

31 August 2023

Ms Anna Collyer
Ms Clare Savage
Mr Daniel Westerman

Energy Security Board
PO Box A2449
SYDNEY SOUTH NSW 1235

Lodged electronically: info@esb.org.au

Dear Board Members

Clarifying Mandatory Primary Frequency Response for Bidirectional Plant - Consultation Paper

EnergyAustralia (EA) is one of Australia's largest energy companies with around 2.4million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. We own, contract, and operate a diversified energy generation portfolio spanning coal, gas, battery storage, demand response, solar, and wind assets. Combined, these assets comprise over 5GW of generation capacity.

EA welcomes the opportunity to comment on the AEMC's consultation paper which seeks to clarify the mandatory primary frequency response (PFR) requirements with respect to the new Bidirectional Unit (BDU) classification from June 2024. We understand that per the proposal from AEMO, batteries would be obligated to provide mandatory PFR when discharging, charging and when enabled to provide any market ancillary service at 0MW energy target.

EA agrees that ensuring sufficient and stable PFR (and broader system stability) is critical to the NEM's energy transformation. As the existing thermal fleet and traditional providers of system services retire, it will become increasingly important that these services are provided by new, clean technologies and a wider set of market participants.

However, contrary to AEMO's views, EA strongly believes that the ongoing PFR requirement (and other system services) are best delivered through voluntary markets. These markets will provide clear investment and operational signals to developers of new generation technologies, including batteries, to build up capability to provide these services and decide for themselves whether the benefits of participation outweigh its costs. Although, the mandatory PFR arrangement and the soon-to-be-introduced incentive payments arrangement¹ appear complementary policy, we remain sceptical on its success as a cost-efficient model to drive innovation, broad participation and PFR security. Voluntary markets which value and procure essential services will arguably cast a wider net across the full range of viable participants, maintain the attractiveness to provide individual services, continue to drive the NEM towards a two-sided energy market and keep costs down.

¹ [Primary frequency response incentive arrangements | AEMC](#)



EnergyAustralia

LIGHT THE WAY

EnergyAustralia Pty Ltd
ABN 99 086 014 968

Level 19
Two Melbourne Quarter
697 Collins Street
Docklands Victoria 3008

Phone +61 3 8628 1000
Facsimile +61 3 8628 1050

enq@energyaustralia.com.au
energyaustralia.com.au

EA has provided a response to the AEMC's questions below. Broadly speaking, we support the need to amend the NER to obligate BDUs to provide PFR when discharging, and tentatively for charging. However, we are very concerned with the proposal for BDUs to provide PFR when enabled for a market ancillary service.

Issue One: Provision of PFR when Discharging from Grid

Under current arrangements Battery Energy Storage Systems (BESS) registered as scheduled generators and scheduled loads, are required to provide PFR when discharging to provide MWs into the grid. With the introduction of the Integrated Energy Storage Systems rule in mid 2024, we acknowledge AEMO's concern that BESS as scheduled generators would no longer be obligated to provide PFR once updates to the registration framework are made.

Noting, that BESS already provide mandatory PFR when operating in a generation state, we do not see any issues in correcting the NER to continue the application of this obligation. As such, we do not object to the inclusion of scheduled BDUs in the PFR Requirement procedure when a battery is discharging.

Issue Two: Long-term Provision of PFR

As above, EA agrees that alternative providers of PFR will be necessary as the NEM moves towards operation with a high volume of renewable generation and storage. While mandatory PFR and the implementation of a incentives payment arrangement will be implemented, we encourage the AEMC to view this as an interim approach, with the aim of moving towards voluntary markets.

There is no doubt that energy storage, specifically batteries can provide a wide array of services. However, the forced application of one service over the other has a commercial/revenue and operating life impact and therefore may erode the overall value of new investments. EA considers a move towards voluntary markets will better encourage investment, innovation and a broad spectrum of valued services from batteries, including PFR.

Issue Three: Provision of PFR when Charging from Grid

Although EA understands the desire and rationale behind AEMO's proposal to expand the mandatory PFR provisions to scheduled BDU's consuming MWs from the grid, we only tentatively support this approach. We recognise the need for a wider suite of market providers, including potentially scheduled loads, to contribute to narrow band PFR to ensure that system security remains stable as the market transitions. However, extending mandatory PFR to BESS when they are consuming energy would significantly cut into the commercial operations of a battery which enable it to offer a broader array of market services (including other FCAS services), and may also unnecessarily erode value/asset life from a BESS². The provision of PFR would also require additional micro-cycling of the battery which would likely reduce the amount of cycling capability and potentially impact product warranties. The extent of these issues requires further exploration.

