4 November 2021

Mr Ben Hiron
Project Lead
Australian Energy Market Commission

Submitted via website: www.aemc.gov.au/contact-us/lodge-submission

Dear Mr Hiron

Primary frequency response incentive arrangements
(ERC0263)

Stanwell Corporation Limited (Stanwell) welcomes the opportunity to respond to the Australian Energy Market Commission's (the Commission) Primary Frequency Response incentive arrangements draft rule determination (draft determination).

This submission contains the views of Stanwell and should not be construed as being indicative or representative of Queensland Government policy.

Introduction

Stanwell is a major provider of electricity to Queensland, the National Electricity Market (NEM) and large energy users throughout Australia. While providing reliable and affordable energy for today, we are exploring new generation and storage technologies that will help reduce emissions while also ensuring Queensland's electricity supply remains secure and reliable. Stanwell's generating assets provide Non-Market Ancillary Services as well as Frequency Control Ancillary Services and were activated for narrow-band primary frequency response (PFR) as part of the first tranche of the roll out of mandatory PFR in late 2020.

As we have noted in previous submissions to the Commission and the Energy Security Board (ESB), Stanwell considers the essential system services workstream to be the most urgent activity arising from the ESB's work. It will have a critical impact on the transition to a greater supply of electricity from variable renewables and other non-synchronous sources to the market and is likely to influence the optimal design of solutions in other ESB workstreams. Therefore, Stanwell supports efforts to clearly define what these services are, plan for how they will be valued and procured, and identify the interactions between each service and other market reform initiatives underway or planned. In essence, identify what is of value to the grid, and appropriately value what is identified to ensure its continued provision.

Stanwell supports the findings of the Commission's Frequency Control Frameworks Review - that it is essential to ensure adequate and affordable PFR resources are available going forward. The provision of PFR should be based on a framework which creates clear and durable incentives for both current providers and investors in potential new sources as traditional providers exit the market over time. Unfortunately, Stanwell does not believe the solutions proposed in the draft determination achieve this.

Key issues

Stanwell's main concerns with the draft determination are:

- Retention of the mandatory arrangements for universal provision of PFR is observably inefficient;
- The retention of the "no headroom" arrangements are not likely to be robust in the medium term;
- Incentive for providing PFR is proposed to be provided indirectly through existing markets and allocates costs to "non-causers" of frequency deviations;
- The removal of the sunset provision contradicts the Commission's findings that a new mechanism will be required within a decade, at the latest;
- Circumvention of the Technical Working Group's (TWG) contribution, and effective delegation of detailed design of the incentive mechanism to AEMO in procedures, instead of being outlined in the National Electricity Rules; and
- The proposal for monitoring appears ineffective as it should include success criteria or what conditions would trigger further action.

Stanwell is particularly concerned that the draft determination removes the current sunset clause for the mandatory provision of PFR, yet does not present an enduring solution for the valuing and incentivisation for PFR in the future. The advice from GHD to the Commission[1] indicates that a further mechanism will be needed before the end of the decade to ensure appropriate levels of PFR are available. The draft determination should be more future focussed with work commencing on a new mechanism now, not waiting until such time that the provision of PFR becomes an issue again as traditional sources gradually exit the market.

Stanwell does not support the continuation of the mandatory PFR requirement beyond the timeframe required to develop and implement an enduring alternative solution for the valuing and incentivisation of PFR. We strongly recommend that the Commission delay the making of a final determination to allow more time to undertake detailed development of a durable, fit-for-purpose PFR procurement and compensation scheme in close consultation with the TWG, and undertake a further round of consultation with stakeholders. The Commission should be targeting implementation by 2025, consistent with the ESB's Post 2025 market reform pathway and timeframes. The sunset date for the mandatory provision of PFR could be extended to allow for implementation of the new scheme. Alternatively, the current sunset date of 4 June 2023 could be retained and AEMO could enter into bridging contracts with willing providers of PFR until the new scheme is implemented.

Stanwell understands that the existing Frequency Operating Standard (FOS) is considered to be insufficient to maintain "good control" of frequency in response to small deviations. We

[1] GHD, Enduring Primary Frequency Response, CT2 – Power system operation and strategic regulatory advice, 16 September 2021, p.58.

contend the FOS should be reviewed by the Reliability Panel as a first step to ensure it appropriately defines the required precision of frequency control within the normal operating frequency band. Stanwell note the Commission has recommended that the Reliability Panel undertake a review of the FOS in 2022[2], and Stanwell strongly supports this occurring as early as practicable.

Retention of mandatory arrangements is observably inefficient

Stanwell maintains[3,4] that mandatory universal provision of narrow-band PFR is neither necessary nor sufficient for the appropriate control of frequency in the NEM, and so is inconsistent with the National Electricity Objective (NEO).

