Infrastructure NSW

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NSW Data Centres Consultation Paper

The Australian Energy Council ('AEC') welcomes the opportunity to make a submission to Infrastructure NSW's *NSW Data Centre Consultation Paper*.

The Australian Energy Council is the peak body for energy retailers and generators operating in competitive markets. Our members generate and sell energy to over 10 million homes and businesses and are committed to delivering a reliable, affordable and decarbonised energy system for consumers. The AEC supports net zero by 2050 and recognises the electricity sector's role in reducing Australia's emissions. Our members are major investors in renewables, firming and storage technologies that are critical to ensuring customers continue to receive reliable and sustainable energy supply as we navigate the energy transition.

Data centres are part of the digital infrastructure that supports the services people, businesses, and governments rely on every day. Despite the recent attention data centres are receiving, it is helpful to remember that there are many data centres already in NSW and they have successfully integrated into the National Electricity Market (NEM).

While the projected growth of data centre builds, especially hyperscalers, does present some new challenges, these can be worked through and should not be catastrophised. To that end, the Consultation Paper has done a reasonable task of highlighting the pros and cons of data centre growth in the context of ensuring sustainable investment.

The proposed principles are not objectionable; however, they do represent another layer of potential regulation in what is quickly becoming a crowded space. It would be preferable, and more conducive to efficient investment, for state jurisdictions to work within the Commonwealth Government's National Data Centre Expectations and existing energy market frameworks.

Leveraging the existing energy market frameworks is especially pertinent to Principle 2 which asks how industry can best support additional renewable energy generation and firming. The AEC encourages taking advantage of market-based, grid-connected investment as the most economically efficient way for data centres to meet their clean energy expectations.

While there is still a role for some on-site generation and storage, especially to provide back-up and enable data centres to operate as a flexible load, it is important that policy settings do not inadvertently incentivise *total* behind-the-meter solutions as this will result in inefficient whole-of-system outcomes compared to leveraging market-based, grid-connected investment.

The AEC submission has provided comments on some of the more pertinent aspects of integrating data centres into the electricity grid.

National frameworks are preferred

The publication of these principles falls on the back of the Victorian Government publishing its own Sustainable Data Centres Action Plan earlier this year. While acknowledging competitive pressures between jurisdictions can be conducive to efficient investment, it can also create confusing and duplicative processes.

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The Commonwealth Government has already published National Data Centre Expectations which capture the majority of issues laid out in this paper. It may be better for the NSW Government to adopt these principles and have supporting guidance on how they apply in the NSW context.

In either situation, the data centre principles should support investment through the NEM as the most economically efficient way to encourage new renewable generation. The value of the NEM lies in the economic pooling of risk and the diversity of load and supply which can maximise the utilisation of built generation.

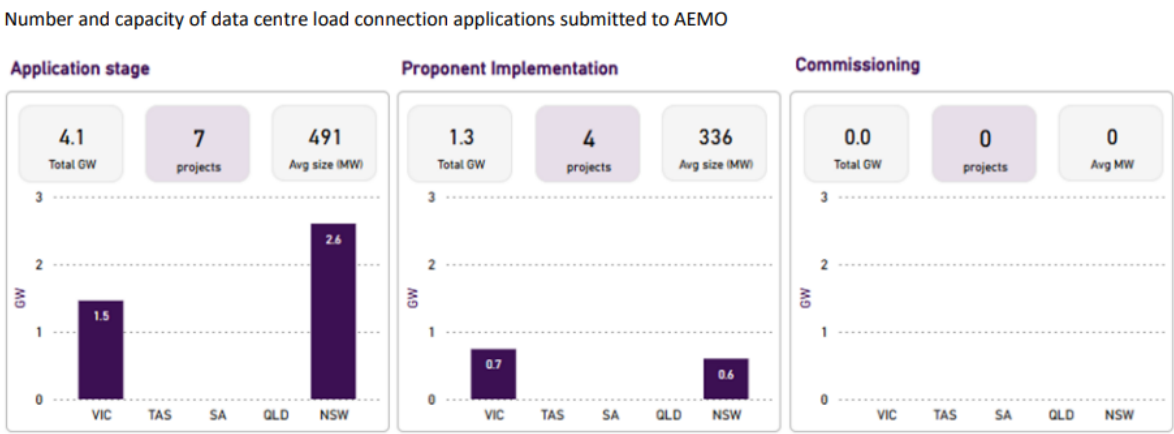
Likewise, Infrastructure NSW should be mindful that any principles align with processes underway through the national energy market bodies. For example, the Australian Energy Market Commission (AEMC) is currently developing new grid standards for data connections that will influence the technology mix data centres must use to stay connected during faults.

