



17 June 2021

The Commissioners
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Sent to: AEMC by online lodgement.

Dear Commissioners

**Efficient Management of System Strength on the Power System
Response to Draft Decision
ERC 0300**

Major Energy Users Inc (MEU) is pleased to provide its thoughts on the draft decision relating to the efficient management of system strength on the power system.

The MEU was established by very large energy using firms to represent their interests in the energy markets. With regard to all of the energy supplies they need to continue their operations and so supply to their customers, MEU members are vitally interested in four key aspects – the cost of the energy supplies, the reliability of delivery for those supplies, the quality of the delivered supplies and the long-term security for the continuation of those supplies.

Many of the MEU members, being regionally based, are heavily dependent on local staff, suppliers of hardware and services, and have an obligation to represent the views of these local suppliers. With this in mind, the members of the MEU require their views to not only represent the views of large energy users, but also those interests of smaller power and gas users, and even at the residences used by their workforces that live in the regions where the members operate.

It is on this basis the MEU and its regional affiliates have been advocating in the interests of energy consumers for over 20 years and it has a high recognition as providing informed comment on energy issues from a consumer viewpoint with various regulators (ACCC, AEMO, AEMC, AER and regional regulators) and with governments.

The MEU recognises that the change in generation mix (especially the increased share of variable renewable energy (VRE) generators) in the NEM is resulting in some negative impacts on the electricity supply system and that some actions are

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needed to ensure that the supply system is maintained in a secure and reliable manner. Because of the concerns the MEU has about the issue of system strength (SS), it has been involved in a number of exchanges with the AEMC of information and views about the way SS should be managed, subsequent to the response it provided to the Consultation Paper on the TransGrid rule change proposal.

The MEU notes that the AEMC has made a Draft Decision on the rule change proposal from TransGrid seeking to address the issue of SS in the transmission network and the key elements of that draft decision are to have:

- AEMO, with the involvement of the TNSPs, identify the location and extent of SS needs in each TNSP network to develop on an ex-ante basis an assessment of SS needs at various nodes and REZs so that SS will be in place as and when VRE generators seek connection.
- The TNSPs will provide the necessary assets to meet the forecast potential SS needs and that the costs of this will be borne by consumers as a prescribed service provided by the TNSP.
- Connecting VRE will be required to make a payment to the TNSP for the SS it requires from the TNSP.
- Connecting generators will be required to meet certain performance standards to ensure that they use only efficient levels of SS at their points of connection.

The MEU does not support the draft rule as it has a number of fundamental concerns about the allocation of risk and the processes that are proposed.

The need for SS provision

The MEU accepts that there is a need for the provision of SS but how this need will be fulfilled is critical. It is pointed out that the VRE will not be required to use the SS provided for them by TNSPs at consumer expense – the VRE has the ability to seek the lowest cost option for it to ensure their actions do not impinge on the levels of SS required in the network, but consumers have no option but to pay for the provision of SS determined by AEMO and the TNSPs, whether it is ultimately needed or not, exposing consumers to a significant risk that they have no ability to manage.

Ex ante forecasting of need

The draft rule is predicated on AEMO (and the TNSP) being able to forecast the **potential** need for SS accurately¹. This is further clouded by an assumption that all

¹ The draft decision assumes that the forecasting of need by AEMO will be accurate. This is a courageous assumption as AEMO has consistently forecast needs on an excessively conservative basis.

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of the VRE connecting will buy a share of the SS provided, so that all of the SS provided under this draft rule approach will be utilised.

This is a very courageous assumption, and it effectively passes all of the risk of the AEMO assessment, the TNSP costs and the amount of VRE take up of the SS provided, to be borne by consumers.

The approach proposed in the draft rule is effectively based on “old” technology² in that VRE now has the ability to implement, at a relatively low cost, its own SS through the use of grid forming inverters that effectively obviate the need to externally provided SS³. Additionally the rate of change of technology implies that, in addition to grid forming inverters, new technology could further provide alternatives to network based solutions as a source of SS in the future. The approach implicit in the draft rule is that using grid forming inverters or other new technology will be a higher cost than a network-based solution for SS provision. This is another courageous assumption!

Overall, it will be consumers that bear the risk of inaccurate forecasting of need as well as the risk that if VRE finds lower cost solutions to provide the SS appropriate for their installations, with consumers bearing the costs of under-utilised and/or stranded assets, for decades to come.

Who should bear this risk?

A core aspect used by the AEMC in previous decisions has been that the party best able to manage the risk should bear the risk. Consumers have no ability to bear the risk inherent in the provision of SS as they have no control over the location, size, and technology decisions of VRE that leads to the need for SS at any location within the network.

The issue of ex ante provision for building network assets was a core focus of the Scale Efficient Network Extensions (SENE) review a decade ago. In the SENE final decision (page 12), the AEMC concluded that:

“...the Rule as Made more **efficiently allocates the asset stranding risk ... to those entities best able and willing to manage that risk** (registered participants or investors) as opposed to those who are unable to manage such risk (consumers)...”
(emphasis added)

In the same final decision on SENE, the AEMC added (page13)

² AEMO has advised that it will use synchronous condensers as the basis for costing of their proposed technology to provide SS, some TNSPs have made similar observations and ElectraNet implemented this as a solution in SA.

³ The draft rule recognises this but still decides to implement a network-based solution.

