

Our ref: Marsden Park Data Centre (SSD-70889211)

Mr James Woods
Project Manager Pre-Construction
CDC Data Centres Pty Ltd
54 Sheppard Street
HUME ACT 2620

Attn: Mr Joe Bell, Patch Planning

14 January 2025

Subject: Additional Matters for Submissions Report (SSD-70889211)

Dear Mr Woods

I refer to the Department of Planning, Housing and Infrastructure's (the Department's) previous correspondence dated 12 December 2024, which requested the provision of a Submissions Report in response to issues raised in public submissions and the advice provided by Blacktown Council and relevant government agencies.

In addition to responding to the submissions and advice already received, you are required to submit additional information that effectively addresses the issues identified in **Attachment 1** of this letter.

You are required to provide the information, or notify us that the information will not be provided, by **Monday 3 March 2025**. If the additional information is not provided, the assessment will progress based on the information available.

If you have any questions, please contact Shaun Williams on (02) 8275 1345 or via email at shaun.williams@planning.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read "Joanna Bakopanos".

Joanna Bakopanos
Acting Director
Industry Assessments

ATTACHMENT 1

The Department's comments on the Environmental Impact Statement (EIS)

Based on the Department's review of the EIS, the Department considers further information is required to clarify matters and address inconsistencies within the documentation. In this regard, the following information is required to be provided as part of your Submissions Report:

Data Centre Operations

Power consumption

1. The Department notes that there are several inconsistencies with total power consumption and IT equipment power consumption quoted in the EIS, with the most common figures referenced being 720 megawatts (MW) and 504 MW, respectively. Given this discrepancy, please clarify the total power consumption and IT equipment power consumption for the development.
2. The figures quoted in item 0 above appear to result in an overall power usage effectiveness (PUE) of 1.43, which is above the target PUE of 1.3 referenced in the EIS. Accordingly, please provide additional information (including additional mitigation measures if necessary) to confirm that the development can reach the target PUE of 1.3, and confirm when this PUE will be achieved (i.e. from Day 1 of the development or at a later date).

Cooling System

3. Please provide an options analysis to demonstrate the development's proposed cooling system utilises best-available technology, particularly with regard to its performance in minimising energy consumption and noise emissions.
4. Section 6.5.4 of the EIS suggests that the proposed data centre is designed with a high level of cooling redundancy but provides limited information on the level of redundancy proposed or the reason/s for this requirement. In this regard, please provide additional details on the following:
 - a. the redundancy configuration for the cooling system (e.g. N, N+1, 2N+1, etc)
 - b. the number of units and their capacity, including any back-up units
 - c. the failover process and the duration for maintaining cooling during system failures or maintenance
 - d. the testing and maintenance procedures for the cooling system to ensure ongoing reliability.

Back-up generator system

5. The EIS does not appear to have provided a comprehensive options analysis/justification for the proposed back-up generator system. Please provide additional information which:
 - a. justifies the proposed scale and capacity of the proposed back-up generator system, with regard to its associated redundancy and available/upcoming alternative energy storage technologies

- b. confirms the indicative back-up generator model used to inform the accompanying technical reports represents best available technology/practice, with regard to its associated noise/air quality impacts and the commercial availability of higher tier solutions.
6. Please provide further information regarding the proposed testing regime, including:
- a. proposed load/s for each test
 - b. confirmation regarding whether ramp up/cool down times have been factored into the proposed test durations
 - c. confirmation whether commissioning tests would be undertaken for each back-up generator.

Note: Where necessary, information relating to data centre operations may be supplied under separate cover as 'commercial in confidence'.

Operational Noise

Assessment Location/s

7. Predicted operational noise levels must be identified at all receivers potentially affected by the development in accordance with Section 3.3 of the *Noise Policy for Industry* (NPfI). Given the large number of residences surrounding the site, the noise assessment must include noise contour maps at selected heights of 1.5 and 4.5 metres above ground level to report noise levels at all receivers and validate the location of the potentially most-affected residence. Note that the 'nearest' noise affected receivers identified in Figure 2-1 of the Operational Noise and Vibration Report (ONVR) do not appear to correspond to the 'most-affected' locations based on a review of the limited extent noise contour maps provided in Appendix B.

