Friday, 26 September 2025

Kimberley Calow
AEMO

Sent via email to: contact.connections@aemo.com.au

**Grid-forming Technology Access Standards Approach Paper**

Dear Kimberley,

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia, representing nearly 1,000 of the leading businesses operating in renewable energy, energy storage, and renewable hydrogen. The CEC is committed to accelerating the decarbonisation of Australia's energy system as rapidly as possible while maintaining a secure and reliable supply of electricity for customers.

We welcome the opportunity to provide feedback to AEMO on the Grid-forming (GFM) Technology Access Standards Approach Paper (Approach Paper).

*Overview of our views and recommendations*

We generally support AEMO's objective to support the connection of grid-forming technology to the network, recognising their beneficial capabilities in supporting the power system. However, we are concerned that the Approach Paper is moving towards requiring prescriptive performance requirements for GFM inverters. These prescriptive requirements run the risk of constraining the ability of Original Equipment Manufacturers (OEMs) to innovate, creating barriers to technology advancements, discouraging competition and delaying projects during the GPS negotiation phase.

We recommend that AEMO consider using non-binding guidance to facilitate connections of GFM technology to the network, if needed, rather than technology specific prescriptive access standards.

*The need for GFM specific requirements*

We generally support AEMO's objective to support the connection of grid-forming technology to the network, recognising their beneficial capabilities in supporting the power system. We also acknowledge AEMO's efforts as part of the *Improving the NEM access standards rule change - Package 1* work which aimed to remove many of the impediments for connection of grid-forming inverters.

AEMO's *Voluntary Specification for Grid-forming Inverters* has adopted a high-level performance-based approach to identifying the key functions of GFM inverters. This approach is welcome in that it provides flexibility for OEMs to implement different GFM control logic which in turn promotes competition in the market.

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We are concerned, however, that the Approach Paper is moving towards requiring prescriptive performance requirements for GFM inverters. These prescriptive requirements run the risk of constraining the ability of OEMs to innovate, creating barriers to technology advancements, discouraging competition and delaying projects during the GPS negotiation phase.

It is unclear what additional value is added to the connection process or power system by having overly prescriptive requirements which apply only to GFM technology while no such requirements apply to grid-following inverters (GFL). Both GFM and GFL technologies have their merits, and we do not see a need to have GFM specific access standards given the downside risks mentioned in this submission. To the extent that the access standards provide flexibility to accommodate both GFM and GFL technology (which they do following the Package 1 work), we do not see a need to have additional requirements for GFM technology.

*Prescriptive requirements*

We caution against overly prescriptive or onerous NER based access standards which may have the unintended effect of:

- limiting innovation in respect of the beneficial capabilities of GFM technology to support the stability of the power system by providing essential system services such as system strength and inertia.
- hindering the connection of grid-forming inverters because of perceived investment risks associated with more prescriptive rules relating to this technology.

*Non-binding guidance*

If needed to facilitate the connections of GFM technology, AEMO should give consideration to whether non-binding guidance – rather than a technology specific prescriptive access standards – are more appropriate for GFM inverters which are a rapidly evolving technology. Non-binding guidance could be in a standalone document co-designed with industry and/or, at least in part, in the Automatic Access Standard Target (AAS) guidance being co-designed through industry through the Connection Reform Initiative (as discussed below). Non-binding guidance allows AEMO to easily update its guidance, if necessary, to take into account changes or improvements in technology.

*AAS guidance*

We consider that some of the observations in the Approach Paper could be adopted in the AAS guidance currently being codesigned with industry, perhaps in a separate section dealing with innovative technologies such as GFM BESS. The following observations in the Approach Paper could be included in the AAS guidance using GFM BESS as an example:

- future technical requirements should focus on the overall system response, noting that the highest possible response is not always desirable, particularly under weak grid conditions: see section 3.3.8 Approach Paper
- more specific technical observations such as the observations that ‘the balance between active and reactive current should be informed by system-level needs, rather than enforced through a fixed ratio’ in section 3.3.8 of the Approach Paper.

*Interactions with other workstreams*

We note that other aspects, such the GFM contribution to the “Minimum” or “Efficient” level of system strength, and certainty for GFM BESS to not be subject to system strength charges, are considered out of scope in the Approach Paper.

This is disappointing and we recommend that AEMO focus their efforts on these aspects as they have greater benefits to the power system in that:

- The current process is for System Strength Service Providers to procure synchronous condensers to meet the “Minimum Level” of system strength. By focussing efforts on demonstrating that GFM technology can provide this “Minimum Level” of system strength, we could directly reduce the investment in synchronous condensers and reduce overall costs to consumers.
- There is no certainty for proponents when it comes to GFM and self-remediation and the status quo requires numerous studies. Clarity and certainty for GFM BESS to provide system strength would provide a more efficient pathway to connecting projects and managing system strength risks (eg avoid extensive studies required under S5.2.5.15 and the System Strength Impact Assessment Guidelines).

**Response to AEMO Consultation Questions**

We have provided high level feedback to AEMO’s questions in the attached template.

The CEC welcomes further engagement with AEMO on the GFM Technology Access Standards Technical Requirements Review. Further queries can be directed to dstaats@cleanenergycouncil.org.au.

Kind regards

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