The NEM does not currently have universal provision as the roll out of the tranches continues, yet the energy system already appears to have sufficient frequency control. The GHD report[5] identifies that PFR "saturation" appears to have been reached around December 2020, with only a small portion of the fleet having been enabled and no clear indication of which units were providing headroom, or how much. The GHD report also identifies that as of June 2021 only 67 per cent of the fleet was enabled for narrow-band PFR, while AEMO's Tasmanian trial[6] and overseas experience points to tight frequency control being achievable without PFR provision from all generators.

In light of the staged implementation of the PFR over the last year, AEMO should now have a significant dataset that it can use to identify the efficient levels of PFR required by the system. This information should be used inform the development of a long-term market signal for the provision of PFR (including headroom as discussed below) as originally envisaged by the Commission.

Further, the mandatory scheme undermines the provision of PFR services at an efficient cost. With the mandatory scheme there is no opportunity or incentive for market participants to procure the service they are required to provide from other lower cost sources, or invest in resources which can provide PFR more efficiently and cheaply than existing assets.

The continued use of high-cost resources where lower-cost resources are available provides no additional benefit and is inconsistent with the NEO.

---

[2] AEMC, Draft rule determination – PFR Incentive Arrangements, 16 September 2021, p.72.

[3] Stanwell Corporation Limited, Primary Frequency Control – Response to the AEMC Consultation Paper, October 2019.

[4] Stanwell Corporation Limited, 2020 Energy Security Board Post 2025 Market Design – Response to Consultation Paper, October 2020, p.18.

[5] GHD, Enduring Primary Frequency Response, CT2 – Power system operation and strategic regulatory advice, 16 September 2021 section 4.2

[6] Stanwell Corporation Limited, Submission to Interim Primary Frequency Response Requirements, 8 May 2020.

Retention of "no headroom" arrangements is not robust

The blunt nature of the mandatory scheme and absence of a requirement to maintain headroom does not provide certainty of maintaining appropriate frequency control in the medium to long term, as identified in the GHD report. Much of the PFR in the system currently relies on capability "repurposed" from other sources – for example energy stored for ramping or contingency FCAS response. This degrades the service provision of those other sources or requires additional energy to be created by consuming more fuel. The Commission and GHD have acknowledged that the natural headroom available now to provide PFR will decline as traditional sources exit despite the mandatory requirement as non-synchronous generators tend to operate at their maximum potential output[7].

GHD's advice to the Commission[8] indicated that, under the 2020 ESOO central case, a further mechanism would be developed before the end of this decade to ensure that an appropriate level of PFR is available. GHD also identify that a more rapid transition of the power system would bring this requirement forward, which should be considered likely given AEMO have indicated the actual system change is occurring faster than their most aggressive 2020 scenario – step change.

Stanwell consider that in light of the ESB Post 2025 market design process, even a 2030 requirement should be reflected in the current AEMC process, as time and money spent on an interim solution now will have little scope to be recouped. This is even more acute if the need is brought forward as current information indicates.

Indirect compensation dilutes incentives and inappropriately assigns costs to "non-causers"

There is insufficient detail provided on the proposed frequency performance incentive payments mechanism to allow stakeholders to properly assess how it would work under operational conditions, or its potential effectiveness. However, based on what little information that has been provided, Stanwell has a number of concerns with the proposed mechanism.

The Commission propose to incentivise suppliers to provide PFR headroom by providing revenue for good behaviour through a vaguely related existing market (i.e. regulation FCAS). However, the Commission then states that consumers will ultimately benefit as the existing regulation FCAS market will shrink over time as AEMO procure less of that service.

Our concerns with this aspect of the proposal are two-fold. Primarily, using one market to incentivise and compensate a different service is perpetuating issues in the current market design and should be avoided if at all possible. Second, if it works as described, the proposal creates a self-defeating cycle – high regulation FCAS procurement will mean participants will be incentivised to provide headroom which will decrease the amount of regulation FCAS used, and ultimately procured. This will then weaken the incentive to

[7] AEMO, Response to request for advice — Frequency control frameworks review, March 2018, p.8-9.

[8] GHD, Enduring Primary Frequency Response, CT2 – Power system operation and strategic regulatory advice, 16 September 2021, p.58.

provide headroom, resulting in more regulation FCAS having to be procured and used, restarting the cycle again.

