AEMC

INFORMATION

Calculation of system strength quantity

The Australian Energy Market Commission (Commission) has made a more preferable final rule to change the way the system strength quantity (SSQ) component of the system strength change is calculated. This will promote efficient provision of system strength as the power system transitions.

The Commission has made a final rule that changes the way the SSQ component of the system strength charge is calculated. Under the final rule, the SSQ will more accurately reflect the system strength impact of a new connection or alteration at a connection point, and will be broadly equivalent to the 'general system strength impact' that a connection applicant would otherwise need to remediate.

This final rule was made in response to a proposal submitted by the Australian Energy Market Operator (AEMO).

Our final rule promotes efficient investment in system strength

As the electricity sector decarbonises, significant investment in new generation is required. A substantial volume of this generation is forecast to be lower-cost, inverter-connected generation such as batteries, wind and solar. Connection of this generation will necessitate investment in system strength to ensure the secure operation of the power system.

Efficient decisions by connection applicants about whether to invest capital to self-remediate their plant's general system strength impact, or pay the system strength charge for centrally provided system strength services, will lead to lower-cost provision of system strength across the power system and better outcomes for electricity consumers.

Connection applicants need equivalent options to be able to make efficient decisions. Our final rule makes the two options available under the system strength framework - to remediate or pay the charge - broadly equivalent as they were originally intended. This will enable the efficiencies of the system strength framework to be realised.

The system strength framework provides two options for connection applicants to address their system strength impact

The system strength framework in the National Electricity Rules (NER or rules) requires a new or altered connection (typically a generator or large load) to mitigate its system strength impact through remediation (for example by installing a synchronous condenser or grid forming battery) or by paying a charge to a system strength service provider (SSSP), typically the local transmission network service provider (TNSP).

If the applicant chooses self-remediation, a full system strength impact assessment must be undertaken in accordance with AEMO's System strength impact assessment guidelines (SSIAG) to work out the system strength impact of the connection. If a connection applicant chooses to pay the system strength charge, the SSQ is used as the proxy for working out the system strength impact of the connection.

AEMO identified, during its public consultation process to develop the SSIAG, that the SSQ component of the system strength charge overstates the system strength impact of a connecting plant for applicants electing to pay the system strength charge. The two options were not equivalent, as originally intended, which may have resulted in the following outcomes:

- deterring connection applicants from paying the charge in favour of self-remediation
- reducing efficiencies from central procurement of system strength

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- resulting in unnecessary costs being passed onto consumers.

Our final rule requires AEMO to determine a methodology to calculate SSQ in consultation with stakeholders

The new rule addresses the issues raised by AEMO by changing the way SSQ is calculated for connection applicants electing to pay the system strength charge. Specifically, the final rule:

- removes the SSQ calculation from the Rules and replaces it with a requirement for AEMO to determine a methodology for calculating SSQ
- includes new policy principles in the Rules to guide AEMO's development of the SSQ methodology and provide a level of certainty for stakeholders
- clarifies the process of moving from an indicative to a final SSQ, noting that the final SSQ remains in place unless the connected plant is altered

The final rule triggers an update to AEMO's SSIAG in consultation with stakeholders. The updated SSIAG must be published by 30 June 2024 with the new arrangements commencing on **1 July 2024.**

AEMO previously published a guidance paper that outlines an approach to calculating the SSQ using a stability coefficient of 1.2 to account for the minimum stability level of system strength provided by NSPs.[1]

This aligns with the approach AEMO intends to consult on to update the SSIAG giving effect to this final rule, and may also support applicants in progressing their connection applications between now and 1 July 2024, when the final rule and updated SSIAG will take effect.

In addition, the final rule includes transitional provisions that provide details on how applicants at different stages of the connections process will transition to the new arrangements from 1 July 2024.

Stakeholder feedback informed the final rule

The new rule has been made using a fast-track rule-making process in recognition of the consultation already carried out by AEMO during the development of its SSIAG. The fast-track process allowed the AEMC to proceed directly to publishing a draft determination and draft rule on 30 November 2023.

We received 10 stakeholder submissions that were all broadly supportive of the approach taken in the draft rule. Some minor changes were made to the final rule to improve clarity and understanding in response to stakeholder comments.

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29 February 2024

1 AEMO, *Calculating system strength quantities in the NEM,* May 2023, available here