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Kate Degen, Director
Australian Energy Market Commission
60 Castlereagh Street, Sydney

Submitted via online portal

Dear Ms Degan

Response to AEMC draft determination and draft rule change: Improving the NEM access standards – Package 2 (ERC0394)

Endeavour Energy appreciates the opportunity to provide this response to the AEMC's draft determination and draft rule change to update and improve the technical performance requirements for connection to the National Electricity Market, focussing on the system security impacts of large inverter-based loads. Our submission below builds on our earlier engagement through the work of Energy Networks Australia (ENA) and in other industry forums.

Endeavour Energy provides electricity distribution services to Australia's third largest economy spanning Sydney's Greater West, the Blue Mountains, the Southern Highlands, the Illawarra and the South Coast of NSW. We serve 2.8 million people living and working in our network, or 1.2 million connected customers. Our network includes over 430,000 power poles, 206 major substations and 60,000kms of powerlines including over 1,800km of sub-transmission network (132kV and/or 66kV). Our network will also contain the Illawarra Renewable Energy Zone (**REZ**) which is intended to deliver 1 GW of network capacity to facilitate wind, solar, energy storage, pumped hydro and hydrogen generation resources.

We acknowledge the importance of the AEMC seeking to address the risks posed by large inverter-based load connections through the three key changes proposed:

- articulating a clearer framework for defining and classifying large inverter-based loads (including data centres), which would determine when and to whom the stricter technical connections standards would apply for parties connecting to distribution networks;
- requiring data centres to meet specific standards (based on actual plant capabilities and grid needs) relating to disturbance ride-through requirements, staying connected during certain voltage and frequency disturbances and recovering power within defined timeframes; and
- aligning standards with global practice, to allow data centre operators to use the same equipment and feasibility studies as elsewhere, enabling faster deployment, lower costs and better investment certainty.

The implications of the proposed rule change are significant for our network. This is because we are currently supporting more than 20 data centre connections, with more likely to connect. We further note that Western Sydney is one of the fastest-growing locations for hyperscale data centres in Australia, driven by access to industrial land, fibre-optic connectivity and proximity to major customers; accordingly, we expect further material growth from this customer segment in the future.

We recognise that the AEMC has sought to take a practical approach to implementation, including in relation to timing, interrelationships with other reforms and processes, and benefits or adverse consequences for industry and consumers. Noting we are broadly aligned and supportive of the draft rule change, given the importance of being able to operationalise this rule change in a timely manner, and the important role that data centres play more broadly across the physical and digital economy, we respectfully request that the AEMC have regard to the following matters.

Enabling effective allocation of costs

To mitigate the risk that the existing customer base unduly bears costs associated with the implementation of this rule change (which, by design, is intended to relate to large inverter-based load connections), the AEMC might consider including provisions that more clearly place the onus (and associated costs) of demonstrating inverter compliance on the connecting party, rather than on the network. We consider that such an approach would be well-aligned with the general approach of connecting parties doing no harm to the existing network, and would also be consistent with the National Data Centre Expectations and the NSW Government's Data Centre Principles (currently open to consultation).

Recognition of resource scarcity and specialised skillsets

A transition to Tier 2 and 3 modelling requirements, which are comparable to large-scale generators and require a high degree of PSCAD and PSSE studies, will place a significant strain on the limited pool of specialised power systems modelling engineers in an industry that is already on an energy transition journey, potentially posing further delays on both renewable and load connections.

Simplifying the modelling process as far as reasonably practicable will assist with any impacts – such as leveraging the Early Assessment Framework to certify large IBL equipment at the OEM level, providing guidance of acceptable conservative 'rule of thumb' options in-lieu of detailed modelling, and adopting voltage disturbance ride-through and/or frequency ride-through curves.

Greater clarity regarding scope of application

To enable clarity in the scope of projects to which the standards apply, the AEMC might consider including in the transitional provisions an explicit exclusion of projects that have already entered the Chapter 5 enquiry, application or negotiation stage. Clarifying this matter would mitigate the risk of having to re-run technical studies or revisit assessments already undertaken, and would also ensure that projects are not unduly delayed. We further note that this would support the AEMC's intent (in this draft rule change) in supporting efficient investment and operational decisions, and promoting transparency and predictability.

Greater clarity regarding the approach to assessing multi-staged data centre connections

This is a key aspect as data centres typically look for a grid connection that supports their ultimate demand, but do not have the capability to reach that demand at the time they are assessed/connected. This is critical as customers could transition through different Tiers as they ramp up over many years, which creates uncertainty in assessment approach and the inverter technology that will be adopted in future stages within a rapidly changing sector. The treatment of this scenario should be standardised across all networks to create a consistent experience and expectation for customers.

Greater clarity and speed of execution could be enabled through effective guidance regarding modelling quality and roles and responsibilities

Recognising the pace at which data centre proponents are keen to progress their connections, we would encourage the publication of clear guidance regarding the following matters:

- **Modelling quality:** To reduce the risk of iterative delays, we would recommend consider establishing guidelines that are more specific about the quality of data provided by applicants within a standardised data validation framework. This will set clear expectations from customers, streamline the NSP assessment, and reduces reliance on using conservative assumptions to cover for data quality gaps.

- **Roles and responsibilities:** Recognising that the AEMC's draft rule change seeks to provide clarity regarding the appropriate roles of market bodies and participants, and noting that the draft rule change requires that AEMO must advise on the access standards that are AEMO Advisory Matters (being those matters that relate directly to AEMO's formal responsibilities under the National Electricity Law and National Electricity Rules, particularly in the connection and access standards framework in Chapter 5), it may be appropriate for the rule change to also require AEMO to provide clear, tailored guidance as to their "advisory role" regarding Schedule 5.3 (noting the flow-on impact of this on the scope of discretion and decision-making for distributors in relation to Tier 2 (<100 MW) connections).
- **Industry-facing guidance**: In light of the above, and particularly the interest in ensuring timely connections, the AEMC might consider publishing an industry-facing fact sheet to support its final rule. This would address any residual uncertainty about what these amendments may mean in a practical sense.

We would be very happy to discuss these matters further. If that would be of assistance, please contact Emma Ringland, Head of Regulation & Investments at [redacted].

Yours sincerely

[redacted]

Francoise Merit

Chief Financial Officer