

Directions paper – Frequency control rule changes

STAKEHOLDER SUBMISSION TEMPLATE

The template below has been developed to enable stakeholders to provide their feedback on specific questions that the AEMC has identified in the directions paper for the frequency control rule changes.

The rule changes discussed in the frequency control directions paper are:

- AEMO – *Primary frequency response incentive arrangements* (ERC0263)
- Infigen Energy — *Fast frequency response market ancillary service* (ERC0296)

This template is designed to assist stakeholders provide valuable input on the questions the AEMC has identified in the directions paper. However, it is not meant to restrict any other issues that stakeholders would like to provide feedback on.

Given the breadth of issues discussed in the directions paper, it is not expected that all stakeholders respond to all the questions in this template. Rather, stakeholders are encouraged to answer any and all relevant questions.

SUBMITTER DETAILS

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CHAPTER 4 – FAST FREQUENCY RESPONSE MARKET ANCILLARY SERVICE

Question 1: Section 4.5.3 – PROBLEM DEFINITION AND REFORM OBJECTIVE — FFR RULE CHANGE

What are stakeholders’ views on the problem definition and reform objective for FFR as set out in section 4.5.3 of the directions paper?

Question 2: Section 4.7.1 – FFR PROCUREMENT

In relation to the discussion of potential procurement arrangements for FFR services in section 4.7.1 of the directions paper:

- What are stakeholders’ views on the pros and cons of establishing new FCAS market arrangements for FFR services versus revising the existing arrangements to incorporate FFR within the fast raise and fast lower services?
- Do stakeholders agree that the existing arrangements for contingency FCAS provide an appropriate model for FFR market arrangements?
- What are stakeholders’ views on how each of the proposed procurement arrangements for FFR would interact with the arrangements for the existing contingency services?
- Are there any aspects of the existing contingency FCAS arrangements that should be varied for procurement of FFR services?

We support option 1: new market ancillary services to procure FFR FCAS, on the basis that:

- it is a simpler approach than option 2 and thus is likely to be quicker to design and implement
- it utilises the existing contingency FCAS market framework, which is already well understood and applied by AEMO and market participants
- it better recognises that FFR is a discrete service with a discrete value and technical characteristics
- defining a separate service, and valuing it explicitly, will support investment in the types of technologies that will be needed to provide the quantity of FFR the system needs
- it is likely to support greater market transparency, which increases participants’ ability to predict market outcomes and make efficient decisions about market entry
- it leaves the other contingency markets untouched, thus supporting regulatory and investment certainty for participants in those markets.

We support the ability for participants in the new FFR market to also participate in all other contingency FCAS markets, as is currently the case.

Question 3: Section 4.7.2 – FFR PRICING ARRANGEMENTS

In relation to the discussion of potential pricing arrangements for FFR services in section 4.7.2 of the directions paper:

- What are stakeholders’ views on the pros and cons of maintaining the existing FCAS pricing arrangements for FFR services?

While supportive of option 1, we have not yet formed a view on whether differential pricing within the proposed new FFR markets has benefits.

Differential pricing based on performance multipliers would seem to give AEMO more flexibility to procure the speed of FFR it needs. However, it’s not clear whether this would provide any increased market benefit or operational efficiency beyond the additional flexibility that option 1 would provide. Further, any benefits would need to be traded off against the potential

<ul style="list-style-type: none"> • What are stakeholders' views on the potential pros and cons of incorporating performance-based multipliers into the pricing arrangements for FFR services? • Do stakeholders have any other comments or suggestions in relation to the pricing arrangements for FFR services? 	<p>administrative and operational complexity of such an arrangement, and the impact this complexity has on participants' incentive to enter those markets.</p> <p>Static performance multipliers would serve to put a higher value on providers that can respond faster. But, is this always what the system needs? To be truly efficient, the performance multipliers would need to be dynamic so that the price paid for particular "speeds" of FFR reflects their value to the system at the time. A dynamic approach could also consider other multipliers that reflect the needs of the system, e.g. location or scarcity.</p> <p>If the performance multipliers are intended to be static (i.e. a faster response is always better than a slower response), then it may be simpler to design the new FCAS markets to make sure you get that response when you need it, e.g. by making it a 1 second market, determining volumes based on the system need, defining the specific performance characteristics you want in the MASS, and allocating trigger set points to deliver the desired response.</p>
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Question 4: Section 4.7.3 – FFR COST ALLOCATION

<p>In relation to the discussion of arrangements for the allocation of costs associated with FFR services set out in section 4.7.3 of the directions paper:</p> <ul style="list-style-type: none"> • What are stakeholders' views on the arrangements for the allocation of costs for FFR services? • Would it be appropriate for the cost of FFR services to be allocated in a similar way to the existing arrangements for the allocation of contingency FCAS costs? 	<p>We support the cost of FFR services being allocated in a similar way to the existing arrangements for the allocation of contingency FCAS costs.</p>
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Question 5: Section 4.8 – ISSUES FOR CONSIDERATION - FFR

