. The assumption is based on the electricity supply being backed by renewable projects. However, the applicant's role in procuring renewable-backed electricity for lessees is unclear. Therefore, it is unclear if IT requirements emissions by the lessee can be reported as zero.

If the applicant cannot, or chooses not to, make such commitments on behalf of their lessees, this is to be specified and justified, and indirect emissions due to electricity use are to be updated accordingly for all emissions scenarios.

The EPA recommends that DPHI requests:

- a) that the applicant confirms their role in procuring Power Purchasing Agreements (PPAs) for accredited GreenPower on behalf of the lessees. If the applicant chooses not to make commitments on behalf of the lessees, it is expected the reasons for this decision are outline.

- b) Based on the answer for item a above, emissions estimates in the Revised GHG be updated accordingly and consistent with the *NSW Guide for Large Emitters*.

The Independent review is to be revised

The revised GHG does not provide an updated version of the Independent Reviewer. Consistent with the NSW Large Emitters Guide, projects with scope 1 and 2 emissions exceeding 100,000 t CO_{2-e} per year at any time over the operational life of the project require mitigation assessments to be verified by an independent expert reviewer.

Given that indirect emissions from electricity use represent the largest source of project-related emissions, and that the primary mitigation measure proposed is the procurement of PPAs for accredited GreenPower, the Independent Review should be revised to address the applicant's mitigation approach on this matter.

It is expected that the expert reviewer will have the qualifications and experience needed to comment on procuring PPAs for accredited GreenPower, as well as on the schemes used to procure, retain, and retire certificates over the life of the project.

The EPA recommends that DPHI requests that:

- a) The Independent Review is to be revised to include an assessment of the applicant's proposed mitigation measures and specifically address PPA procurement for accredited GreenPower and the associated certificate schemes that will be used for the life of the project.
- b) It is expected that the expert reviewer will have the qualifications and experience needed to comment on procuring PPAs for accredited GreenPower, as well as on the schemes used to procure, retain, and retire certificates over the life of the project

3. Battery Energy Storage System

The EPA reviewed the Operational Waste Management Plan and the Dangerous Goods Compliance Report and there is inadequate information provided regarding the details about 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.

The EPA recommends that DPHI requests that the applicant provide further information regarding:

- a) the management of the battery energy storage system including details about the amount of waste batteries proposed to be stored on the premises at any one time.
- b) the fire management measures proposed, including separation and storage of any contaminated fire-fighting water.

Note: the EPA advises DPHI to inform the applicant that an EPL is required to transport higher risk wastes (classification of waste batteries should be applied in accordance with EPA's waste classification guidelines) and waste tracking requirements also apply. Compliance with relevant dangerous goods transport legislation is required when transporting batteries considered as dangerous goods (as per the Dangerous Goods (Road and Rail Transport) Act 2008).