Background Noise Monitoring

8. The reporting of the background noise monitoring procedure and results in Section 3 of the ONVR does not appear to have satisfied the requirements identified in Fact Sheets A and B of the NPfI or the Environment Protection Authority's (EPA's) advice on the Planning Secretary's Environmental Assessment Requirements (SEARs). In this regard, please provide additional details on the following:
- a. a statement justifying the selection of each monitoring site, including the procedure used to choose each site, with reference to the definition of the "reasonably most-affected location(s)"
 - b. daily logger graphs for the long-term monitoring site at 4 McCann Place (L01)
 - c. detailed information on the exact location of each monitoring site, including the specific positioning of the equipment
 - d. a description of the dominant and background noise sources observed, along with the procedure used to identify noise sources (e.g. audio capture or operator-attended

- measurements conducted during unattended data logging), as well as the range of measured sound pressure levels for each identified source
- e. a statement confirming that short-term noise monitoring was conducted during periods when maximum impact would likely occur, having regard to the variability observed across the long-term noise monitoring site(s)
 - f. a record of any periods with affected data (due to adverse weather and extraneous noise), methods used to exclude invalid data, and a statement regarding the need for any re-monitoring.
9. The noise monitoring records indicate that night-time background noise levels are 36 dB(A) at 4 McCann Place (approximately 250 metres from Richmond Road) and 37-39 dB(A) at M02 (exact location not specified, over 900 metres from Richmond Road), whereby both sites are said to be influenced by distant traffic noise from Richmond Road. Further clarification is needed to explain why the measured background noise is higher at M02 compared to 4 McCann Place, despite M02 being located a further distance away from Richmond Road.
10. Further information is required to clarify why the long-term noise monitoring dataset from Stantec was used instead of the dataset from Northrop to derive the relevant intrusiveness noise levels at assessment location R2 (Ingenia Lifestyle – Stoney Creek).

Operational Noise Model

11. The Department is concerned the ‘worst-case’ operational noise scenarios considered in the ONVR do not accurately reflect the potential impacts associated with the operation of the development (and as per the SEARs).

As an example, the Bait-ul-Huda Mosque should be exposed to greater noise impacts associated with the testing of back-up generators associated with Stage 3. However, Table 5-4 of the ONVR suggests that operational noise at this location would reduce once Stage 3 is operational. It is also unclear whether the proposed substation and other sources (such as load bank/s, transformer/s, flue stacks, etc) have been included in the noise assessment, as Section 5.2 of the ONVR has only listed equipment sound power levels for chillers, PAC units and generators.

In this regard, please provide additional details on the following:

- a. all internal and external noise sources and emission parameters related to the proposed development must be clearly identified in the ONVR in accordance with Section 3.3 of the NPfI
- b. a plan showing the assumed location of each noise source for each modelled scenario must be provided
- c. the ‘worst-case’ operational noise scenarios relevant to the Bait-ul-Huda Mosque, the potentially most-affected double-storey residences in Hassall Grove and Ingenia Lifestyle – Stoney Creek must be identified and justified via a sensitivity analysis (i.e.

by varying input variables such as the location and load of back-up generators being tested).

12. Please clarify the assumptions made in the ONVR for the approved 5MW data centre (DA-24-00542). In this regard, please provide additional details on the following:
 - a. the number of chiller units identified in Section 5.1 of the ONVR appears to be less than the number indicated on the approved architectural plans
 - b. the assumed chiller emission levels in the ONVR appear to be lower than those assessed in the Northrop Acoustic Report dated 13 May 2024
 - c. the noise mitigation measures for the approved data centre chillers, as modelled in the ONVR, appear to differ from those approved under DA-24-00542.
13. Cooling equipment specifications must be provided to confirm that the assumed operational parameters identified in Section 5.2 of the ONVR account for realistic heatwave conditions, including higher temperatures and/or humidity levels during evening and night. Local weather data must be referenced to support the specified worst-case temperature of 28°C during the night-time period and to clarify the humidity level considered in the design conditions for the air-cooled chillers. Additionally, please clarify how the data centre will be operated to guarantee that the number of concurrently operated chillers does not exceed the quantities specified in Section 5.1 of the ONVR.
14. Back-up generator specifications must be provided to confirm that the assumed operational parameters identified in Section 5.2 of the ONVR account for the anticipated testing loads as per the monthly and annual testing regimes.
15. Evidence of the suitability of the selected sound propagation calculation method for accurately predicting noise under local conditions must be provided in accordance with Section 3.3 of the NPfI. Furthermore, all user-adjusted variables in the noise model must be identified and justified, including, but not limited to, settings for the geometric representation of noise sources, building reflection, noise-enhancing meteorological conditions and any modification applied to account for the effects of wind and temperature inversion on barrier attenuation (as outlined in the 1981 CONCAWE report no. 4/81).