This mechanism also means regulation FCAS would provide incentives for two different services with different intended outcomes. PFR is intended to slow frequency changes through fast response from suppliers to locally sensed signals. As a proportional response, it would slow and diminish the extent of the frequency change but is not intended to restore the frequency to pre-disturbance levels. However, regulation FCAS is intended to correct an imbalance in the system in response to remote centrally sensed and dispatched signals from AEMO. Sometimes those signals are intended to counteract or correct a frequency deviation, while at other times the signals are intended to create a frequency deviation to offset accumulated time error. The definitions of the services are different, the timeframes are different, and the volumes are different, so using one funding pool to value both services appears to be inappropriate.

In addition, the proposal to split the procured regulation FCAS volume into "used" and "unused" volumes and recover the costs differently is a large change to the current "causer pays" process. Currently both contingency and regulation FCAS is procured on a pre-contingent basis, basically as an insurance policy against frequency deviation. The volume of procurement is based on historically observed requirements, but usage is determined by real-time system conditions. The causer pays methodology then recovers the cost of procured regulation FCAS (whether used or not) through a mix of historical "causer" factors and real-time generation or consumption patterns.

The model in the draft determination proposes to only apply that methodology to the used component of procured volume of regulation FCAS and recover the unused component from all participants regardless of the current or historical quality of their target-following. This creates a perverse outcome whereby "causers" will pay less, and "non-causers" will pay more, unless all procured volume is used in a period.

Changing who pays the premium for an insurance policy based on how much is claimed against that policy is an unorthodox approach to economic regulation. It does not appear likely to create incentives that will benefit consumers in the long term in this instance.

The proposal to create an incentive for beneficial response (essentially headroom in addition to the mandatory capability) appears intended to counteract this for "causers" and "providers" but leaves participants who accurately meet their targets holding a cost. Depending on the usage of procured regulation FCAS the incentives for provision may or may not exceed the cost to an entity of reducing regulation usage.

Stanwell understand that the Commission has been discussing the potential for the value of PFR causer/corrector transfers to be tied to the energy price under the "double sided causer pays" proposal being funded by ARENA and the Australian Energy Council (AEC). While Stanwell's concern in relation to indirect compensation outlined above remains, Stanwell encourages the Commission to continue these discussions and engagement with the TWG to work through potential options. In addition, once a preferred mechanism is sufficiently developed the Commission should undertake a further round of public consultation to allow all stakeholders an opportunity to provide comment prior to a final determination being made.

Removal of sunset provision for mandatory PFR

The current sunset date of 4 June 2023 for the mandatory provision of PFR was to ensure a clear timeframe in which an enduring alternative design was to be developed. Each of the Commission's 2018 Frequency Control Frameworks Review, original mandatory PFR rule change, and GHD's advice in this rule change process identify that an enduring mechanism will be required. Stanwell contends that the draft determination does not provide such a solution. Stanwell consider that the Commission should retain the sunset provision until such an enduring arrangement is developed and implemented.

As noted earlier in this submission, Stanwell consider that the Commission should be targeting the implementation of a durable, fit-for-purpose arrangement for the provision of PFR by 2025.

Draft determination development concerns

The draft determination raises a number of concerns for Stanwell in relation to the role of the TWG and the level of detailed design participants can rely on when evaluating and implementing rule change proposals.

The Commission appear to have circumvented the TWG by presenting a draft determination which is fundamentally different to what Stanwell understands the Commission had discussed with that group. Stanwell had expected the Commission to present a draft based on "Pathway 2" from the December 2020 Directions Paper (i.e. revise the mandatory PFR arrangement by widening the frequency response band and develop new FCAS arrangements for the provision of PFR during normal operation), in line with what was discussed with the TWG prior to the draft determination. Instead, the draft determination is based on "Pathway 1" (maintain the existing mandatory PFR arrangement with improved PFR pricing) and includes a complex, partially defined incentive scheme not previously discussed.

It is also concerning that the Commission proposes to hand over the detailed development of the proposed incentive arrangement mechanism to AEMO, with only high-level parameters contained in the National Electricity Rules. Previous rule change processes have seen enough specification in the Rules that AEMO's procedure consultations relate only to fine-detail implementation issues rather than major design choices. This allows participants to evaluate the proposal and plan for its introduction rather than having to react to the outcome of later consultation processes. Stanwell believes the Commission should undertake further work on developing the details of this mechanism in consultation with the TWG and market participants prior to making a final determination and handing over the final procedure development to AEMO.

Monitoring proposal lacks clarity

The Commission propose a quarterly monitoring program “on levels of aggregate frequency responsiveness in the power system” “which will inform further consideration by the market bodies as to whether there is any need for changes to the nature of these arrangements in the future”.