AEMO is taking steps to improve demand forecasting
An ongoing challenge is accurately forecasting data centre electricity demand. This challenge stems from what is being labelled "phantom demand" – where data centre demand is calculated based on the number of network connection requests. This does not take into account that data centres often make multiple requests in an attempt to secure access and that requested capacity is often higher than the expected actual draw.

AEMO commissioned Oxford Economics to look into this issue late last year. Their research found that: "Of the 44 GW of connection requests received in the 2025 IASR, only 6 GW of prospective project capacity is required to meet demand under AEMO's Step Change scenario".

AEMO's most recent Quarterly Energy Dynamics includes further information about data centre load applications (see figure below). AEMO states it "is currently gathering comprehensive data regarding distribution connections, with the aim of publishing these in future".

Figure 1: Data centre load connection applications submitted to AEMO



Source: AEMO Quarterly Energy Dynamics Q1 2026, p43.

Reducing emissions profile of data centres
There is currently no regulatory mechanism to incentivise data centres to reduce their emissions. Data centres, even hyperscalers, are unlikely to be captured by the Safeguard Mechanism's

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scope 1 emissions threshold (100,000 tCO2-e). The NSW EPA Large Emitters Guide does potentially capture some large data centres under its scope 2 emissions threshold (25,000 tCO2-e) although it is unclear what the incentives are to reduce emissions.

Under Principle 2, the Consultation Paper alludes to potential clean energy requirements to incentivise renewable generation and storage and therefore mitigate the emissions footprint of data centres. While this principle deserves consideration, such requirements should be designed carefully to avoid unintended consequences:

- Building on-site renewable generation is considerably less efficient than grid-connected investment and invites risks of inefficient build and stranded assets. This is especially important here where there is concern that the data centre bubble will eventually burst (to some extent). If that does happen, and an approach of on-site generation has been taken, then that generation may not be easily utilised elsewhere compared to if it was grid-connected.
- Noting the preference of data centres to be near city areas, the significant land required for on-site renewable generation may either not be available or have a better alternative use, as well as such areas generally being less optimal sites for weather-dependent generation.
- Data centres entering into Purchase Power Agreements (PPAs) supports clean energy investment in the grid and meets the "user-pays" intent. Although, this may result in data centres contracting existing renewables rather than incentivising new generation to be built.
- To incentivise new generation, some additionality element would be needed but this can also be a barrier to entry for investment if applied too stringently. Stringent additionality aspects like locational and time matched new renewable generation may be prohibitively expensive at this stage. It may be preferable to set expectations that data centres contract a certain percentage level of new renewable generation relative to their expected consumption (which may also help incentivise more accurate demand forecasting).[1]

As mentioned above, the AEMC's draft rules will potentially require large data centres to have some behind-the-meter technology, such as a battery, to manage system security. This will enable data centres to provide demand management services analogous to other large industrial loads and can co-exist with a market-based approach to incentivising new generation so long as there is sufficient visibility.

Similarly, as data centres aim to source appropriate back-up power supply to meet their significant availability requirements, Infrastructure NSW should consider how to efficiently mitigate emissions reductions in this space. The Consultation Paper identifies backup diesel generation as the dominant form of on-site generation in current NSW data centres and notes the environmental and regulatory constraints that would apply if diesel generation was scaled to the size of the proposed NSW pipeline. Any frameworks should therefore ensure that alternative solutions, such as behind-the-meter batteries, are rewarded for their on-site emissions reductions capability in addition to the demand response and system security benefits raised above.

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[1] Accela Research recently published some research that looks into to what extent renewable matching is economically viable for data centres.

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The starting premise should be to locate data centres close to major energy infrastructure
There should be greater scrutiny over assumptions that data centres need to be co-located near city areas to reduce latency. The NSW Net Zero Commission, for example, has suggested that many data centre workloads (e.g. batch processing, data archiving) are not latency sensitive and can operate effectively from regional locations.

So long as there is high community support, there are systems benefits to locating data centres in areas closer to generation capacity. This includes reducing congestion and network augmentation costs that would arise through centralising data centres in city locations and enabling data centres to maximise utilisation of existing transmission infrastructure and spare capacity. With proper planning, this can translate into lower Transmission Use of System (TUOS) charges and lower electricity bills for NSW customers.

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Yours sincerely,

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