<p>Are stakeholders aware of any additional issues that the Commission should take into account in developing market ancillary service arrangements for FFR?</p>	<p>Infigen has proposed a response time of <2 seconds. Enel X supports a response time of 1 second or even 0.5 seconds. The faster the response, the more quickly any sudden changes in frequency can be arrested. This will become increasingly important as the level of inertia in the system reduces.</p> <p>Beyond that, we support the service specification being technology neutral to maximise the number of participants and then, as is currently the case, letting the market decide which facilities are enabled.</p>
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We note that AEMO is due to provide advice on FFR arrangements through its *FFR implementation options report*, and encourage the AEMC to make this report public as soon as it is available, rather than waiting to publish it alongside the draft determination.

Question 6: Section 4.8.1 – VALUATION OF INERTIAL RESPONSE

In relation to the potential arrangements for the valuation of inertial response described in section 4.8.1 of the directions paper:

- What are stakeholders’ views on the valuation of inertial response as part of the contingency services, including the proposed new FFR contingency services?
- What are stakeholders’ views on the current governance arrangements for contingency services; where the detailed service specification is determined by AEMO and documented in the MASS? (Is it appropriate for the NER to provide further guidance on how inertial response should be considered in the MASS?)

We agree that inertial response is not currently appropriately valued. Introducing a market for inertia, or otherwise valuing its response through the contingency services, would provide a price signal to encourage investment in and the ongoing provision of this service.

However, unlike introducing a market for FFR, which could readily fit within the existing framework, defining and developing a way to value inertia will be a complex task. For this reason, we support an FFR market being introduced first and the valuation of inertia considered in that context.

Any approach to valuing inertia must be technology neutral. Some proposals appear to focus on the provision of these services by synchronous generators. However, any new approach should provide signals for – and not pose a barrier to – the development of new technology in this space, including synthetic and virtual inertia.

Question 7: Section 4.8.2 – PRICE RESPONSIVE DEMAND FOR CONTINGENCY SERVICES

In relation to the discussion of arrangements for incorporating price responsiveness into the procurement of contingency services in the NEM set out in section 4.8.2:

- What are stakeholders’ views on the potential pros and cons associated with the implementation of a “demand curve” approach to procurement of FCAS?
- What are stakeholders’ views on the priority of such a change to the market frameworks?
- If such an approach was to be implemented, what are stakeholders’ views on the appropriate governance arrangements, including the potential oversight role for the AER?

There is some merit in the concept of a demand curve approach to procurement of FCAS to increase system resilience.

However, it would not be easy to design or apply. The trade-off between costs and benefits, and thus the slope of the demand curve, needs to be considered in detail. It will also be important to consider the interaction between the demand curve and the frequency set points for the extra reserve. The more FCAS you procure, the more resources are available to respond to a contingency event. It would make sense to change the distribution of frequency set points depending on how far down the demand curve you’re procuring, to make sure that the response delivered is commensurate to the size of the contingency.

We support further analysis here to determine whether a demand curve approach would provide additional benefits.

Question 8: Section 4.8.3 – INTERACTION BETWEEN MANDATORY PFR & FFR ARRANGEMENTS

<p>What are stakeholders' views in relation to the potential interactions between new FFR arrangements and the Mandatory PFR arrangement?</p>	
<p>Question 9: Section 4.8.4 – IMPLEMENTATION AND STAGING FOR FFR</p>	
<p>In relation to the discussion of the implementation arrangements for FFR services as set out in section 4.8.4:</p> <ul style="list-style-type: none"> • What are stakeholders' views in relation to the process for the implementation of FFR arrangements in the NEM? • What are stakeholders' views on the potential need for interim or transitional arrangements as part of the transition to spot market arrangements for FFR? 	<p>As noted above, the creation of two new very fast contingency services (as per option 1) should be relatively straightforward to implement. We suggest the AEMC and AEMO work towards an implementation timeframe of late 2021 / early 2022.</p> <p>We do not see a need for transitional arrangements here. As under the current arrangements, AEMO will have the ability to assess and validate the performance of FFR providers in accordance with the MASS and the FCAS verification tool, before they are approved to enter the market.</p>