Annoying Noise Characteristics

16. As required by the EPA's advice on the SEARs, cumulative data centre operational noise must be evaluated for any potential annoying noise characteristics such as tonality, intermittency and dominant low-frequency content in accordance with Fact Sheet C of the NPfI. There is insufficient quantitative evidence provided in the ONVR to demonstrate that cumulative data centre operational noise will not exhibit any annoying noise characteristics. Specifically, for the low-frequency noise assessment, all frequencies from 10 to 160 Hz must be evaluated (see [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 for further guidance).

The tonality assessment must evaluate all one-third octave band frequencies from 25 to 10,000 Hz as per Table C1 of the NPfI. Noise source levels and characteristics can be sourced from direct measurement of similar activities or from literature (if full references are provided).

Noise Mitigation Measures

17. All viable source and pathway noise mitigation measures that can effectively address any exceedances of the relevant project noise trigger levels must be identified in the ONVR in accordance with Section 4 of the *Noise Policy for Industry*.

Air Quality

18. The air quality assessment must be updated to include consideration of potential impacts to the following sensitive receptor locations:
 - a. the retirement village located to the direct north-west of the site (Ingenia Lifestyle – Stoney Creek)
 - b. the residence located at the Bait-ul-Huda Mosque site (used for visiting religious dignitaries, approved and constructed under DA-19-01227).
19. Given the scale of earthworks proposed at the site and the significant construction timeframe for all three stages, Section 7 of the air quality assessment must be updated to identify additional, project-specific mitigation measures that would be implemented during construction, with particular consideration given to how these measures would be applied/alterd as each stage of the development is delivered.
20. Based on Figure 8-4, it is unclear whether the back-up generators associated with the Council-approved 5 MW data centre have been considered as part of the ‘worst-case’ emissions scenario. Please review and update accordingly.
21. Based on Section 8.4.1 of the air quality assessment, the Department understands the modelling for the ‘worst-case’ emergency operations scenario has been based on 216 back-up generators operating at 50% of their prime rating power (PRP). Please provide additional commentary regarding why the adopted PRP can be considered to reflect a realistic ‘worst-case’ assessment for this scenario, noting that the emission performance of oxides of nitrogen would be poorest at 100% of their PRP.
22. Please update the air quality assessment to include consideration of non-criteria pollutants, including, but not limited to, polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs).
23. Please update the air quality assessment to clarify the modelled stack emission rates and concentrations for the proposed back-up generator system.
24. The Department notes it is unclear which back-up generator/s were modelled as part of the generator testing scenario. Accordingly, please provide a figure (similar to Figure 8-4) which identifies those back-up generator/s which were modelled as part of this scenario, along with detailed justification for why the chosen location/s can be considered to reflect

a realistic ‘worst-case’ assessment of day-to-day operations at all nearby sensitive receptors.

Note: The Department recommends the generator testing scenario be altered to ensure the predicted levels at each sensitive receptor are based on the air quality impacts which are associated with the closest back-up generator/s (i.e. predicted levels at R1 are based on the closest back-up generator test to R1, predicted levels at Wor1 are based on the closest back-up generator test to Wor1, etc).

Construction Impacts

25. Based on the information provided in the EIS, the Department understands construction of the six data centre buildings will take approximately five years to complete. For each stage of the development, please provide a further breakdown of key phases (e.g. civil works, piling, structural works, fit-out, building services and testing/commissioning) and their associated duration. Additionally, please clarify whether any overlapping works would occur between stages.
26. The Department notes the construction of the 5 MW data centre (under separate consent), the six data centre buildings and the associated substation may lead to cumulative impacts and construction fatigue for nearby residents and businesses. In this regard, the Submissions Report must include a framework for managing cumulative impacts and construction fatigue. The framework should include outcomes of consultation with the surrounding community, details of the likely construction duration and project-specific analysis of the high-level mitigation measures identified in the EIS.
27. The quantitative assessment presented in the Construction Noise and Vibration Report does not appear to address the relevant provisions of the EPA’s *Interim Construction Noise Guideline* (ICNG) (refer to sections 4.5, 4.6 and 7.2 of the ICNG for further guidance). For example, there is no description of the total duration of noise exposure at the identified assessment locations. Additionally, the quantitative assessment does not appear to have identified the relevant stages of the proposed construction works, all related noise sources (e.g. no piling noise source in the piling scenario), concurrent construction/partial operation of the development and/or other concurrent construction work in the vicinity that may contribute to additional noise impact.

