

Clarifying registration for non-generating units providing system security services

The Commission has commenced a rule change on clarifying registration for non-generating units providing system security services

The National Electricity Market (NEM) is decarbonising. Fossil-fuel-based synchronous generators, such as coal-fired power plants, are gradually exiting the market, and being primarily replaced by inverter-based renewable generators and batteries. The changing nature of the generation mix in the NEM means that we are needing to find new ways of maintaining system security.

Synchronous condensers are one type of technology that can help provide system security services in the NEM, alongside others. While new synchronous condensers can be installed, retired thermal generators can also be converted into synchronous condensers. This occurs by retaining the generating system's alternator and electrical connection components while removing active power generation elements such as the boiler, turbine, and auxiliary plant systems.

CS Energy considers that converting retiring synchronous generators to standalone synchronous condensers is a potentially more cost-effective way of providing security services than investing in new synchronous condensers. This is because reusing existing assets, such as the voltage and reactive power control systems, cooling and lubrication systems and electrical assets at the point of connection, increases the speed of deployment and lowers the overall investment required relative to new synchronous condensers.

CS Energy has identified what it considers to be a barrier in the existing national electricity rules (NER) that affects the conversion of synchronous generators into standalone synchronous condensers after generating system retirement. Once retired, a synchronous generator is declassified as a scheduled generating unit, but CS Energy considers the NER lacks an alternative registration category to register a standalone synchronous condenser.

CS Energy considers that this may preclude a standalone synchronous condenser from providing system security services under the NER system strength and inertia frameworks, which require non-network services to be provided by a Registered Participant.

CS Energy proposes a new registration category

To address this, CS Energy has submitted a rule change request for a new participant registration category, "non-generating system service provider," to be added to Chapter 2 (Registered Participants and Registration) of the NER.

CS Energy intends for its non-generating system service provider registration category to allow standalone synchronous condensers and other non-generating units providing system services to be appropriately registered as NEM participants, enabling them to provide inertia and system strength services under the relevant frameworks.

CS Energy considers that its proposal will promote the national electricity objective (NEO) by improving power system security outcomes through more efficient use of existing resources to provide system security services, which will lower costs for all consumers in the long run.

The Commission seeks stakeholder feedback on applying the existing Integrated Resource Provider (IRP) registration category to standalone synchronous condensers

The Commission seeks stakeholder feedback on the following options for addressing the issues identified by CS Energy.

- **Option 1:** Implement CS Energy's proposal to establish a new participant registration category.
- **Options 2a and 2b:** Use the existing Integrated Resource Provider (IRP) registration category:
 - Without amendment, by providing clarification in the final determination on the application of the IRP category to stand-alone synchronous condensers with no accompanying final rule
 - With minimal amendments, to address any gaps in the NER and specify its application to stand-alone synchronous condensers.

The IRP registration category was implemented in the AEMC's integration of energy storage systems into the NEM rule change in 2021 to support a flexible, technology-neutral approach to registration.

Next steps

The Commission is currently seeking written submissions on its consultation paper. These submissions will inform the publication of a draft determination in early September 2025.

To make a submission, go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code ERC0402. **Submissions are due by 3 July 2025.**

For information contact:

Director, **Sebastien Henry** (02) 8296 7800

Principal Advisor, **Graham Mills** (02) 8296 7800

Media enquiries: media@aemc.gov.au

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