



Part of Energy Queensland

6 May 2026

Ms Anna Collyer
Chair
Australian Energy Market Commission
Lodge online: www.aemc.gov.au
Project ref code: ERC0394

Dear Ms Collyer,

Improving the NEM access standards - Package 2

Queensland's two distribution network service providers (DNSPs), Ergon Energy Corporation Limited (Ergon Energy Network) and Energex Limited (Energex), welcome the opportunity to provide a submission to the Australian Energy Market Commission (AEMC) on the Improving the NEM access standards - Package 2 draft rule determination (Draft Rule).

We support the Draft Rule's modernisation of the regulatory access framework to mitigate risks to system security and avoid the unfair allocation of costs to incumbent parties where those costs are more appropriately borne by new entrants. Our feedback to the Draft Rule is set out below.

- **Classifying and defining large inverter based loads (IBL)**

Whilst we support the AEMC's proposed tiered framework for classifying IBLs, we recommend:

- The removal of rule elements that allow for discretionary application, in the interests of greater transparency, consistency, and regulatory certainty. For example: "Under the draft rule, the IBL-specific access standards...would apply to Tier 2 connections to the extent that the NSP considers appropriate..."¹. Instead, we suggest that access standards apply to all tiers, with evidence requirements scaled by tier: Tier 1 relying on recording capabilities, rather than any modelling or testing; Tier 2 on modelling or manufacturer test data; and Tier 3 on testing and modelling. It would be helpful for modelling requirements to be clarified through an AEMO guideline to ensure consistency between network service providers (NSP).

¹ [Draft rule determination, National Electricity Amendment \(Improving the NEM access standards – Package 2\) Rule 2026](#), p35.

- Additional guidance be provided for large facilities that incorporate both inverter-based and traditional loads when determining the appropriate regulatory approach.
- The consideration of IBLs other than data centres, including variable speed drives with active front ends, power-electronic-interfaced arc furnaces, railway three-phase to single-phase converters, large-scale electric vehicle fleet charging stations, and facilities that combine IBLs with inverter-based generation. These other technologies exhibit differing operating characteristics and system behaviours and therefore may require different assessment approaches. Ensuring consistency in how such connections are classified and treated is essential to provide clarity and certainty for industry participants and
- Sharing information on the volume and distribution of these connections with transmission network service providers (TNSP) and AEMO to assist in managing risks associated with clustering or significant aggregate connections.
- **Disturbance ride-through access standards for loads and clarified requirements for generators**

We consider that:

- As the power system becomes increasingly reliant on inverter-based generating sources, enhanced resilience across both load and generator connections will contribute to improved overall power system resilience.
- The requirement for IBLs to have disturbance ride-through capability is sensible and consistent with other technology standards, as noted in the Draft Rule. However, no minimum requirement is specified for frequency ride-through and therefore, guidance for DNSPs would be required when assessing whether a negotiated performance standard is acceptable.
- Information requirements being set by DNSPs is sensible, as the nature of loads can vary significantly, with implications for inherent ride-through performance.
- As DNSPs consider far more contingencies than TNSPs, due to the greater number of DNSPs' assets and the meshed nature of their networks, proponents should not be required to model every contingency contemplated by DNSPs. Instead, sound engineering judgement should continue to be applied to identify relevant contingencies for a particular connection, enabling an appropriate balance between risk management and analysis effort for both NSPs and proponents and
- It is not necessary to further clarify or restrict contingency events for Schedule 5.2. Although proponents often seek a defined list of contingencies, we do not provide one, as there is value in AEMO, NSPs and proponents each considering different contingencies to ensure comprehensive system coverage.

- **Power system stability and protection requirements**

As Ergon Energy Network and Energex have experienced network instability arising from the behaviour of some large generation-connected customers, we support amendments to clarify the applicable requirements to large loads greater than 100 MW, particularly where behaviour under weak network conditions is not well understood.

Currently there is a lack of clarity regarding how customers would practically implement an instability detection system, with available technologies still at a relatively immature stage. We also note that AEMO are yet to publish guidance on instability protection and we suggest that industry guidance is required to enable stakeholders to effectively and consistently meet this performance standard.

