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Request for comment on the EIS for the proposed Augusta Street Data Centre Blacktown NSW (SSD-10469)

Dear Shaun

Thank you for the request for advice from Public Authority Consultation (PAE-9425583), requesting the review by the NSW Environment Protection Authority (EPA) of the Environmental Impact Statement (EIS) for the proposed Augusta Street Data Centre located at Augusta Street, Blacktown NSW (SSD-10469).

The EPA has reviewed the following documents provided in support of the proposal:

- *Environmental Impact Statement* – Proposed Data Centre, Augusta Street, Blacktown – Willowtree Planning, 11 September 2020
- *Air Quality Assessment* – Proposed Data Centre, Blacktown – Air Noise Environment, 29 July 2020.
- *Noise Impact Assessment* – Data Centre, August Street, Blacktown – Acoustic Logic, 5 August 2020.
- *Environmental Due Diligence Assessment* – Augusta Street, Huntingwood East, NSW – WSP, 5 March 2020.
- *Additional Site Investigation* – Augusta Street, Blacktown NSW – WSP, 5 August 2020.

The EPA understands the application seeks consent for the construction and 24-hour operation of a data centre comprised of sixteen data halls, two electrical substations, two diesel fuel storage tanks, plant and equipment. As part of the operation of the data centre, it is noted that two above-ground diesel fuel storage tanks with a total storage capacity of 3,510.6 tonnes are proposed to be installed to power the back-up generators. This volume of diesel will enable 48 hours of back-up generator supply.

Based on the information provided, the proposal will require an environment protection licence (licence) under Clause 9 of Schedule 1 of the *Protection of the Environment Operations Act 1997* (the POEO Act) for petroleum products storage. Under Sch 1, Clause 9 of the POEO Act, an activity requires a licence if there is a capacity to store more than 2,000 tonnes of petroleum products (which includes diesel).

It is the responsibility of the proponent to apply for a licence from the EPA if planning consent is granted for the proposal.

The EPA has reviewed the EIS and supporting documents and notes that additional information is required to enable the EPA to accurately assess the proposal. Therefore, the EPA requests additional information, as outlined below.

1. Matters to be addressed prior to determination

A. Air Quality Assessment

The EPA has reviewed the Air Quality Impact Assessment (AQIA) and considers that this assessment does not provide adequate information to enable the EPA to accurately assess the air quality impacts associated with operation of the proposal. It is also noted that the AQIA has not been prepared in accordance with the NSW EPA's Approved Methods for the Modelling and Assessment of Air Pollutants in NSW. The EPA recommends the AQIA be revised to provide further information on the following:

a. Generator details

- The EPA recommend the proponent clarify how many diesel generators will be installed upon completion.
- The EPA recommend the proponent provide details on the specifications of the generators used, including but not limited to:
  - individual electrical generation capacity of the generators,
  - the total electrical generation capacity,
  - the individual fuel rate and
  - total fuel stored onsite.

b. Emissions

- The EPA recommend the AQIA be revised to consider the emissions standards of the generators and provide the emission concentrations of the selected diesel generators for particulates, NO_2, CO, SO_2, PAHs and VOCs.
- The EPA recommend that the proponent must clearly justify the proposed backup power source, that all reasonable and feasible emission controls have been considered to prevent or minimise air pollution and the alternative options considered.

c. Model scenarios

i. Worst-case scenario

- The EPA recommend the AQIA revise the worst-case model scenario to assess the potential impacts for every hour of the year.
- The EPA recommend the AQIA include an evaluation of the number of hours in a year that exceedances of the ground level concentrations at nearby receptors are predicted to occur.

ii. Nomal Operations

- The EPA recommend the proponent provides further details and confirmation of generator testing regime.
- The EPA recommend the AQIA include a more robust assessment of the generator testing regime for all possible hours of operation and presents the impacts at identified receptors in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (Approved Methods).

d. Impact assessment criteria exceedances

- The EPA recommend the revised AQIA re-evaluate the emissions from the generators addressing all the issues identified.
- The EPA recommends the AQIA include contour plots for all pollutants for both modelled scenarios. Predicted impacts at the identified receptors should be presented in the AQIA that includes highest increments and highest background air quality with the corresponding hourly background or increment.
- The EPA recommends that any predicted exceedances must be considered and should they occur during normal operations, discussion on measures to reduce emissions must be included. Exceedances predicted from the worst-case scenario must be given consideration to the likelihood of those exceedances, the number of potential exceedance hours and the meteorological conditions and background air quality.

e. Background air quality data

- The EPA recommend the AQIA be revised to present and assess background air quality data in accordance with the Approved Methods.

f. Meteorological data

- The EPA recommends the meteorological data used in the assessment be clarified.

