



15 March 2023

Australian Energy Market Operator

Submitted via email: FPPconsultation@aemo.com.au

Dear Sir/Madam

Submission: Frequency Contribution Factors Procedure

CS Energy welcomes the opportunity to provide a submission to the Australian Energy Market Operator's (**AEMO's**) consultation on the Initial Draft **Frequency Contribution Factors Procedure (FCFP)**.

About CS Energy

CS Energy is a proudly Queensland-owned and based energy company that provides power to some of our state's biggest industries and employers. We employ almost 500 people who live and work in the Queensland communities where we operate. CS Energy owns and operates the Kogan Creek and Callide B coal-fired power stations and has a 50% share in the Callide C station (which it also operates). CS Energy sells electricity into the National Electricity Market (**NEM**) from these power stations, as well as electricity generated by Gladstone Power Station for which CS Energy holds the trading rights.

CS Energy also provides retail electricity services to large commercial and industrial customers throughout Queensland and has a retail joint venture with Alinta Energy to support household and small business customers in South-East Queensland.

CS Energy is creating a more diverse portfolio of energy sources as we transition to a new energy future and is committed to supporting regional Queensland through the development of clean energy hubs at our existing power system sites as part of the Queensland Energy and Jobs Plan (**QEJP**).

Key views and feedback

The NEM is changing and will continue to do so as it transitions to a market with increasing Variable Renewable Energy (**VRE**) and an overall lower carbon footprint. This transition will bring changes in how the NEM is managed including frequency control. Maintaining the

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NEM system frequency control close to 50 Hz is a desirable operating attribute under normal operating conditions.

In its submission to the AEMC Mandatory Primary Frequency Response Draft Determination¹ CS Energy stated that it *'reiterates its view that it does not support a mandated approach and is disappointed in the delay in developing compensation mechanisms to incentivise participants in the provision of primary frequency control (PFC).'*

Prior to the AEMC making a final determination and a final rule to introduce new incentive arrangements² that will reward generation and load that help to control power system frequency, CS Energy began exploring the merits of a Double-Sided Causer Pay (**DSCP**) approach as a potential incentive arrangement. The proposal was championed to the industry and resulted in an ARENA sponsored project, Australian Energy Council Double-Sided Causer Pays study³ with CS Energy and Infigen Energy as the Project Partners. The project was a desktop study of DSCP as a long-term incentive mechanism to improve frequency control.

Key results⁴

This project undertook investigations into upgrading the system that promotes and pays for frequency control in the National Electricity Market (NEM).

Based on Frequency Deviation Pricing (FDP) concepts, the proposed system would complement and extend arrangements that mandate primary frequency control capability and reserve units for slower moving control. It would also replace the system for paying for regulation which has declined in effectiveness.

The arrangements examined and recommended by this project, if implemented, would reduce barriers to the entry of renewables by encouraging greater participation and competition in the provision of frequency control services.

The AEMO Initial Draft FCFP includes many of the key principles arising from the ARENA sponsored project. However, CS Energy has identified a few areas that would benefit from further consideration and are detailed below. This may require additional AEMO forums being scheduled to enable further input from industry participants to ensure the final solution is fit for purpose.

Frequency of the power system

CS Energy supports the AEMO proposal to move from a single power system frequency measurement source to multiple power system frequency measurement sources located throughout the NEM capturing both regions and potential separation event outcomes. This level of redundancy should ensure that in the event of a failure or isolation from the primary power system frequency measurement source, a fail over would occur to an alternate power system frequency measurement source.

CS Energy has concerns with AEMO's proposal to suspend frequency performance payments (FPP) for PFR providers when a separation event results in an electrical island that is not aligned with a regional boundary. Extended operation of an electrical island, such

¹ https://www.aemc.gov.au/sites/default/files/documents/rule_change_submission_-_erc0274_-_cs_energy_-_2020_02_20.pdf

² <https://www.aemc.gov.au/rule-changes/primary-frequency-response-incentive-arrangements>

³ <https://arena.gov.au/projects/australian-energy-council-double-sided-causer-pays-study/>

⁴ <https://arena.gov.au/projects/australian-energy-council-double-sided-causer-pays-study/>

as the Victoria and South Australia Separation Event on 31 January 2020⁵, would be prejudicial to stranded PFR providers.

Determination of frequency measure

CS Energy is supportive of AEMO's proposal to utilise an exponential weighted moving average (EMA) to determine the frequency measure. AEMO's proposal to incorporate a calculation dead band of 49,990 – 50.010 Hz may result in overlooking actual PFR supplied by providers that in effect is maintaining the power system frequency within the dead band.

Calculation of default contribution factors

To incentivise participants to understand and address poor default contribution outcomes, CS Energy does not support AEMO's proposal to continue using the twenty eight (28) averaging period for the calculation of the default contribution period. CS Energy would encourage AEMO to investigate viable alternatives to the twenty eight (28) period to provide timely feedback to PFR providers.

Application of default contribution factors

CS Energy has concerns with the AEMO proposal to apply default contribution factors in the event an electrical island does not align with a region boundary. The response to the *Frequency of the power system* above may remove the need for this proposal.

Calculation of requirement for corrective response

CS Energy has reservations on AEMO capping the requirement of corrective response (RCR) and how this impact on the final FPP. An alternative approach would be to have a deactivated RCR cap and in the event specified triggers were exceeded, the RCR cap would be invoked and the NEM advised of the outcome.

Delays in AEMO issuing and receipt of dispatch instructions

The delay in AEMO issuing dispatch instructions is a known outcome. The key concern is the resultant misalignment between scheduled plant output and any proposed trajectory that will be utilised to determine PFR performance. Any known and measurable delays should be incorporated into the trajectory being utilised to determine PFR performance.

Reference trajectory

CS Energy prefers the AEMO Automatic Generation Control (AGC) setpoint 'hand shake' to be the determinant of the reference trajectory. Any further developments on the reference trajectory should be suspended until the completion of the AEMO AGC forums scheduled

⁵ https://aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/power_system_incident_reports/2021/final-report-victoria-and-south-australia-separation-event.pdf?la=en

on 21 March 2023 to enable any feedback and learnings to be incorporated into the final design of the reference trajectory.

AEMO unable to calculate and publish contribution factors within a ‘reasonable’ timeframe

AEMO are encouraged to consider alternative proposals in the event AEMO is unable to calculate and publish the contribution factors within the specified period. The current proposal appears to be too drastic.

Recommendations

AEMO has conducted a series of robust, collaborative and constructive forums on this subject. However, several key issues require further analysis and examination to enable the delivery of an appropriate outcome favourable to all stakeholders.

If you would like to discuss this submission, please contact Henry Gorniak on 0418 380 432 or hgorniak@csenergy.com.au.

Yours sincerely



Signature

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