

Clarifying mandatory PFR obligations for bidirectional plant

The Commission has made a final determination and a more preferable final rule (hereafter ‘final rule’) to clarify the obligations of bidirectional plant to provide mandatory PFR

The Commission has decided to make a final rule clarifying the mandatory PFR obligations of scheduled bidirectional units (i.e. batteries with a capacity of 5MW or greater) in response to a rule change request received from the Australian Energy Market Operator (AEMO). Under the final rule, batteries will have to provide primary frequency response (PFR) when they are exporting or importing energy, including when enabled to provide a regulation service. They will not have to provide PFR when solely providing contingency services or at rest.

The final rule seeks to promote the long-term, consistent, and predictable provision of PFR by balancing security benefits and any incremental costs incurred by battery operators. The widespread provision of PFR will continue to play a key role in maintaining system security as the generation mix continues to decarbonise.

The final rule clarifies the mandatory PFR obligations of batteries when discharging, charging and enabled for market ancillary services

The final rule is unchanged from the draft rule. As illustrated in the figure below, the core elements of the final rule align with those in the draft rule, and require scheduled bidirectional units (BDUs) to provide PFR when:

- they receive a dispatch instruction to generate a volume greater than zero MW — commencing 3 June 2024
- they receive a dispatch instruction to charge at a volume greater than zero MW (except when solely powering auxiliary loads) — commencing 8 June 2025
- they receive a dispatch instruction to provide a regulation service — commencing 8 June 2025.

Under the final rule, scheduled BDUs will **not** be required to provide PFR when at rest and enabled solely for contingency frequency control ancillary services (FCAS). The Commission notes that a scheduled BDU may be technically capable of providing continuous narrow-band PFR when at rest and may choose to do so. **The final rule is not intended to preclude or restrict the provision of PFR in this case.**

Operating state	Mandatory PFR obligations for scheduled bidirectional units
Dispatched generating state	Required to adhere to the PFRR ✓
Dispatched charging state	Required to adhere to the PFRR (except when solely charging auxiliary loads) ✓
When enabled for regulation FCAS	Required to adhere to the PFRR ✓
When enabled for contingency FCAS	Not required to adhere to the PFRR (voluntary provision incentivised by frequency performance payments) ✗
When at rest (not dispatched to consume, generate or enabled for FCAS)	Not required to adhere to the PFRR (voluntary provision incentivised by frequency performance payments) ✗

Note: The obligations on scheduled bidirectional units when discharging, charging, and enabled for regulation FCAS commence on 3 June 2024, 8 June 2025, and 8 June 2025 respectively.

The changes will not apply to pumped hydro storage given that they will not be classified as bidirectional units under the integrating energy storage systems (IESS) rule as they are incapable of linearly moving from one mode of operation to another (charging to discharging or vice versa). Under the final IESS rule, these units will be classified as a

scheduled generating unit and a scheduled load.

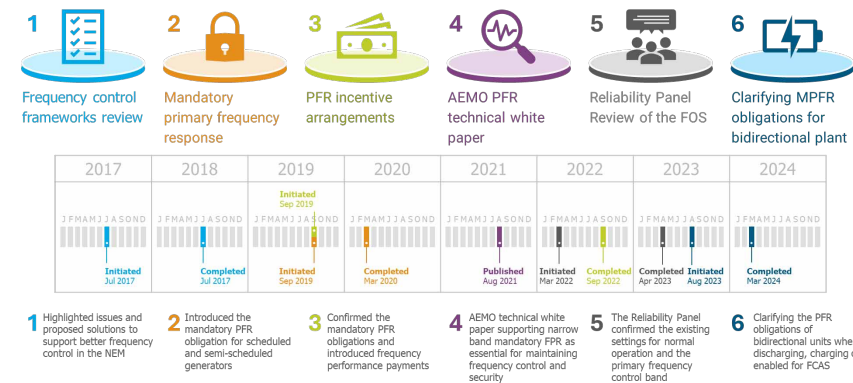
The final rule includes several incremental changes that seek to build on the existing mandatory PFR and PFR incentive frameworks

The final rule also includes several minor changes (consistent with the draft rule) that will improve the effectiveness of the existing frequency control frameworks and promote long-term, predictable and consistent PFR provision, including:

- clarifying that scheduled bidirectional units will not need to renegotiate their connection agreement when revising PFR settings in accordance with the PFRR
- enabling AEMO to request that affected plant transmit the status of their frequency controller through existing communications equipment to improve AEMO's operational awareness of the frequency responsiveness of the system
- clarifying that semi-scheduled generators and scheduled bidirectional units may not change frequency control settings without the prior approval of AEMO.

The final rule builds on work by the Commission and the Reliability Panel

This rule change builds on previous work establishing enduring arrangements for the long-term provision of PFR (see figure below). In particular, this proposal follows on from the Primary frequency response incentive arrangements rule 2022 that introduced frequency performance payments (commencing in June 2025) and confirmed the mandatory PFR obligations for scheduled and semi-scheduled generators.



Stakeholder views informed the Commission's final determination

We obtained and considered wide-ranging stakeholder views via written submissions to a consultation paper, submissions to the draft determination, by direct engagement in bilateral and multilateral discussions, and with our technical working group.

Stakeholder submissions reinforced the Commission's concerns that the prolonged consideration of the mandatory PFR obligations at this time could act to increase the overall perceived financial risk faced by potential investors in power system plant. As such, the Commission has sought to quickly, transparently, and effectively progress this rule change project to provide certainty for investors and minimise inherent regulatory risk given the important role that batteries are likely to play in the future power system.

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7 March 2024