



Part of Energy Queensland

19 June 2025

Ms Anna Collyer
Chair
Australian Energy Market Commission

Project Reference Code: ERC0394

Dear Ms Collyer

Consultation Paper – Improving the NEM access standards – Package 2

Queensland's Distribution Network Service Providers (DNSPs), Ergon Energy Corporation Limited (Ergon Energy) and Energex Limited (Energex), welcome the opportunity to respond to the Australian Energy Market Commission's (AEMC) improving the NEM access standards – Package 2 Consultation Paper.

Ergon Energy and Energex are supportive of reforms to access standards which strike a considered balance between maintaining the stability and security of the power system, whilst improving the cost and time efficiency of new connections as the power system evolves. We are generally supportive of the reforms proposed in the Consultation Paper. However, consider greater industry collaboration and deeper technical understanding is required for load performance more broadly. In addition, where new or amendments of technical requirements are contemplated, consideration of local network requirements will provide a more cost-efficient approach.

Ergon Energy's and Energex's detailed comments in response to the questions posted in the Consultation Paper are provided in **Attachment A**. Neither this letter nor our enclosed comments contain confidential information.

Should you require additional information or wish to discuss any aspect of this submission, please do not hesitate to contact me at the contact details below or Sarah Jacobson on 0484 783 507.

Yours sincerely

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Energex Limited and Ergon Energy Corporation Limited

Response to AEMC Consultation Paper – Improving the NEM access standards – Package 2

Consultation Question	Ergon Energy and Energex Comments
<p>Question 1: Defining large loads in the context of this rule change request</p> <ol style="list-style-type: none">1. Are stakeholders supportive of AEMO's ongoing process to address the system security implications and performance standards for large loads, including how large loads ought to be defined in the NER?2. To what extent do stakeholders think that the Commission should consider the definition of 'large loads' in the context of this rule change?3. If it is considered, should large loads be defined based on the relevant access standard, or should a large load be more holistically defined in the NER?4. Alternatively, should we consider whether to apply guiding principles and timing for AEMO to produce a proposed definition, which is currently being considered in AEMO's Large Loads Review?	<ol style="list-style-type: none">1. Ergon Energy and Energex are supportive of AEMO's efforts to better understand how load technologies can impact the broader network, and we consider that appropriate definitions and performance standards should be developed. We also consider that more broadly, greater definition and technical understanding is required for load performance in general, as the current definition is not clear in terms of which load technologies it applies to. There is also not a clear industry understanding of what 'susceptibility to control instability means'. As such, greater technical review of various technology types and performance is required to appropriately gauge risks to the network.2. We consider that the definition of 'large loads' should be considered by the Commission in the context of this rule change as the broader system impact of a 5MW load is different to the impact of a 200MW load. For example, it may be appropriate to designate all loads of 5MW and larger as 'large loads', however, some performance requirements may only apply to larger loads (e.g. 100MW).3. There may be access standards which are universally required, and others more focussed on wider system stability that could be specific to specific sized loads. As such, we do not consider it appropriate to define large loads based on the relevant access standard.

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	4. Ergon Energy and Energex have no comment.
<p>Question 2: Amending the NER to address the influx of large loads</p> <ol style="list-style-type: none"> 1. Do stakeholders have any reflections or data and information they wish to share with the AEMC regarding the prospective growth of large loads connecting to the NEM, including from international experience? 2. Do stakeholders agree with AEMO that the expected growth of large loads may present a risk to power system security? 	<ol style="list-style-type: none"> 1. Ergon Energy and Energex have no comment. 2. Ergon Energy and Energex agree with AEMO that the expected growth in large loads presents a risk to power system security, as the tripping-off of large loads during minor power system disturbances has the potential to cause significant power system disruption.
<p>Question 3: HVDC links to procure system strength services from third parties</p> <p>In relation to AEMO's proposal to amend NER clause S5.3a.7 to allow all HVDC links to procure system strength services to meet the short circuit ratio requirement of 3.0:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree that the NER should be amended to allow HVDC link owners to procure system strength services from third parties? Is the current inability to do so a material problem, or will it become a material problem? 2. Do stakeholders consider the proposed rule should replicate the corresponding NER clause S5.2.5.15 for generating systems and IRS to promote consistency? 3. Do stakeholders consider that procurement should be subject to agreement between the HVDC link owner, NSP, system strength provider, and AEMO? Do stakeholders have any views as to how involvement from AEMO in such an agreement would operate? 	Ergon Energy and Energex provides no comment.

