



# INFORMATION

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## Mandatory primary frequency response

### Draft determination for Mandatory primary frequency response published

**The Commission's draft rule introduces a mandatory obligation for all registered generators in the national electricity market(NEM) to help to control power system frequency. This draft rule will improve the operational security of the national electricity system for the benefit of consumers.**

### Addressing a need for improved power system security

Stable frequency is an important part of maintaining a secure power system. Frequency varies whenever electricity supply does not exactly match consumer demand. An extreme, uncontrolled change in frequency can cause significant disruption to the power system.

In its 2018 *Frequency control frameworks review*, the Commission concluded that frequency performance under normal operating conditions had been declining in recent times and that changes to the existing frameworks were required to support effective frequency control in the national electricity system.

Historically in the NEM, only synchronous generators, such as coal, gas and hydro, have provided primary frequency response. However, asynchronous generators such as wind, batteries and solar PV, can also provide primary frequency response. As these technologies form an increasingly large proportion of the supply mix, it is important that any primary frequency response arrangements consider the capabilities and performance of these newer technologies adequately.

Earlier in 2019, two rule change requests were submitted from AEMO and Dr. Peter Sokolowski respectively. Both of the proponents, identified in their rule change requests that the reduction in primary frequency response by generators in the NEM makes it more difficult for AEMO to maintain the power system in a secure operating state and reduces the system resilience to disturbances.

### Overview of the draft determination and rule

The Commission considers that a rule that introduces a mandatory requirement for generators to activate an existing capability to provide primary frequency response is likely to address the immediate need identified by the proponents for improved frequency control in the NEM.

However, the Commission recognises that a mandatory requirement for narrow band primary frequency response is not a complete solution and, on its own, will not incentivise the provision of primary frequency response. Further work needs to be done to understand the power system requirements for maintaining good frequency control. This work should also consider the appropriateness of the mandatory requirement for narrow band primary frequency response and other alternative and complementary measures, including the potential for new market and incentive-based mechanisms for frequency control.

Therefore, the draft rule includes a sunset on the mandatory primary frequency response requirement three years in the future on 4 June 2023. The inclusion of the sunset demonstrates the Commission's commitment to the implementation of further reforms prior to June 2023 to appropriately value and reward the provision of frequency control services.

The key aspects of the draft rule in addition to those set out above are:

- All scheduled and semi-scheduled generators, who have received a dispatch instruction to generate to a volume greater than 0 MW, must operate their plant in accordance with the performance parameters set out in AEMO's Primary frequency response requirements (PFRR).
- AEMO must consult on and publish the PFRR, which will specify the required performance criteria for generator frequency response, which may vary by plant type.
- The PFRR cannot require a generator to maintain additional stored energy for the purpose of providing primary frequency response.
- Generators may request, and AEMO may approve, variations or exemptions to the PFRR for individual generating plant.
- AEMO must consult on and publish an interim PFRR prior to 4 June 2020, following which the requirement for mandatory primary frequency response would begin. The interim PFRR will document the process for coordinating changes to generation plant and the date(s) by which each generator must comply.

### A work plan to improve incentives for frequency control

Given that the Commission is committed to further reforms in relation to frequency control, the draft determination includes an updated draft frequency control work plan developed in collaboration with AEMO. The work plan sets out a pathway for the development of future arrangements to appropriately incentivise and reward frequency control in the NEM. The AEMC will continue to work with the ESB, AEMO and the AER on these matters.

The development of incentive arrangements for frequency responsiveness during normal operation will also be considered through the assessment of AEMO's remaining rule change request, *Removal of disincentives to primary frequency response*. The Commission has extended the time frame for the publication of a draft determination with respect to this rule change request until 24 September 2020. This will allow for further consideration and development of incentive arrangements under the National Electricity Rules for frequency response during normal operation.

### The rule change requests

The AEMC has received three rule change requests that relate to how electricity generators operate their equipment to help control the frequency in the power system.

The Commission has made a draft determination with respect to two of these rule change requests, each of which proposed to introduce a mandatory primary frequency response requirement: one submitted by AEMO; the other submitted by Dr. Peter Sokolowski.

As the scope of these two rule change requests cover similar and related matters, the Commission has determined to consolidate these rule change requests and publish a single draft determination and draft rule under ERC0274 — *Mandatory primary frequency response*.

### Consultation

The Commission invites submissions on this draft rule determination, including the more preferable draft rule, by 13 February 2019.

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19 December 2019