It does not appear that such a monitoring program will provide timely indications of a need to change arrangements before frequency degradation occurs. During the implementation of PFR, the frequency responsiveness of the system improved rapidly (within approximately five weeks) as a small proportion of the existing generating fleet activated PFR. This can be seen in figure 5 of the GHD report (see below) which shows that by week 44, essentially all the improvement had been obtained.

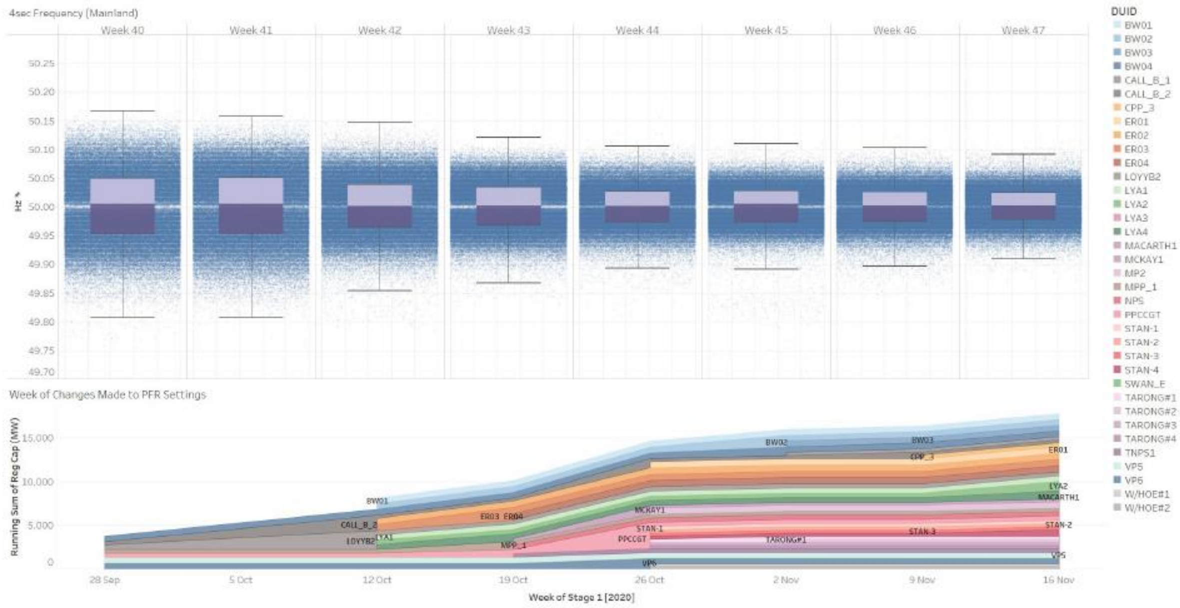

Figure 5 Mainland Frequency Changes as new Frequency Settings Implemented (Source: Greenview Strategic Consulting, 2021)

It is not clear how market bodies – sitting in the equivalent of week 44 – could know whether they are about to move to the equivalent of week 43 or the equivalent of week 42 given it is unknown how much incidental headroom was being supplied by each provider.

It is also not clear what the success criteria is, although AEMO have suggested a potential new FOS definition which could be used for this purpose. Stanwell contend that once a success criterion is identified, effort would be better spent evaluating the efficient level of PFR based on offers in known volume (including headroom) from known providers.

Conclusion

Stanwell appreciates the Commission's work on developing an enduring solution to the provision of PFR, however we are not supportive of the draft determination as presented.

Stanwell does not support the continuation of the mandatory PFR requirement beyond the timeframe required to implement an alternative and recommends that a second draft determination be published identifying a durable, fit-for-purpose PFR procurement and compensation scheme, and the timeframe required to implement the scheme.

It is Stanwell's view that there is insufficient detail and time provided to properly assess the proposed PFR incentive payment mechanism, but even the limited detail that is provided raises significant concerns about the operation and effectiveness of this mechanism. Stanwell strongly recommends that the Commission delay the making of a final determination to allow more time to undertake detailed development of a durable, fit-for-purpose PFR procurement and compensation scheme in close consultation with the TWG and undertake a further round of consultation with stakeholders.

If required as a result of that work, the sunset date for the mandatory provision of PFR could be extended to allow for implementation of the new scheme, or alternatively the existing sunset date could be retained and AEMO could enter into bridging contracts with willing providers of PFR until the new scheme is in place. Stanwell consider that the Commission should be targeting the implementation of a new enduring scheme by no later than 2025, consistent with the ESB's Post 2025 market reform pathway and timeframes.

Stanwell welcomes the opportunity to further discuss the matters outlined in this submission. Please contact Ian Chapman on (07) 3228 4139.

Yours sincerely

Ian Chapman
Manager Market Policy and Regulatory Strategy