Additionally, we note that the AEMC previously considered this proposal as part of the request to mandate PFR and ruled against it. While there now appears qualitative merit in its application³ arising from a change in market circumstances, mandating PFR on

² Specifically, but not limited to, lithium technologies.

³ Because the approach to thermal plant closure is becoming clearer and additional security service providers will be necessary to replace retirements and support those remaining in market.

BESS when consuming does not align with the AEMC's principle of competitive neutrality and, more importantly, the long-term benefits that voluntary markets would provide to consumers.

Instead, as part of the AEMC's assessment, we encourage a fuller review of all demand-side participation, the volumes of PFR required (over multiple time horizons), impacts to other FCAS markets (in particularly contingency services) and consideration of the role that the incentives payment framework is intended to play. Noting that thermal plants are still in market and are significant providers of PFR, there should be no rush to make a decision on expanding mandatory PFR arrangements. Rather, this review would be better undertaken at least two years after the effective date of the incentives payment framework to enable the collection of sufficient supporting information on incentivised voluntary PFR provision and the need for further PFR delivery. Key to the review will be whether the incentives payment framework is delivering on its intended objective by appropriately valuing voluntary PFR services. A decision on extending mandatory PFR or moving to voluntary markets should be considered at this time too.

Lastly, we note that under the AEMC's Integrating Energy Storage Systems final determination⁴, Integrated Resource Providers (IRP)(and therefore BDUs) were not exempted from network use of system charges. Instead, the rule defined IRPs as a Transmission Customer for the purposes of Chapter 5 and 6A in relation to electricity consumption by a BDU. As such, the rule requires IRPs to seek a prescribed transmission service or negotiate a shared transmission service. If the AEMC also decided that BDU's should provide mandatory PFR when charging from the grid, this would unfairly expose energy storage to a double penalty in the form of additional costs and lost revenue. This will impact energy storage investment decisions and its interaction requires further consideration.

Issue Four: Provision of PFR when Enabled for a Market Ancillary Service

The proposal to apply PFR when enabled for any market ancillary service is markedly different to the previous direction set out in AEMO's final Primary Frequency Response Requirements procedure, published in May 2023⁵. Under this document the current requirement is to provide PFR on regulation FCAS only to the AGC setpoint, when not dispatched for energy in a trading interval. Further, while PFR may be provided where an instruction for regulation or contingency FCAS has been issued with no corresponding energy dispatch instruction, there is no explicit obligation. However, the rule change proposal seeks to apply the compulsory obligation on any battery when enabled for any market ancillary service. It highlights that AEMO is moving away from its own technical requirements, which were only finalised and published a few months ago without clear quantitative evidence. We therefore do not support this approach for the same reasons listed above under issue three.

In addition, we note that the obligation to keep reserves available for PFR provision while resting, will take away stored energy for use in contingency FCAS markets. While this can be partially controlled through carefully set droop settings, the overall cost impact (associated with lost revenue and possible operational costs) may mean that battery

⁴ [Integrating energy storage systems into the NEM - Final determination \(aemc.gov.au\)](https://www.aemc.gov.au/Integrating-energy-storage-systems-into-the-NEM-Final-determination); Appendix C

⁵ [AEMO | Primary Frequency Response Requirements](#)

operations need to adjust their FCAS offers upwards or remove their asset from the market. This could pose a wider security risk to the grid (or specific regions in the NEM).

We appreciate the AEMC exploring other avenues to secure sufficient levels of PFR to counter AEMO's proposal. EA is supportive of both options proposed by the AEMC as viable alternative methods in place of an expanded PFR obligation on batteries, although we note that the proposal for schedule lite requires a further detailed cost-benefit assessment. Implementation of voluntary and market-based approaches will best signal to market providers by placing a value on the delivery of essential services without creating incentives for inefficient behaviours or impacting the business case for future investments in the grid – these investments are critical to enable the transition, keep the grid stable, and deliver Australia's climate objectives at efficient costs for consumers.

If you would like to discuss this submission, please contact me on 0422 399 181 or Dan.Mascarenhas@energyaustralia.com.au.

Regards

Dan Mascarenhas
Regulatory Affairs Lead