
Iberdrola Australia submission to Primary Frequency Response Incentive Arrangements Directions Paper
Submitted to AEMC by website

1. Overview

Iberdrola Australia welcomes the opportunity to make a submission. Iberdrola Australia delivers reliable energy to customers through a portfolio of wind capacity across New South Wales, South Australia, Victoria, and Western Australia, including both vertical integrated assets and PPAs. Iberdrola Australia also owns and operates a portfolio of firming capacity, including open cycle gas turbines, dual fuel peaking capacity, and battery storage. Our development pipeline has projects at differing stages of development covering wind, solar and batteries. This broad portfolio of assets has allowed us to retail electricity to over 400 metered sites to some of Australia's most iconic large energy users.

Iberdrola Australia is part of the global Iberdrola group. With more than 120 years of history, Iberdrola is a global energy leader, the world's number-one producer of wind power, an operator of large-scale transmission and distribution assets in three continents making it one of the world's biggest electricity utilities by market capitalisation. The group supplies energy to almost 100 million people in dozens of countries, has a workforce of more than 37,000 employees and operates energy assets worth more than €123 billion.

We thank the AEMC for the opportunity to engage and provide feedback on the Primary Frequency Response Incentives Arrangements Directions Paper. We support the steps the AEMC has taken to ensure the design of the proposed incentive scheme was well tested and explored through further detailed quantitative analysis with IES. Iberdrola Australia submitted to the September 2021 Draft Determination, and we note that several of our key recommendations have been addressed by the AEMC:

- More clearly defining key parameters such as the "Regulation Requirement" RR;
- Recovering residual Regulation costs from a longer-term metric, rather than pro-rata with energy; and

- Introducing a new lever that will increase certainty that the incentive mechanism can deliver the required response as the system transitions.

The key points we raise in this submission are:

- We recommend the sunset clause on the mandatory PFR requirement remain in place to allow a review of the mandatory requirements after the incentive scheme is in place
- We recommend the regulation component to be included in the reference trajectory to provide clearer performance signals on regulation FCAS providers as well as ensure a self-consistent price signal for headroom
- We recommend the RCR be designed to include a “lever” to ensure a sufficient level of PFR is achieved particularly for the future energy system
- The AEMC clarify that resources with an energy dispatch target of zero are not required to provide mandatory PFR

2. Enduring Mandatory Primary Frequency Response

Iberdrola Australia expressed concerns in our previous submissions that the mandatory requirement on its own will not be effective in delivering the necessary frequency control in the future. Furthermore, it imposes a cost on all participants that will ultimately be borne by consumers, rather than establishing a two-sided market where the most efficient providers can be utilised to meet a standard. This is not consistent with the NEO.

As we noted previously, the majority of the thermal coal fleet will likely be closed before 2030 (consistent with the most likely scenario of the AEMO 2022 ISP). If the proposed incentive mechanism is sufficient to incentivise the required response, the mandatory requirement will not be needed. Conversely, if the incentives are not sufficient, the mandatory requirement can be reviewed to be kept in place.

Iberdrola Australia recommends that the sunset clause for mandatory PFR should remain but be revised out to 2025, to allow the AEMC time to revise the need for mPFR. Evidence presented to date on the need for mPFR from all units has been limited and the corrections in frequency distributions were achieved before the majority of capacity was enabled to provide the response, suggesting more costs have been incurred than necessary to gain the benefits.

3. Requirements and guiding principles related to the frequency contribution factors procedure

Iberdrola Australia view the changes to contribution factors reasonable and we look forward to engaging with AEMO further on the finer detail of their design. Contribution factors reflecting the contribution to the aggregate deviation in the frequency of the power system aligns with the goals of AEMO in maintaining a tighter distribution of frequency. The straightforward implementation of these factors to Dispatch Unit Identifier's (DUID's) rather than on a portfolio aggregation seems sensible (noting the

proposed scheme is double sided, with the offsetting across a portfolio still achieved through positive contribution factors and payments to those assets).

Frequency based system performance metrics

The calculation of the contribution factor will be based off a system performance metric – i.e., the desired behaviour of all units. While further design needs to be completed, the favoured system performance metric by the AEMC seems to be a 1:1 combination of the raw frequency measure and a smoothed frequency (for example, 35 second rolling average) rather than a proportionate (e.g., governor) response. Before reaching a final decision, we suggest the AEMC consider:

- Is this the “ideal” behaviour of all units? i.e., would the AEMC plan, in a perfect world, that all units would implement this locally in their control systems?
- Has AEMC quantified the costs that a unit would be exposed to if it only delivers proportionate response?
- How often are the integrated (smoothed) signal and the raw signal out of alignment?

Reference trajectory

Iberdrola Australia recommends that the regulation component be included in the reference trajectory. That is, the “target” trajectory for all units is the AGC signal from AEMO, rather than a linear trajectory.

Controllability

By excluding the regulation component in the reference trajectory, there would be a risk that the engineering and financial incentives for Regulation FCAS providers would not be aligned. Effectively, financial incentives would not be linked to a unit’s AGC signal, only to how well it follows the local performance metric (e.g., frequency, rolling average, etc.) At times of very high prices, this could create a material financial incentive to “ignore” AGC if it differs from the local metric. This could actually reduce AEMO’s ability to control the system, particularly at times of high prices (which may also correspond to times of higher system stress). Considering that deadbands were reportedly originally removed by generators due to noncompliance with regulation signals there is a risk this change will create the same issues.