CHAPTER 5 – PRIMARY FREQUENCY RESPONSE INCENTIVE ARRANGEMENTS

Question 10: Section 5.1.3 – THE ROLE OF MANDATORY PFR

<p>In relation to the discussion of the role for a mandatory obligation as part of the enduring PFR arrangements in the NEM, set out in section 5.1.3:</p> <ul style="list-style-type: none"> • Do stakeholders agree that a mandatory PFR arrangement provides a valuable safety net to help protect the power system from significant non-credible contingency events? • Do stakeholders agree that the narrow, moderate and wide settings for a mandatory PFR response band adequately represent the broad policy options for the frequency response band for Mandatory PFR? 	<p>We remain concerned that a continued requirement for mandatory PFR risks relying on baseload generators for the provision of frequency services, while reducing incentives for alternative technologies to participate in the FCAS markets.</p> <p>If not removed altogether, a loosening of the mandatory PFR obligations would be preferable to maintaining the status quo. However, two questions remain unanswered: how much mandatory PFR is necessary, and from whom? We maintain a preference for a market-based approach that appropriately values and compensates the providers of PFR, and incentivises participation by alternative providers as the generation mix changes.</p> <p>We also see merit in the enduring arrangement keeping a distinction between the two types of primary frequency control: during normal operation (PFR) and in response to contingency events (existing FCAS), as they are two different services.</p>
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Question 11: Section 5.4 – PROBLEM DEFINITION AND REFORM OBJECTIVE — PFR INCENTIVE ARRANGEMENTS RULE CHANGE

What are stakeholders' views on the problem definition and reform objectives for enduring PFR arrangements set out in section 5.4?

Question 12: Section 5.4.1 – ECONOMIC ANALYSIS OF MANDATORY PFR

In relation to the discussion of the costs and benefits of Mandatory PFR arrangements set out in section 5.4.1:

- What are stakeholders' views of the indicative curves for costs and benefits of Mandatory PFR with respect to the frequency response band settings, set out in figure 5.4?
- Do stakeholders agree that the frequency response band setting is a key variable for the determination of enduring PFR arrangements that meet the power system needs and are economically efficient over the long term?
- What are stakeholders' views on the effectiveness of the exemption framework under the Mandatory PFR arrangement?
- What are stakeholders' views on the role that the allowance for variable droop settings plays in relation to the cost impacts of Mandatory PFR?
- Based on the initial roll out of the Mandatory PFR arrangement to generators over 200MW, what are stakeholders' views on how the cost impacts of Mandatory PFR are impacted by the proportion of the fleet that is responsive to frequency variations?
- What other considerations are there in relation to developing effective and efficient arrangements for PFR in the NEM?

Question 13: Section 5.5 – ADVICE FOR ENDURING PFR ARRANGEMENTS

What are stakeholders' views of the Commission's proposed approach to obtaining advice to inform its determination of enduring arrangements for PFR in the NEM?

Question 14: Section 5.6.1 – PROCUREMENT ARRANGEMENTS FOR NARROW BAND PFR SERVICES

In relation to the discussion of potential procurement arrangements for narrow band PFR services in section 5.6.1:

- What are stakeholders' views on three options identified for further consideration?
 - a. Existing market ancillary service arrangements
 - b. New market ancillary service arrangements
 - c. New incentive-based arrangements for voluntary provision
- Are there any other options that would be preferable?

See response to question 10.

Question 15: Section 5.6.2 – PROCUREMENT ARRANGEMENTS FOR NARROW BAND PFR SERVICES

What are stakeholders' views on the arrangements for the pricing of PFR as described in section 5.6.2?

Question 16: Section 5.6.3 – ALLOCATION OF COSTS FOR NARROW BAND PFR

What are stakeholder's views on the allocation of costs for narrow band PFR services as described in section 5.6.3?

Do stakeholders agree that the any additional costs for narrow band PFR be allocated through the existing causer pays procedure for the allocation of regulation costs (or a revised version as described in section 5.9)?

Question 17: Section 5.7 – PATHWAYS FOR ENDURING PFR ARRANGEMENTS

In relation to the pathways for enduring PFR arrangements set out in section 5.7:

- What are stakeholders' views on the enduring PFR pathways?
- Do stakeholders agree with the Commission's preliminary preference for pathway two? (the widening of the PFCB and the introduction of market

arrangements for narrowband PFR)

Question 18: Section 5.8 – FUTURE REVIEW OF THE FOS

What are stakeholders' views of the Commission's proposed approach towards a future review of the FOS as part of the development of enduring PFR arrangements?

Question 19: Section 5.9 – REFORMS TO THE NER RELATING TO COST ALLOCATION FOR REGULATION SERVICES – CAUSER PAYS

In relation to the proposed reforms to the NER relating to the allocation of regulation costs, set out in section 5.9:

- What are stakeholders' views on the proposal to allocate regulation costs on the basis of performance against system frequency as opposed to Frequency indicator (FI)?
- What are stakeholders' views on the proposal to align the sample and application periods for determination of causer pays factors and shorten the application period to 5 minutes, in line with the NEM dispatch interval?
- What are stakeholders' views on the removal or shortening of the ten-day notice period for causer pays contribution factors?
- What are stakeholders' views on AEMO's proposal to pre-calculate seven sets of contribution factors including local contribution factors?
- What are stakeholders' views of AEMO proposal to include non-metered generation in the residual component for allocation of regulation costs?