The above comments and recommendations should be read in conjunction with the EPA's review of the AQIA as provided in **Attachment A**.

B. Noise Impact Assessment

The EPA has reviewed the Noise Impact Assessment (NIA) and considers that this assessment does not provide adequate information to enable the EPA to accurately assess the noise impacts associated with operation of the proposal. The EPA recommends the NIA be revised to provide further information on the following:

a. Emergency generators

i. Testing and maintenance

- The EPA recommend the proponent revise the NIA to provide further details and confirmation of generator testing and maintenance regime.

The NIA states that each generator will be tested bi-monthly (once every two months), and three generator blocks, each containing six generators (for a total of 18 generators) can be tested simultaneously. It is reported that all testing will occur during business hours, and testing will not exceed 200 hours per year. However, the modelled daytime operational scenario for the proposal only includes only one generator running for routine maintenance and therefore the NIA may significantly underpredict the noise impacts of daytime generator maintenance/testing.

- The EPA recommend any noise mitigation measures that may be needed to address additional noise impacts arising from the simultaneous testing of multiple generators should be clearly identified.

ii. Operational noise assessment

- The EPA recommend that the use of the back-up generators should be included in the operational noise assessment.

The NIA states that because the generators will operate for less than 200 hours a year, which is below the threshold for a licence under the POEO Act, it is outside the requirements of the Noise Policy for Industry (NPfI) to assess them. However, as has been noted, the proposal is likely to require a licence for storage of petroleum products. Furthermore, the EPA notes that Section 1.4 of the NPfI does not limit its application only to scheduled premises/activities and that it is the planning authorities who set the assessment requirements. In this case, the SEARs specified the

NPfI and so therefore it should be used to assess the generators operating under all circumstances.

Additionally, the NIA indicates that there could be exceedances of the project noise trigger levels (PNTL) during emergency operation. The EPA recommend that the proponent should undertake a noise assessment of emergency generator operation, and where exceedance of the NPfI trigger levels are identified, a discussion on whether there are feasible and reasonable noise mitigation measures that could be deployed to achieve compliance should be included in the revised NIA.

C. Licensing

The EIS states that the activity will not require a licence for electricity generation under clause 17 of the POEO Act, as the testing of generators at the premises will not exceed 200 hours per year. Under this clause, 'plant' encompasses all generators on the premises collectively, and 'operate' also includes testing should the internal combustible engines be turned on during testing.

The EPA requests that the proponent demonstrate that that the activity will not require a licence under clause 17 of the POEO Act. In particular the proponent should provide a calculation as to the number of hours that generators, as a collective, are tested. This should be based on the hours (in real time) that testing is in fact conducted at the Premises per year. This will therefore depend on the way in which testing is carried out at the Premises (i.e. whether testing will be conducted individually, in clusters, or on all generators at once – noting that multiple generators being tested concurrently for an hour would count as one hour, rather than cumulatively adding the testing time of each generator).

2. Matters to be addressed with conditions

A. Contamination Assessment

The EPA has reviewed the Environmental Due Diligence Assessment and Additonal Site Assessment undertaken by WSP to conduct a data gap analysis of previous reports, undertake additional site investigations and review the suitability of the the Remedial Action Plan[1] (RAP) developed by JSB (2010) for the subject site.

The EPA note that WSP concluded that the RAP developed by JSB remains suitable for the subject site following a number of amendments. The EPA recommends that the RAP be updated to include the WSP recommendations and reflect current regulatory guidelines and legislation.

