

6 December 2022

Australian Energy Market Operator (AEMO)  
GPO Box 2008  
Melbourne VIC 3001  
[FPPconsultation@aemo.com.au](mailto:FPPconsultation@aemo.com.au)

## FREQUENCY CONTRIBUTION FACTORS PROCEDURE

Hydro Tasmania has actively contributed to a range of recent consultation processes related to power system frequency including most recently the primary frequency response (PFR) incentives arrangements process. Hydro Tasmania also voluntarily collaborated with AEMO to participate in the frequency control trials in 2018. As a continuation of these processes, Hydro Tasmania welcomes the opportunity to make a submission in response to AEMO's Frequency Contribution Factors Procedure (FCFP) consultation paper.

Through the FCFP, AEMO is proposing changes to the recovery of regulation FCAS costs. These changes are a result of the final determination of the primary frequency response incentives rule change in September 2022. The proposed new FCFP will come into effect when the primary frequency response incentive arrangements rule change commences on 8 June 2025.

Hydro Tasmania is broadly supportive of the proposed FCFP. However we raise the following concerns for AEMO's consideration.

### ***Requirement for Corrective Response (RCR)***

The RCR value is the volume in MW that machines contribute to correct frequency deviations in the system. **However, there appears to be some inconsistency in the proposed RCR methodology contained in the Consultation Paper**, as well a deviation from the AEMC's final rule change and IES' advice.

- Section 3.4.3 of the consultation paper notes that "the requirement for corrective response for raise and lower requirements is determined by the 'peak' of aggregate gross deviations in each direction". While Section 2.2.1(6) of the Consultation Paper notes that the RCR should be a "measure of the total MW volume that contributed to reducing the deviation in frequency of the power system".
- **Hydro Tasmania considers that performance of a generator should be the total (summed) MW dispatch occurring at each of the 4 second frequency recording intervals (as proposed in Section 2.2.1(6)), and not the peak MW produced to reduce the largest deviation (as proposed in Section 3.4.3).** The rationale for this position is discussed below:

- The practical outcome of applying the RCR definition outlined in Section 3.4.3 is considered in the following scenarios of two hypothetical dispatch intervals in which the total MWs dispatched to reduce frequency deviation are assumed to be equal:
  1. An interval where a number of “good” machines are consistently working hard across a period to stabilise frequency. In this case, assume that peak deviation from 50Hz is small, but a large number of deviations occur.
  2. An interval where less capable machines are unable to adequately respond to frequency deviation, resulting in a single large frequency deviation, requiring a “good” machine to pick up the slack.
- Under the methodology outlined in Section 3.4.3 (and assuming constant contribution factors for the “good” machine in both scenarios), a “good” generator in the second scenario would be compensated more than a “good” generator in the first scenario. This is despite the generators in scenario 1 working hard consistently throughout the DI to stabilise frequency. In contrast, by determining total MW volume, and not peak MW volume, we properly account for all of the work done by generators in stabilising the frequency and therefore more appropriately recognise a generator’s frequency contribution.
- **Hydro Tasmania therefore encourages AEMO to adopt the definition of RCR outlined in Section 2.2.1 consistently in the final FCFP as this would support better frequency management and be aligned with the AEMC’s final determination and consistent with IES’ advice.**

#### ***Calculation of regulation FCAS usage***

- AEMO proposes that regulation FCAS usage is defined as “the maximum (at any point during the trading interval) of the sum of positive deviations for all eligible units with appropriate metering that are enabled to provide the relevant service (capped at the level each unit is enabled)”. Similar to the issues outlined above in relation to RCR, the inclusion of ‘maximum’ rather than ‘total’ will lead to situations where the positive contribution from ‘good’ generators in reducing frequency deviations across a dispatch interval are not appropriately recognised.
- **Hydro Tasmania therefore encourages AEMO to reconsider the calculation of regulation FCAS usage to reflect the total of positive deviations rather than the maximum.**

If you have any queries on this submission or require further information please contact Prajit Parameswar ([Prajit.Parameswar@hydro.com.au](mailto:Prajit.Parameswar@hydro.com.au)).

Yours sincerely



John Cooper  
Manager Market Regulation