13 July 2018

Mr Richard Owens
Executive General Manager
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

ERC0222 Generator Technical Performance Standards – Draft Determination

Ergon Energy Corporation Limited (Ergon Energy) and Energex Limited (Energex) welcome the opportunity to provide comment to the Australian Energy Market Commission regarding its Draft Determination on the National Electricity Amendment (Generator Technical Performance Standards) Rule 2018.

This submission, which is available for publication, is provided by Energex and Ergon Energy as distribution network service providers operating in Queensland.

Should you require additional information or wish to discuss any aspect of Energy Queensland's submission, please do not hesitate to contact either myself on (07) 3851 6416 or Trudy Fraser on (07) 3851 6787.

Yours Sincerely

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National Electricity Amendment (Generator Technical Performance Standards) Rule 2018

Joint response to the AEMC's Draft Rule Determination

13 July 2018

Part of the Energy Queensland Group

ABOUT ERGON ENERGY

Ergon Energy Corporation Limited (Ergon Energy) is part of the Energy Queensland Group and manages an electricity distribution network which supplies electricity to more than 740,000 customers. Our vast operating area covers over one million square kilometres – around 97% of the state of Queensland – from the expanding coastal and rural population centres to the remote communities of outback Queensland and the Torres Strait.

Our electricity network consists of approximately 160,000 kilometres of powerlines and one million power poles, along with associated infrastructure such as major substations and power transformers.

We also own and operate 33 stand-alone power stations that provide supply to isolated communities across Queensland which are not connected to the main electricity grid.

ABOUT ENERGEX

Energex Limited (Energex) is part of the Energy Queensland Group and manages an electricity distribution network delivering world-class energy products and services to one of Australia's fastest growing communities – the South-East Queensland region.

We have been supplying electricity to Queenslanders for more than 100 years and today provide distribution services to almost 1.4 million domestic and business connections, delivering electricity to a population base of around 3.4 million people via 52,000km of overhead and underground network.

1 INTRODUCTION

Ergon Energy and Energex welcome the opportunity to provide comment to the Australian Energy Market Commission (AEMC) on its National Electricity Amendment (Generator Technical Performance Standards) Rule 2018 Draft Rule Determination (Draft Determination).

This submission, which is available for publication, is provided by Ergon Energy and Energex as distribution network service providers (DNSPs) operating in Queensland.

Ergon Energy and Energex have an unprecedented number of connection applications for large scale renewable projects in their distribution areas. Ergon Energy and Energex supports the intent of AEMC's focus in the areas as it supports and promotes the consideration of performance standards that safe guards customers, existing proponents and networks, particularly in weak grid areas.

Ergon Energy and Energex are committed to providing:

- safe, reliable and affordable electricity supply;
- a great customer service experience;
- customers greater control over their energy consumption;
- efficient and sustainable energy solutions; and
- access to the next wave of energy linked innovative technologies and renewables.

Ergon Energy and Energex are both members of Energy Networks Australia (ENA), the national industry association representing businesses operating Australia's electricity transmission and distribution, and gas distribution networks. The ENA has prepared a comprehensive response to the AEMC's Draft Determination to which we have contributed, and are supportive of the positions presented in their response.

Ergon Energy and Energex note the AEMC's involvement throughout the consultation process and appreciate their willingness to meet with the ENA and DNSP's throughout this process. We broadly support the general approach taken by the AEMC, and overall we agree with the changes to the negotiation framework. However, there are some elements of the generator performance standards (GPS) which we seek further clarification on, and these are highlighted in the following section. We are available to discuss this submission or provide further detail regarding the issues raised, should the AEMC require.

Broadly, Ergon Energy and Energex highlight key questions related to S5.2.6.1 (Monitoring and Control), S5.2.5.13 (Mode of control) and S5.2.5.4 (Voltage disturbance). We believe that our transitional arrangement suggestion is pragmatic and supports existing proponents complete their GPS.

2 TABLE OF DETAILED COMMENTS

Technical performance standard	Ergon Energy and Energex response
Active Power Control	
S5.2.5.14	It is our understanding that this would apply to any generators seeking connection under Chapter 5 of the National Electricity Rules. However, we seek clarity on the minimum sized generator that this would apply to.
Monitoring and Control	
S5.2.6.1	Ergon Energy and Energex question if there has been any modelling on potential congestion this may cause in the Supervisory Control and Data Acquisition (SCADA) system. There are a number of SCADA points in the Queensland network on a 15 second update, and it is not yet known what effect the additional volume of data on a 4 second update cycle will have or what the cost implications will be. Additionally, a number of distribution connected generators do not have sufficient communications to enable this and the cost to install these would be significant.
	We consider it would be unacceptable to change the voltage setpoint or mode of generators without agreement from the network service provider (NSP). It is unclear how this change would be applied and how it would be co-ordinated. We question if this is to be determined through the procedure described under S5.2.5.13.
Reactive Power Capability	
Minimum	While EQL believes a minimum requirement would have benefit in a distribution network (particularly weak systems), we accept the rationale given by the AEMC. However, we would like to highlight that the wording implies a unity power factor which may not reflect the intention of the minimum access standard and the behaviour of those generating systems which perform at this level.