If the AGC signal is included in the trajectory, this will instead *strengthen* (and clarify) performance obligations under the Regulation FCAS service. Units that can more accurately follow a specific target from AEMO will be financial rewarded, and AEMO will have more confidence in their control systems.

Appropriate headroom signal

The total incentive payments are intended to be the cost of maintaining headroom *multiplied* by the total headroom required, with each unit being paid (or paying) its share. We agree with this philosophical approach.

The Commission proposes that the Regulation price is an appropriate metric for the headroom as it reflects the opportunity cost of withholding capacity (headroom) or providing footroom. As referenced in the Directions Paper, Iberdrola Australia agrees with this approach¹.

The commentary in the Directions Paper on the advantage and disadvantages of including the regulation component in the reference trajectory was very informative and transparent about the AEMC's strategic intentions. However, if the regulation component is not included in the reference trajectory, Iberdrola Australia would argue that the linking of regulation service and frequency performance payments is an undesirable outcome for long term incentives for voluntary headroom.

As noted in the Directions Paper, excluding the Regulation signal from the trajectory means Regulation providers are paid again for the work done while enabled for Regulation service. This would reduce the availability cost of providing regulating services and put downward pressure on the market price signal for regulation FCAS². Yet, if the ex ante regulation price *decreases* because of this double payment to providers of regulation services, it will no longer accurately reflect the cost of providing headroom from *non*-regulation PFR providers. For example:

Raise Regulation price: \$30/MWh
Enabled Raise MW: 50MW
Utilisation of Raise Reg: 100%
Required Corrective Response (RCR): 100MW
Regulating component (AGC) *included* Settlement:
 $50 \times \$30 = \$1,500$ (ex ante payments only)
Regulating component (AGC) *excluded* Settlement:
 $(50 \times \$30) + (0.5 \times \$30 \times 100\text{MW}) = \$3,000$
FPP to the remaining PFR:
 $0.5 \times \$30 \times 100\text{MW} = \$1,500$

In this example, the regulation service provider was willing to offer in headroom for \$30/MWh if its target includes its AGC signal. Under the settlement arrangement where regulation component is excluded, they would be just as willing to offer in the same headroom for \$15/MWh, decreasing the regulation price just as competitive market should. If this happens, we now are valuing PFR at half the intended value:

¹ Directions Paper, AEMC 2022, page 35

² Directions Paper, AEMC 2022, Page 44

Raise Regulation price: \$15/MWh
Enabled raise MW: 50MW
Utilisation of raise reg: 100%
Required corrective response: 100MW
Regulating component excluded Settlement:
 $(50 \times \$15) + (0.5 \times \$15 \times 100\text{MW}) = \$1,500$
FPP to the remaining PFR:
 $0.5 \times \$15 \times 100\text{MW} = \750

The exclusion of the reg component distorts the original intent of using the regulation price. An alternative “cost of headroom” signal would be required; we do not have a ready alternative.

On this basis, while recognising the points raised by the AEMC, in our view the most appropriate approach is to adopt a more minimal change, and include AGC in the reference trajectory.

Handling of contingency events or large deviations

In the proposed real time settlements of frequency control for PFR and rFCAS, Iberdrola Australia is seeking more information on how the new procedures operate in contingency events. It would seem unreasonable and not the intent of the Incentive Arrangements or Causer pays to recover all the costs from one participant (i.e., the unit or load that trips), which would dominate the MW.Hz performance factor, in these periods.

4. Frequency performance payments transactions

The revised frequency performance payments formula is clear and easily understood. The further work that has been undertaken on these transactions provides useful scenarios and understanding of the key levers in incentivising PFR.

Iberdrola Australia would like to ensure that the *requirement for corrective response* (RCR) being used as a scaling factor can deliver the desired frequency distribution as defined by the frequency operating standard (FOS). For example, if the cost of reserving headroom for FCAS versus narrowband primary frequency response is different. In further development of RCR and how it will be defined, Iberdrola Australia recommends the consideration of “levers” to ensure the incentive is strong enough for AEMO to be confident they will get the needed response to maintain frequency control.

While we are supportive of this structure and the intent of the FPPs we are still concerned that a mechanism that procures and values footroom/headroom for primary frequency response may be a better long-term alternative. There is a risk the proposed incentive may not be strong enough to invest in and voluntarily provide the headroom needed.

5. Obligation on battery energy storage systems

There remains some ambiguity as to the obligation on batteries to deliver mPFR in periods where they are enabled for Contingency FCAS but have a zero energy target. The AEMC has previously advised that the intent of the Rule was to reflect Iberdrola's previous analysis that the cycling costs on a battery forced to continuously charge and discharge can be material. Other technologies may be affected by this.

It is critical that the AEMC clarify in their final determination that resources dispatched (in energy) to zero MW are not *required* to provide a narrow band PFR response.

6. Conclusions

We are keen to support the AEMC in delivering an effective incentive mechanism that will ensure effective frequency control under a rapidly evolving system.

We look forward to the opportunity to continue to engage with the AEMC. If you would like to discuss this submission, please contact me on tahlia.nolan@iberdrola.com.au or 0436 641 226.

Yours sincerely

Tahlia Nolan

Manager, Market Modelling and Policy