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<p>4. Are there alternative solutions stakeholders consider would be more effective?</p> <p>5. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.</p>	
<p>Question 4: Limiting short circuit ratio requirements for customer loads to IBR, and introducing flexibility to the access standard</p> <p>In relation to AEMO's proposal to limit the application of short circuit ratio requirements under clause S5.3.11 to large inverter-based resources that is IBL:</p> <ol style="list-style-type: none"> 1. Do stakeholders consider it an issue that the short circuit ratio requirements under clause S5.3.11 apply to all IBR plant without any size threshold? <ol style="list-style-type: none"> a. Should it only apply to large inverter-based resources as defined in AEMO's SSIAG? b. Is the definition of a large inverter-based resource in the SSIAG sufficient for the purposes of this proposal? 2. Are there alternative solutions stakeholders consider would be more effective? 3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning. 	<p>In relation to AEMO's proposal to limit the application of short circuit ratio requirements under clause S5.3.11 to large inverter-based resources that is IBL:</p> <ol style="list-style-type: none"> 1. Ergon Energy and Energex consider that the current short circuit ratio requirements under clause S5.3.11 which apply to all loads, regardless of size or relative strength of the surrounding network, will likely create a significant cost impost on IBR proponents. <ol style="list-style-type: none"> a. We consider that the application of the short circuit ratio (SCR) requirements to IBR plant should be considered against several criteria, including the size of IBR plant and local site conditions, to ensure the application of the requirements demonstrates a benefit. Models for many of these loads, such as electric bus chargers and uninterruptable power systems at data centres, do not exist and if the local site conditions make it unlikely for a particular load to be exposed to a SCR of 50, demonstration of meeting this performance standard will be costly with minimal benefit. b. The definition of large IBR in AEMO's System Strength Impact Assessment Guideline (SSIAG) is vague and could be applied to a range of unintended technologies such as variable speed drives or inverter-driven air conditioners, which is not the intent of the SSIAG. Ergon Energy and Energex endeavour to use engineering

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<p>In relation to AEMO’s proposal to amend the NER to introduce flexibility in clause S5.3.11 to allow the NSP and AEMO discretion to agree to a minimum short circuit ratio requirement above the minimum requirement of 3.0:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree there should be flexibility to agree to higher short circuit ratio requirements? Could there be unintended consequences? 2. Are there alternative solutions stakeholders consider would be more effective? 3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO’s proposed rule? If so, please describe your concerns and any related suggestions and reasoning. 	<p>judgement in assessing such loads. However, we consider broader NEM consistency is preferred to avoid inconsistency in interpretation between NSPs.</p> <ol style="list-style-type: none"> 2. Ergon Energy and Energex consider that greater industry collaboration is required to better understand the range of power electronic-based loads in order to gain a better understanding of performance capabilities and avenues to developing appropriate models. This is because requirements for dynamic modelling of inverter-based loads is presented under AEMO’s SSIAG, however, there is limited industry maturity in providing the applicable models. 3. Ergon Energy and Energex provides no comment. <p>In relation to AEMO’s proposal to amend the NER to introduce flexibility in clause S5.3.11 to allow the NSP and AEMO discretion to agree to a minimum SCR requirement above the minimum requirement of 3.0:</p> <ol style="list-style-type: none"> 1. We consider that some distribution connected loads may be connected in very high fault level areas, with high SCRs at their connection point. As such, some flexibility in accounting for the local network will provide a most cost-efficient approach. 2. Ergon Energy and Energex provides no comment. 3. Ergon Energy and Energex provides no comment.
<p>Question 5: New definitions for protection systems</p> <p>In relation to Rod Hughes Consulting’s Definitions of protection system requirements rule change request:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree that the requirements for generator protection systems are currently unclear? If so, what are the impacts of this lack of clarity? 	<p>In relation to Rod Hughes Consulting’s Definitions of protection system requirements rule change request:</p> <ol style="list-style-type: none"> 1. Ergon Energy and Energex agree that the requirements for generator protection systems are unclear, and that the lack of clarity results in users investing time and resources to interpret the system requirements. <ol style="list-style-type: none"> a. Ergon Energy and Energex provides no comment.