The EPA recommend that the following condition of consent should be included in the planning consent: *An auditor accredited under the Contaminated Land Management Act 1997 be required to confirm the appropriateness of the updated Remedial Action Plan, and to issue a Section A Site Audit Statement and Report on completion of the remediation works confirming suitability of the site for the intended use.*

If you have any questions about this advice, please contact Claire McQueeney on (02) 8837 6393 or via email at claire.mcqueeney@epa.nsw.gov.au.

Yours sincerely

JACQUELINE INGHAM
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[1] Remedial Action Plan – Augusta Street, Blacktown NSW, 'Huntingwood East'. For NSW Department of Planning, JBS Environmental Pty Ltd, September 2010.

Attachment A – EPA detailed review of Air Quality Impact Assessment

1. Generators details

Final details of the diesel generators have not been provided in the AQIA. The AQIA states in section 2.3 that 84 generators are allocated in Stage 1 and 66 generators each in Stages 2 and 3, giving a total of 216 generators for the proposal. However, section 4.3 of the AQIA states that there will be a total of 222 generators.

The AQIA states that the generators will be between 1800 - 1840 kW. Assuming there will be 216 generators, the total capacity of the generators will be 388.8 - 397.4 MW. Emission rates in the modelling have been calculated based on a 1840 kW generator with an estimated fuel consumption of 452.2 L/hr. As the AQIA has stated 48 hours of fuel will be stored on site, for 216 generators, this is a total of 4130.8 tonnes of diesel.

The EPA recommend the proponent clarify how many diesel generators will be installed upon completion.

The EPA recommend the proponent provide details on the specifications of the generators used, including but not limited to:

- **individual electrical generation capacity of the generators,**
- **the total electrical generation capacity,**
- **the individual fuel rate and**
- **total fuel stored onsite.**

1. Emissions guarantees for diesel generators

The AQIA states that the relevant emission limits for the proposal are the group 6 non-scheduled premise limit of 100 mg/m^3 for particulates. However, an environmental protection licence will be required making the facility a licenced premise and therefore all activities conducted on site will be required to meet emission limits for a scheduled premise. The AQIA must demonstrate that emission concentrations from the diesel generators will meet the POEO Clean Air Regulation emission limits for a scheduled premise.

The EPA advise that all facilities are required to operate by such practicable means as may be necessary to prevent or minimise air pollution (POEO Act Section 128, Part 2). The AQIA should provide discussion on the backup power system, including how the diesel engines have been chosen to minimise air emissions, abatement technology considered and able to be installed or retrofitted, other measures, such as uninterruptable power supplies (UPS) capacity and duration of use prior to requirement of backup generator operation. This was a specific requirement of the SEARs to justify the proposed backup source and alternatives considered.

The AQIA states that USEPA Tier 4 engine standards have been used in the assessment of emissions and impacts for the diesel generators. However, the use of Tier 4 engines does not appear to be confirmed as it is just provided as a recommendation of the AQIA. Considering the numerous generators included in this proposal, that have the potential to all be operating simultaneously, the proponent must provide discussion on all practical means as necessary to prevent or minimise pollution from the premise.

The EPA recommend the AQIA be revised to consider the emissions standards of the generators and provide the emission concentrations of the selected diesel generators for particulates, NO_2, CO, SO_2, PAHs and VOCs. The EPA recommend this includes manufacturer specifications of the generators to confirm the emission rates used in the assessment. The manufacturer emission specifications must include the emission rates or concentrations of

all pollutants assessed, exit velocity, flow rates, temperature and reference and/or measured oxygen percentage.

If the manufacturer emission rates exceed those assessed, the AQIA must include adequate justification as to why poorer emission performance generators are selected and the dispersion modelling be revised to include the actual emission concentrations and rates of the diesel generators and the impacts reassessed.

The EPA recommend that the proponent must clearly justify the proposed backup power source, that all reasonable and feasible emission controls have been considered to prevent or minimise air pollution and the alternative options considered.

1. Model scenarios

a) Worst-case scenario

The scenario created to represent the worst-case emissions assumes a major power outage requiring all generators to operate continuously for 48 hours until fuel supplies are exhausted. From the AQIA, it is unclear if this scenario was run for every hour of the year to assess the impacts from the worst-case scenario during all meteorological and background air quality data.

