



INFORMATION

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Integrating energy storage systems into the NEM

The Australian Energy Market Commission has made a more preferable final rule that makes it easier for energy storage systems and hybrid facilities to register and participate in the national electricity market.

A future-focused framework for a changing market

As our electricity system transitions to a net zero system with very high proportions of variable renewable energy, energy storage is playing an increasingly important role in the national electricity market (NEM). The regulatory framework needs to facilitate this shift. The Australian Energy Market Commission (Commission or AEMC) has made a final determination and rule as a step to achieving this goal.

The Commission's final decision changes the rules to facilitate the future market where storage and hybrid systems e.g. a battery and a solar farm behind a single connection point, are likely to play a much bigger role in firming up renewable energy while ageing thermal generators continue to transition out of the market.

The Commission's final rule

The Commission's final rule makes a number of changes that better integrate storage into the NEM. These changes include:

- A new registration category, the Integrated Resource Provider (IRP), that allows storage and hybrids to register and participate in a single registration category rather than under two different categories.
- Clarity for the scheduling obligations that apply to different configurations of hybrid systems, including DC-coupled systems, so that operators of these systems have the flexibility to choose whether to be scheduled or semi-scheduled.
- Allowing hybrid systems to manage their own energy behind the connection point, subject to system security limitations.
- Clarifying that the current approach to performance standards that are set and measured at the connection point will apply to grid-scale storage units, including when part of a hybrid system.
- Transferring existing small generation aggregators to the new category, and enabling new aggregators of small generating units and/or storage units to register in this category. Aggregators registered in the IRP category will be able to provide market ancillary services from generation and load.
- Amending the framework to recover non-energy costs based on a participant's consumed and sent out energy over relevant intervals, irrespective of the participant category.

The final rule maintains the existing framework for network charges

The Commission's final decision maintains the existing framework to allow transmission-connected storage to choose between connecting under a negotiated agreement at a negotiated price, or the prescribed service and corresponding prescribed transmission use of system (TUOS) charge. It is important to note that the Commission does not consider that storage should automatically pay network charges, including the prescribed TUOS charge.

New transmission-connected storage participants will be able to negotiate arrangements with Transmission Network Service Providers (TNSPs) in the same way existing storage participants have. Importantly under the rule, TNSPs are required to negotiate price and

service levels that are consistent with those that have been negotiated for other transmission customers receiving the same service. In the case of storage participants, this could be zero.

While the final rule shifts current participants into the IRP category, this will not change existing connection agreements, including network services and network charging arrangements. The Commission understands that many storage proponents have negotiated very low or zero network charges with their TNSP, and does not consider any changes made in this rule change should alter those agreed charges.

New storage participants who choose to connect to the distribution network will receive a direct control service tariff or a storage tariff trial option, where offered.

Further work is needed to investigate network charging issues

The Commission notes that the existing rules relating to prescribed transmission service tariffs were not designed for loads like storage that can respond to dynamic price signals and can be controlled to minimise their impact on, or indeed reduce, network congestion. While the existing negotiated services framework can accommodate these types of loads without imposing prescribed TUOS charges, there are broader issues that would need to be considered in relation to TUOS. This rule change is not the appropriate avenue to address these substantial and complex issues.

Further work is needed on how network prices are set for storage and other large flexible loads (e.g. hydrogen) to provide them with efficient operational and investment incentives to support the energy market as it transitions to more renewables. The Commission anticipates a separate rule change request from interested participants to allow it to consider these issues in more depth. The Commission will prioritise any such rule change request in the 2022-23 financial year.

Costs and benefits

The Commission notes the final rule will require changes to a number of AEMO systems, procedures and processes. The Commission considers that, over time, the extensive benefits of the final decision are likely to far outweigh the costs of the reforms and therefore the final determination promotes the National Electricity Objective.

The Commission notes the final rule implements enduring changes which will align with future changes that fall out of the ESB work. It avoids making modifications to existing categories that would not necessarily be materially cheaper or realise the benefits of a simple and clear framework created through the IRP.

Implementation

The majority of changes made by the final rule will come into effect on 3 June 2024. There are two changes that will come in earlier on 31 March 2023, which are allowing:

- aggregators of small generating and storage units to provide ancillary services
- hybrid systems to use aggregated dispatch conformance.

While the IRP category will not be available until June 2024, participants will still be able to register hybrid systems in the existing categories, for example as generators and market customers, and classify their units under the existing framework.

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