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<ul style="list-style-type: none"> a. Similarly, do stakeholders consider the requirements for loads' and HVDC links' protection systems are currently unclear? 2. Do stakeholders support the proposal to update and add new NER definitions for types of protection systems? <ul style="list-style-type: none"> a. Do stakeholders have feedback on the proposed new definitions themselves? 3. Do stakeholders have any concerns or suggestions in relation to this element of Rod Hughes Consulting's proposed rule? <ul style="list-style-type: none"> a. If so, please describe your concerns and any related suggestions and reasoning. 	<ul style="list-style-type: none"> 2. We do not support the proposal to update and add new NER definitions for types of protection systems. <ul style="list-style-type: none"> a. Energex and Ergon Energy agree in principle that providing definitions of important terms in the NER can assist users with interpreting and understanding the generator protection system requirements. However, it is our view that the proposed definitions do not overall add clarity, as the proposed definitions themselves may not be readily understood or universally agreed. 3. Ergon Energy and Energex considers that a broader review of the drafting and associated definitions of the protection system requirements would be beneficial to users.
<p>Question 6: Conditions for generator protection systems</p> <p>These questions relate to Rod Hughes Consulting's Conditions for generator protection systems rule change request.</p> <ul style="list-style-type: none"> 1. Regarding the proposal to remove paragraph (b) of clause S5.2.5.9: <ul style="list-style-type: none"> a. Do stakeholders agree that paragraph (b) is redundant and/or misleading, or do stakeholders have a different interpretation? b. Do stakeholders support Rod Hughes Consulting's proposal to remove paragraph (b)? 2. Regarding the proposal to add a new provision in the minimum access standard: 	<ul style="list-style-type: none"> 1. Regarding the proposal to remove paragraph (b) of clause S5.2.5.9: <ul style="list-style-type: none"> a. Ergon Energy and Energex agree with the interpretation that the current paragraph (b) is redundant and misleading. b. We therefore support the proposal to remove paragraph (b) of clause S5.2.5.9. 2. Regarding the proposal to add a new provision in the minimum access standard: <ul style="list-style-type: none"> a. Ergon Energy and Energex support the amendments proposed to the new paragraph (d) of clause S5.2.5.9 which replaces 'automatic' with 'minimum'. b. We support the proposal. 3. Ergon Energy and Energex provides no comment.

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<ul style="list-style-type: none"> a. Do stakeholders agree that the minimum access standard may create risks to power system security because it does not require additional redundancy in protection systems? b. Do stakeholders support Rod Hughes Consulting's proposal to give AEMO and the NSP discretion to increase redundancy requirements in the minimum access standard if required to prevent adverse impacts on power system security? <p>3. Do stakeholders have any concerns or suggestions in relation to this element of Rod Hughes Consulting's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.</p>	
<p>Question 7: Provision of information on ride-through capability</p> <p>In relation to AEMO's proposed changes to enable NSPs to request information on loads' ride-through capability:</p> <ul style="list-style-type: none"> 1. Do stakeholders agree that NSPs and AEMO lack visibility of loads' ride-through capability and that this creates a challenge for system security? 2. Do stakeholders support AEMO's proposed rule to require network users to provide information about connecting load's ride-through capability to the NSP on request? 3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? 	<ul style="list-style-type: none"> 1. Ergon Energy and Energex agree that a lack of visibility of loads' ride-through capability creates a challenge for network operation and system security. As such, Ergon Energy and Energex discuss this with large connection applicants to better understand the connection requirements. 2. Ergon Energy and Energex are supportive of AEMO's proposal to formalise these requirements. 3. Ergon Energy and Energex provides no comment.

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<p>Question 8: Protection settings to maximise ride-through performance</p> <p>In relation to AEMO’s proposed changes to amend clause S5.3.3(c) of the NER to encourage protection settings that maximise loads’ ride-through capability:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree that the current arrangements allow conservative load protection settings that may unnecessarily reduce loads’ ride-through capability? 2. Do stakeholders support AEMO’s proposed rule requiring cooperation between the NSP and the network user in the design of protection systems and settings to maximise ride-through capability? 3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO’s proposed rule? If so, please describe your concerns and any related suggestions and reasoning 	<ol style="list-style-type: none"> 1. Ergon Energy and Energex consider that there is a lack of clear information on why certain loads feel the need to trip-off the network for any voltage (or other) fluctuation. We therefore consider greater understanding of these technical limitations is required to determine what ride-through is possible, balancing system stability with plant performance and potential damage. We note some international jurisdictions are developing updates to their grid codes, specifically for data centre ride-through requirements.¹ 2. Ergon Energy and Energex support AEMO’s proposed rule, and we consider that appropriate protection design should form part of the connections process. 3. Ergon Energy and Energex provides no comment.
<p>Question 9: New access standard for detection and response to instability</p> <ol style="list-style-type: none"> 1. Do stakeholders agree that there is an emerging need for large inverter-based loads to play a role in managing instability in the NEM? 2. Do stakeholders support AEMO’s proposed new access standard for instability detection and response by loads as set out in Box 4? <ol style="list-style-type: none"> a. Which parts of the proposal do stakeholders support, or oppose? 	<ol style="list-style-type: none"> 1. Ergon Energy and Energex agree that with a more distributed system, greater consideration of stability is required. As such, the responsibility for maintaining stability should also extend to loads as it currently does to generators. 2. Ergon Energy and Energex are supportive that the standard should apply to loads that could have an appreciable effect on the power system. 3. Ergon Energy and Energex provides no comment.