The EPA recommends the AQIA revise the worst-case model scenario to assess the potential impacts for every hour of the year.

The EPA recommend the AQIA include an evaluation of the number of hours in a year that exceedances of the ground level concentrations at nearby receptors are predicted to occur.

b) Normal operations

AQIA section 2.4 states that three generator blocks containing 6 generators each will be tested simultaneously (18 generators in total) while AQIA section 4.3 states that 9 tests can be completed simultaneously.

It is unclear how many generators will be tested simultaneously during normal generator testing operations. As a result, it is unclear what the impacts of normal operations in Table 5.4 represent. Further, the approach to background data (issue 5) does not provide a thorough and robust assessment of potential for impacts from ongoing testing of the generators throughout the year. The EPA advise that the AQIA does not provide any level of certainty regarding the air quality impacts of generator testing.

The EPA recommend the proponent provides further details and confirmation of generator testing regime.

The EPA recommend the AQIA include a more robust assessment of the generator testing regime for all possible hours of operation and presents the impacts at identified receptors in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (Approved Methods).

1. Impact assessment criteria exceedances

Notwithstanding the issues identified elsewhere is this Attachment (unclear model scenarios, background air quality data, generator details, emission concentrations and testing regime), the AQIA predicts significant exceedances of the impact assessment criteria (IAC).

The worst-case scenario predicts incremental impacts of PM_{10}, $PM_{2.5}$, CO, NO_2 and benzene above their respective IAC (see table below).

Pollutant	IAC	Averaging Period	Incremental impact	Exceedance Probability
PM_{10}	50 µg/m^3	24 hours	134.9 µg/m^3	0.11 %
$PM_{2.5}$	25 µg/m^3	24 hours	134.9 µg/m^3	0.11 %
CO	30,000 µg/m^3	1 hour	32,988 µg/m^3	<0.01 %
CO	10,000 µg/m^3	8 hours	20,946 µg/m^3	0.032 %
NO_2	246 µg/m^3	1 hour	680.7 µg/m^3	0.041 %
Benzene	29 µg/m^3	1 hour	30.1 µg/m^3	<0.01 %

A probability of exceedance during a power outage is provided for each pollutant, however, the methodology for this determination has not been provided to assess this risk.

Although no exceedances of the IACs are predicted for the normal operations scenario, the issues already identified indicate these impacts may be significantly underestimated.

The EPA recommend the revised AQIA re-evaluate the emissions from the generators addressing all the issues identified.

The EPA recommends the AQIA include contour plots for all pollutants for both modelled scenarios. Predicted impacts at the identified receptors should be presented in the AQIA that includes highest increments and highest background air quality with the corresponding hourly background or increment.

The EPA recommends that any predicted exceedances must be considered and should they occur during normal operations, discussion on measures to reduce emissions must be included. Exceedances predicted from the worst-case scenario must be given consideration to the likelihood of those exceedances, the number of potential exceedance hours and the meteorological conditions and background air quality.

1. Background air quality data

The AQIA does not adequately present an evaluation of the background air quality for assessment. The only background air quality data provided in the AQIA is a summary table (Table 5.2) of the air quality data used in the dispersion modelling. What year the background air quality data is from is also not provided. Given the inconsistency in the meteorological year stated (issue 6), it is unclear whether the background air quality data is contemporaneous with the meteorological data.

Further, the AQIA has used the 70th percentile data for the assessment of 24-hour impacts. This approach is not supported by the Approved Methods. Considering the nature of this proposal, and that the worst-case scenario during power outages is likely to occur during summer months, the use of the 70th percentile of the data is not appropriate to evaluate potential impacts and is also not in accordance with the Approved Methods.

The Ozone Limiting Method has been used for NOx to NO_2 conversion, however, no background ozone data has been provided in the AQIA.

The EPA recommend the AQIA be revised to present and assess background air quality data in accordance with the Approved Methods.

The AQIA must be revised to include background air quality data, including ozone, with at least one year of continuous measurements and is contemporaneous with meteorological data.

1. Meteorological data

The modelled year used for the dispersion is inconsistent stated in the AQIA with Table 5.1 stating 2019 and Figure 5.3 stating 2018.

The EPA recommends the meteorological data used in the assessment be clarified.