With regards to Rod Hughes' proposal to change the term 'primary protection system' to 'main protection system'², the AEMC has stated that this is unnecessary on the basis that these are used interchangeably in industry and are well understood. However, we believe the AEMC's assertion does not reflect industry practice as it is our experience that these terms are not consistently understood nor used interchangeably, and their interpretation varies materially across NSPs, organisations, professional groups, manufacturers, consultants, and protection engineers trained in different jurisdictions and standards' environments.

Thus, rather than demonstrating common understanding, current usage relies heavily on local convention, which is not visible or enforceable through the National Electricity Rules (NER). This absence of clarity creates avoidable ambiguity and increases the risk of misinterpretation when obligations are read in isolation from local practice. Accordingly, retaining existing terminology on the basis that it is "well understood" does not resolve the problem, it entrenches it.

The AEMC also commented on Rod Hughes' proposed inclusion of the terms "protection element", "protection function" and "control function", stating that the AEMC: "...have not found evidence of a problem with the existing use of these terms".³ We believe this stance reflects one of the many ongoing sources of confusion within the NER, and it is surprising that no evidence was found to support the need for improved clarity through precise and consistent definitions.

The underlying issue appears to be that attempts to clarify meanings and definitions, such as the current proposal, have likely been made numerous times in the past. Each attempt seems to have delivered only a partial solution, resolving one ambiguity while unintentionally introducing others. These incremental or piecemeal fixes perpetuate ambiguity and allow the text to be misconstrued, in some cases deliberately, to support particular arguments.

What appears to be required instead is a fundamental review and structured redevelopment of the definitions relating to protection, using a staged and hierarchical approach. This would involve explicitly defining, for example:

- What is network protection fundamentally intended to achieve?

² [Ibid.](#), p91.

³ [Ibid.](#), p93.

- What level of redundancy is generally required for network protection?
- What term describes the totality of network protection, for example, does it constitute a “system of systems”?
- What term applies to protection for individual plant items such as lines, transformers, or busbars, etc.? Is this a protection system or a protection scheme?
- If this is considered a system, how are multiple protections for the same plant item classified? For instance, a transformer may have a biased differential relay as one form of protection, and a combination of high voltage overcurrent, neutral earth fault, and low voltage overcurrent protection as another. Are these separate schemes?
- If these are schemes, what are their constituent parts? Do these include hardware such as circuit breakers, current transformers, voltage transformers, relays, direct current systems, and communications, as well as non-hardware components such as software and settings? Are these collectively referred to as components or elements? and
- Would the individual capabilities within a protection relay be classified as functions or elements?

Establishing clear, consistent definitions across these layers would go a long way toward improving coherence within the NER and reducing ambiguity in both interpretation and application.

- **System strength access standards applicable to loads and high voltage direct current links**

Ergon Energy Network and Energex support increasing the threshold for the application of short-circuit ratio (SCR) withstand requirements to connections of 30 MW and above, noting that connections of this scale have a greater potential to impact system strength. However, we consider that further clarification is required on how SCR withstand requirements are to be practically demonstrated for IBLs that do not have voltage control capability.

AEMO has previously published guidance in its Technical Note on SCR Withstand⁴ and we consider this guidance could be expanded to more explicitly address loads without voltage control capability and their ability to operate at an SCR of 3.0. We recommend that the Minimum Access Standard for SCR withstand be set at a level that can be met by a load complying with the Power Factor Automatic Access Standard,⁵ and that AEMO provide further guidance to support consistent interpretation and implementation by proponents and NSPs.

⁴ [System Strength Impact Assessment Guideline Withstand SCR Methodology Review, February 2025, AEMO.](#)

⁵ We have observed challenges with convergence while conducting modelling to assess these projects, due to the lack of voltage control from these devices.

- **Further NER improvements to promote power system security and stability**

Ergon Energy Network and Energex support measures to modernise power system responses to better reflect the evolving capability of loads and bi-directional units, including fast-ramping behaviour. We consider that under-frequency load shedding has become increasingly complex, with distribution feeder behaviour varying significantly by season and time of day. In this context, we support measures that provide flexibility in how the required power system correction is delivered.

We consider that guidance would be required to define what constitutes 'fast' ramping, including relevant timeframes, ramp rates, and preferred trigger mechanisms.

Should the AEMC require additional information or wish to discuss any aspect of this submission, please contact either myself, or Lindsay Chin on [REDACTED]. This submission does not contain confidential information and may be published.

Yours sincerely

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