“...the Rule as Made promotes more efficient investment in electricity services by maintaining a market based approach to connections **rather than requiring nonmarket facing entities to take risks on generator investment decisions.**”
(emphasis added)

In the SENE review process, the initial rule change proposal was that consumers should bear the risk of the network extensions (just as the current draft rule on SS proposes) yet in its final decision on SENE, the AEMC considered that the party better able to manage the risk should bear the risk. The MEU asks what is different between the two rules that the AEMC now considers that consumers should bear the risk?

The MEU acknowledges that the draft decision does recognise to some extent that some risk should pass to the VRE in that it does require the connecting generators to contribute to the cost of any SS provided by the TNSP, **but this liability accrues only if the VRE uses this SS**. There is no certainty that the VRE will use the SS provided by the TNSPs but there is certainty that consumers will pay for the SS capacity that is provided but not used.

When making its investment decision, each VRE developer can decide about its SS needs if it knows, in advance, whether it has to accommodate, within its project costs, the cost of the SS it will need, and how it might best address the need, based on the technology, location and size of the VRE proposed.

The MEU points out that an end user making its decision to develop its new facility will bear the cost of any SS needs (along with other network augmentations that the end user causes to be needed) resulting from its decision. There is no ex-ante decision made by the network (or AEMO) that all consumers should bear the cost of this locational decision of a new end user. Why is VRE treated differently?

The reason that, in the recent past, VRE has been impacted by a lack of SS when making their decisions, is that neither AEMO nor the TNSPs identified there was a problem of SS in the parts of the network that VRE was proposing to use for its connection. If AEMO and the TNSPs had forecast a shortage of SS when the VRE was looking to invest, the MEU is confident that VRE would have made different decisions, including implementing changes in their facilities as well as reviewing their locational decision, if they had known there was a problem.

So, to assume that to overcome the issue of SS there needs to be an ex-ante provision of “spare” SS, this is not necessarily a result of inability of VRE to find the lowest cost option for the need, but of a past failure by AEMO and TNSPs to identify there was even a problem that had to be addressed.

The impact of technology

The MEU points out that technology is changing at a rapid rate. It is only relatively recently that grid firming inverters have become available at only a small premium to the cost of grid following inverters used extensively in the NEM so far. This change provides VRE with the opportunity, at a fraction of the cost of providing network-based SS, to obviate the need for expensive and ex ante building of network-based SS assets. Essentially, this view is effectively discounted in the draft decision as it assumes that network-based solutions will be provided at a lower cost.

Further, the MEU understands that now, many existing VRE facilities with **grid following** inverters now have the ready ability to convert to **grid firming** inverters through a software change. The MEU understanding is that this is relatively new technology, but it highlights that solutions based on “old technology” (as the draft decision promotes by requiring ex ante network solutions) need to be treated with caution, especially if their implementation could result in stranded assets.

The MEU is very concerned that there has been insufficient investigation as to whether the availability of solutions for SS that VRE might be able to access as part of their development approach, and be so heavily discounted in the draft decision, when it is recognised that, by doing so, consumers will be exposed to considerable long-term costs, perhaps for little reason.

Impact on consumers

A key element of the draft decision favouring ex ante provision of SS is that this will minimise any delay in delivery of the new VRE output by delaying the delivery of lower cost generation. However, while this might be true for a relatively short time (such as 1-2 years of slightly lower prices⁴) this comes at a considerable long-term cost to current and future consumers. The MEU considers that a delay by implementing ex post solutions at the time of the VRE decisions, is a modest cost compared to the potential for significant long-term costs.

What is absent from the draft decision is any assessment of the value that such a short delay might cause compared to the considerable cost of the alternative. This lack of quantitative support for the assertion is concerning.

Further, if the VRE supplies its own solution for SS, there would be no delay at all for consumers in receiving the market price benefit of the new lower cost VRE.

⁴ Noting that the new VRE might only displace other low cost VRE anyway so the price impact would be quite small.

The need for greater transparency of the approach

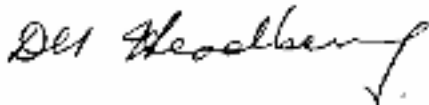
While opposing the draft decision for the reasons outlined above, the MEU notes that the draft decision is silent on any need to ensure there is adequate transparency in the development by AEMO of the SS needs or how the needs might be met. Nor is there any requirement on how the TNSP must assess the options for addressing any identified potential shortages of SS.

The MEU considers that, in light of the technology changes that are occurring, the processes for identifying the potential need by AEMO should also address how the SS might be provided in the lowest cost manner. The MEU sees that this element of the methodology should require AEMO to consult with potential VRE providers about the costs and timing that might be incurred if VRE were to use network-based SS rather than implement their own SS solution.

While it might be assumed that the TNSP would seek AER approval under the RIT-T process to implement the investment to manage the requirement to provide SS, there is no clarity on how the TNSP is to show how the costs for the provision will be allocated to the VRE that require the network provided SS. Further, in the light of the current and future technology changes that are occurring, how the TNSP is to implement the change to address the AEMO identified shortage.

The MEU is happy to discuss the issues further with you if needed or if you feel that any expansion on the above comments is necessary. If so, please contact the undersigned at davidheadberry@bigpond.com or 0417 397 056.

Yours faithfully



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