AEMC

INFORMATION

Primary frequency response rule changes

Consultation starts on three rule change requests

The AEMC is seeking stakeholder feedback on three rule change requests that relate to how electricity generators operate their equipment to help control the frequency in the power system.

Rule change requests

The AEMC has recently received three rule change requests that relate to how electricity generators operate their equipment to help control the frequency in the power system. Stable frequency is an important part of maintaining a secure power system. Frequency varies whenever electricity supply does not exactly match consumer demand and uncontrolled changes in frequency can cause blackouts.

Two of the rule change requests were submitted by AEMO, and the other by Dr Peter Sokolowski, a power systems academic from RMIT University.

The rule change requests propose a number of changes to the regulatory arrangements governing the control of power system frequency. The principal proposed change is to introduce a mandatory obligation for all registered generators in the National Electricity Market to help to control power system frequency during normal operation and following contingency events. Further proposed changes would see the removal of dis-incentives in the NER which may have caused generators to become less responsive to frequency over time.

Continuing work by AEMO and the AEMC to improve frequency control

Each of these rule change requests builds on previous work undertaken by AEMO and the AEMC. In particular, the AEMC's *Frequency control frameworks review*, which concluded in July 2018, and AEMO's *incident report into the Queensland and South Australia system separation event on 25 August 2018*, have both provided an important foundation for understanding and assessing the issues.

These reports found that, in recent years, the control of frequency in the power system has been deteriorating. This deterioration is mainly due to the detuning of the frequency responsiveness from existing synchronous generating plant. At the same time the increased connection of variable generating technologies makes the task of managing power system frequency following system disturbances more challenging.

The final report of the AEMC's *Frequency control frameworks review* highlighted several issues with the existing market and regulatory arrangements for frequency control, and included a collaborative work plan that set out a series of actions that would be progressed by the AEMC, AEMO and the AER to address issues related to frequency control in the NEM over the short, medium and long term.

AEMO's rule change requests are related to this work plan. In particular, the action that AEMO communicates whether there is a need to implement interim measures to address the deterioration in frequency performance before a longer-term mechanism for frequency control is implemented. AEMO considers that the decline in frequency performance has reached a point where there is now an immediate need for additional frequency response to restore effective frequency control in the NEM to maintain the safety, security and reliability of the power system.

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Submissions on the rule change requests close 31 October 2019.

Improving power system security as a priority

The Commission acknowledges the immediate need to improve frequency performance in the power system. These rule change requests provide an opportunity to improve power system security, which is one of the AEMC's five key priority areas for reform in the NEM.

In determining a solution, the Commission will seek to address system security first and foremost. When the fundamental system security needs are met, the Commission will develop a reform pathway to further improve the frequency control arrangements to increase the overall economic efficiency of frequency control in the NEM.

This approach is consistent with the frequency control work plan that was agreed as part of the *Frequency control frameworks review,* in which the Commission recommended the development of a mechanism to incentivise the provision of a sufficient quantity of PFR over the long term to support good frequency performance during normal operation.

Overview of the rule change requests

Dr Sokolowski — Primary frequency response requirement

On 30 May 2019, Dr. Peter Sokolowski submitted a rule change request seeking changes to the NER to improve power system security. This rule change request proposes that:

- scheduled and semi-scheduled generators be required to help control frequency outside of a narrow frequency response band close to 50Hz.
- a generator that changes its power output to help control system frequency is not a failing to comply with its dispatch instructions.

AEMO — Removal of disincentives to the provision of PFR

On 3 July 2019, AEMO submitted a rule change request seeking changes to the NER to address perceived disincentives to generators operating their plant in a frequency response mode during normal operation. The particular areas of focus relate to:

- the arrangements for the allocation of regulation service costs, known as 'causer pays'
- generators prioritising compliance with dispatch instructions over frequency response
- a perception that the NER requires generators to be frequency responsive only when they are enabled to provide a Frequency control ancillary service (FCAS).

AEMO — Mandatory primary frequency response

On 16 August 2019, AEMO submitted a rule change request seeking a change to the NER to require all capable scheduled and semi-scheduled generating units to help control frequency when outside a narrow frequency band close to 50Hz.

Consultation and Next Steps

Stakeholders submissions on the consultation paper are requested by **31 October 2019.**

Following receipt of stakeholder submissions to this consultation paper, the Commission will work to publish a draft rule and draft determination that addresses the immediate system security need in the earliest reasonable time frame.

The Commission aim to publish a draft determination that addresses the immediate security issues by December 2019 followed by a final rule determination in Q1 2020.

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