Urban Design and Visual Impact

Building Design

28. Given the proposed acoustic barrier treatments differ across each building, please provide detailed architectural plans for each of the six data centre buildings proposed under the subject SSD application.
29. The Department has concerns regarding the design of the development’s southern and eastern façades, particularly when viewed from residences to the south of the site.

In this regard, consideration should be given to improving the design of the development's southern and eastern facades so as to demonstrate design excellence and further soften the appearance of each data centre building. Such improvements could include, but are not limited to, the use of additional articulation and/or an alternative colour palette.

30. The Department notes the skybridges located adjacent to the southern boundary of the site may result in privacy concerns for residences to the south.

In this regard, please provide further information to confirm what privacy impacts (if any) the skybridges will have on residences in this area and, if necessary, identify suitable management and mitigation measures (i.e. the use of frosted/opaque glass).

31. The Department notes that the photographs which informed the preparation of the development's visual impact assessment were taken in March 2024, and the site has since been cleared as part of the works approved under DA-24-00386.

Given most on-site vegetation has now been cleared in the vicinity of Viewpoint 6, the photomontage from this location should be updated to include an updated photograph from this viewpoint, to provide a more accurate representation of how the development will appear when viewed from nearby residences in Year 1 (i.e. when on-site vegetation is young).

Landscaping

32. The Department has concerns regarding the extent of the landscaping buffer provided adjacent to the site's southern boundary, particularly given the encroachment of each data centre building's Asset Protection Zone (APZ) upon the landscaping and the associated restrictions around tree planting and ground cover species.

The Department recommends the landscaping scheme be revised and the southern landscaped buffer area increased (where possible) to prevent the development's APZs from impacting on these areas, and to subsequently provide further opportunities to soften and alleviate the significant size and scale of the proposed data centre buildings when viewed from residences to the south of the site. These changes may also help to negate the need for a Biodiversity Development Assessment Report (BDAR) to be prepared for the development (see relevant section below).

Urban Heat Island Effect

33. While Table 21 of the EIS acknowledges concerns raised by nearby residents regarding the development's urban heat effects, it lacks specific information on the urban heat island mitigation measures which would be implemented as part of the development. Further analysis is needed to substantiate the effectiveness of the proposed measures, as mitigating urban heat is a priority outlined in Blacktown City Council's Local Strategic Planning Statement. The analysis must also address potential localised heat rejection impacts from rooftop cooling equipment and ground-level generators on residences south of the site in Hassall Grove.

Biodiversity Development Assessment Report (BDAR)

34. In accordance with the advice provided by the Department of Climate Change, Energy, the Environment and Water's Biodiversity, Conservation and Science Group (BCS), please provide a BDAR for the development, prepared in accordance with the *Biodiversity Conservation Act 2016* and the *Biodiversity Assessment Method 2020*.
35. Should you wish to seek an amended BDAR waiver request, accurate reporting of area measurements, vegetation species (for canopy, mid or understorey where relevant) and habitat that will be both directly and indirectly affected by the proposed clearing works must be provided.

Greenhouse Gas Emissions

36. In accordance with the advice provided by the EPA, the greenhouse gas assessment should be updated to:
- a. ensure all indirect greenhouse gas (GHG) emissions associated with IT electricity use are considered as Scope 2 emissions
 - b. identify and justify all input data and assumptions used to estimate Scope 1 emissions, and demonstrate how these values adequately reflect the proposed number of back-up generators and their associated fuel consumption rates/testing regime
 - c. clearly identify the total estimated indirect emissions associated with the development's annual electricity consumption.

Ecologically Sustainable Development (ESD)

37. The ESD report should be updated to include any additional measures/changes required as a result of the changes made to the greenhouse gas assessment and clarification of the development's total power consumption and associated PUE (see relevant sections above).

Proposed Substation

38. Please provide further details regarding the intended design of the proposed substation.
39. Please clarify how potential impacts associated with the proposed substation (e.g. construction, operational noise, hazards and risk, etc) have been considered under the subject SSD application.

Proposed Gravity Sewer Main

40. Please clarify the proposed planning pathway for the proposed gravity sewer main across the adjacent Castlereagh Freeway corridor and, if necessary, confirm whether land owner's consent is required from Transport for NSW to facilitate these works.

Remedial Action Plan (RAP)

41. Please provide an update on the status of the remediation works at the site, including confirmation that the intended remediation approach (excavation/off-site disposal) remains the preferred approach for the management of contaminated material at the site.

Community and Public Authority Engagement

42. Details and outcomes of ongoing engagement throughout the approval process with public authorities and the community must be described in the Submissions Report. It is requested that you engage directly with Council and the EPA to resolve the issues raised.