¹ [The Grid Code](#) | [The Grid](#) | [EirGrid](#)

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<p>b. Do stakeholders agree with the materiality thresholds for application of the automatic access standard and minimum access standard (see Table 4.2)?</p> <p>3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.</p>	
<p>Question 10: Under-frequency ramp down of large loads</p> <p>In relation to AEMO's proposed changes to amend the NER to facilitate the ability for loads to ramp down:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree some loads may be more flexible with the ability to ramp down their load in an emergency rather than disconnecting in blocks? 2. Do stakeholders agree that the NER should be amended to allow for the provision of interruptible load by way of fast ramp down? 3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning 	<ol style="list-style-type: none"> 1. Ergon Energy and Energex agree with this statement. 2. Ergon Energy and Energex agree with this statement. 3. Ergon Energy and Energex provides no comment.
<p>Question 11: Clarification of credible contingency definition for disturbance ride-through</p> <p>In relation to AEMO's proposed changes to amend clause S5.2.5.5 of the NER to clarify the scope of contingency events that a schedule 5.2 plant must be able to ride through:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree that the current definition for the types of credible contingencies in relation to disturbance ride-through 	<ol style="list-style-type: none"> 1. Ergon Energy and Energex do not consider the contingencies that should be assessed for schedule 5.2 plant to be unclear. Proponents often ask us for a 'list' of contingencies, however, this is not an approach we take as we consider that there is benefit in AEMO, the NSP and the proponent all considering different contingencies, to ensure coverage. 2. We consider that that site-specific considerations should apply, to gauge the appropriate balance of risk vs analysis burden for both NSPs and proponents.

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<p>requirements for schedule 5.2 plant is unbounded/IMPLIED to be unbounded and that this presents an issue?</p> <ol style="list-style-type: none"> 2. Do stakeholders agree that arrangements poorly define the types of credible contingencies in relation to disturbance ride-through requirements for schedule 5.2 plant? 3. Do stakeholders support AEMO's proposed rule to clarify the types of contingency events that a schedule 5.2 plant must be able to ride through? 4. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning. 	<ol style="list-style-type: none"> 3. Ergon Energy and Energex provides no comment. 4. Ergon Energy and Energex provides no comment.
<p>Question 12: Testing and commissioning</p> <ol style="list-style-type: none"> 1. Do stakeholders support AEMO's proposed amendments to clause 5.7.3 to refer to schedule 5 plant in respect of AEMO's ability to request compliance tests for registered plant? 2. Do stakeholders support AEMO's proposed changes to clauses 5.7.2 and 5.7.3 to extend the rights for testing of power system plant to apply to non-registered schedule 5 plant? 3. Do stakeholders support AEMO's proposed changes to the NER to extend the requirement for coordinating commissioning procedures for non-registered schedule 5 plants with a maximum capacity equal to or greater than 30MW or 30MVA? 4. Should the Commission consider extending enforceability and compliance requirements under rules 4.14 and 4.15 to all 'schedule 5 participants', which includes non-registered participants? 	<p>Ergon Energy and Energex provides no comment.</p>

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<p>5. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.</p>	
<p>Question 13: Extension of time for complex issues in future access standards reviews</p> <p>In relation to AEMO's proposal to amend clause 5.2.6A of the NER to allow flexibility for extending the time limit for completing each review:</p> <ol style="list-style-type: none"> 1. Do stakeholders agree that the requirement to complete each review within 12 months of the approach paper being published is too inflexible or may inhibit proper analysis and consultation? 2. Do stakeholders consider that AEMO should be responsible for setting a new date for publication of the final report? Is there an alternative approach that would better address the issue? 3. Do stakeholders agree that AEMO should publish a notice when an extension is needed, outlining the reasons as they may relate to complexity/difficulty, or a material change in circumstances? 4. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning? 	<p>Ergon Energy and Energex provides no comment.</p>
<p>Question 14: Assessment framework</p> <p>Do you agree with the proposed assessment criteria? Are there additional criteria that the Commission should consider or criteria included here that are not relevant?</p>	<p>Ergon Energy and Energex provides no comment.</p>