Technical performance standard	Ergon Energy and Energex response
Reactive Power Control	
S5.2.5.13 – Mode of control	While EQL supports the intent of having generating systems proved to be able to operate in multiple modes, proving the performance of each will require an additional number of studies to be completed especially where there are multiple generators in the area. As a result, the time required for assessing and approving a connection may need to be extended beyond what is described in 5.3.6(a)(2). We seek clarity on whether an NSP would have the ability, where a proponent has requested Minimum and which was accepted at that time, to in the future request a change to a different mode and perform the required diligence at that time.
Performance	We seek clarification on how the 0.5% and 2% are intended to be calculated. For example, for power factor 0.95, is the range for 0.5% 0.95475-0.94525?
Rise and settling	It should be noted that a response to the voltage step test would only apply for when the generator was in voltage control mode. In power factor control mode would a similar settling time apply for a change in power factor setpoint? Or is there some other transient response which must be considered?
Minimum	We suggest changing 98-102% of *normal voltage* to *setpoint* or *agreed* voltage, for if the setpoint is 1.03 then a change of 1.02 to 0.98 is meaningless.
Reactive Current Response	
Minimum – overvoltage	We seek clarification on when the 180ms applies, i.e. does it apply from the initial 2s fault response, such that total time is 2.18s?
Continuous Uninterrupted Operation	
Voltage disturbance – S5.2.5.4	We are concerned with the upper limit of 'greater than 130%'. It is unclear what the expected upper limit is. Additionally, generally speaking for our anti-islanding systems, we are relying on the overvoltage which occurs in an islanding situation (our systems do not typically have protection interlocks, which would represent an increased cost). As a DNSP we have obligations to our customers in terms of voltage

Technical performance standard	Ergon Energy and Energex response
	performance that we must maintain on the distribution network, and while the generators are not necessarily causing the fault, it is a concern that they are assisting to sustain the network in such extreme conditions for such extended periods of time. As a consequence, it may be likely that we seek to implement a negotiated access standard for such connections in the distribution network. Further clarification is also required if the expectation is that dedicated and shared connection assets (for example, upstream transformers) will need to be rated for 110%-115% voltage for twenty minutes. We welcome the AEMC's decision to not implement the proposed changes to S5.1a.4.
Multiple voltage disturbances	While we agree with the need for this provision, we are not sure how this clause would be tested and compliance proven in a consistent manner. We request that an application guide be developed to assist in the assessment of this clause.
Active power recovery	We appreciate the ability to negotiate an appropriate recovery rate which reflects to local power system limitations.
System Strength	
No minimum requirement for short circuit ratio (SCRs)	We appreciate AEMC's reasoning in rejecting a minimum SCR connection requirement and do not dispute it.
	We agree that it would be helpful to capture the minimum SCR or minimum fault level the plant can perform to and the SCR or minimum fault level for which the system was tuned, in order to improve the connection process for future systems. A central point like the GPS would improve the ease of finding this information rather than needing to go through the Releasable User Guide.
Consequential	
5.3.9 changes	Negotiation between the automatic and the existing performance would be a reasonable compromise.
Rule change review	We agree that such a change is reasonable.
NSP to provide the Australian Energy Market Operator	AEMO will already be informed of enquiries through involvement with the Preliminary Assessment under the system strength implementation guidelines. While we do not in principle object to providing these

Technical performance standard	Ergon Energy and Energex response
(AEMO) with enquiry forms	forms to AEMO, we are conscious to ensure that there is no breach of customer privacy requirements and request further advice on this matter.
Transitional	
Transitional arrangements	We acknowledge that while there may be a 'rush' to have projects agreed by the 27 November 2018, this would exist no matter what date was set. We strongly support this date, noting we currently have over 1GW of renewable projects in the preliminary enquiry stage, who the new performance standards would apply to. However, some flexibility would be appreciated where there is a minor item outstanding on the 27 November 2018, that where agreed to by AEMO and the NSP, final agreement on the existing provisions can still be outworked. Practically we expect that it could be one or two projects in Queensland with an additional one or two week period for final agreement. We would like to include 'a *completed and accepted application* by the 2 October 2018' to the existing agreed performance standards requirement to reduce the 'wasted effort' of assessing inadequate submissions by the commencement date.