



Australian Energy Market Commission
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**Subject: Draft Rule Determination - NATIONAL ELECTRICITY AMENDMENT
(Fast Frequency Response Market Ancillary Service) Ref: ERC0296 22 April 2021**

Thank you for the opportunity to comment on the Draft Rule Determination regarding the Fast Frequency Response Market Ancillary Service published 22 April 2021.

This response is a joint response on behalf of both Rheem Australia Pty Ltd (RAPL) and Combined Energy Technologies Pty Ltd (CET), as we have a complementary interest in the AEMC's draft ruling. We hope that this response will help inform AEMC's development of the final rules for implementation of a Fast Frequency Response Market Ancillary Service.

Our views and recommendations outlined below relate specifically to our preferences and reasoning around the preferred implementation options¹ that are favourable to emergent control and orchestration of mixed DER sites, and importantly their participation in the Contingency FCAS markets.

As the largest Australian manufacturer of water heaters, Rheem markets a wide range of solar, heat pump, high efficiency gas and electric water heater models to the domestic water heating market. Our brands include Rheem, Solahart, Vulcan and Aquamax. Additionally, we are now the number three supplier of photo voltaic (PV) systems in the country via our Solahart channel. Over the last three years we have also commenced the manufacturing and installation of smart electric water heaters, controlled remotely by our technology partner, CET. Today Rheem has products in over 4 million Australian homes.

Combined Energy Technologies (CET) is an Australian technology company specialising in energy management for residential, commercial and micro grid systems. CET systems utilise a local Energy Management Gateway to provide secure communications and local orchestration of a wide range of DER devices and DER manufacturers. Local orchestration of DER devices is achieved through a suite of CET Energy Management modules that provide cost effective power metering, communication and control. CET has extensive experience in the integration and orchestration of systems with multiple DER devices including the

¹Draft Rule Determination - NATIONAL ELECTRICITY AMENDMENT 22 April 2021, Pg 32 Figure 4.1: Summary table — AEMO assessment of FFR implementation options



integration of solar PV, batteries, water heating, electric vehicle chargers, pool pumps and A/C for the benefit of the home owner, retailer and the grid.

Together, Rheem and CET are already actively participating in the emerging DER market with thousands of online, mixed, orchestrated DER sites (Solar PV, batteries, smart water heaters, HVAC, pool pumps, EV chargers, other loads) across the NEM and the WEM. Over the past 8 years we have identified and resolved many issues (at live field sites) around how mixed, smart DER sites can be orchestrated to achieve the best financial outcomes for consumers, whilst providing a foundation for grid support services such as Contingency FCAS.

This position has given us a unique insight into the development and potential for the emerging new energy market.

If the energy market is to be truly democratised, it is extremely important that any changes to market rules, introduction of new rules and services (such as a Fast Frequency Response Market Ancillary Service) and the associated technical specifications for participation in those grid services, are made with the consumer at the centre of the solution. This will ensure that current and future investment in smart DER by households continues to be made. Fundamental to this approach will be that new rules do not favour a particular technology, technology class, or technology manufacturer, and that technology neutrality is not impeded by barriers to entry in creating or modifying energy market rules.

Our specific comments in response to the draft ruling are underpinned by this approach. Our recommendations are supported by empirical data from an existing fleet of thousands of NEM consumer sites of mixed DER. The data from these sites support our technical and commercial conclusions which are in alignment with the principles of the National Electricity Objective (NEO).

In summary, we:

- Are in agreement with the position of a large number of stakeholders that new FFR arrangements should be prioritised, given that the level of synchronous inertia in the power system will continue to decline over coming years.
- Believe that no undue burdens should be placed on market participants in the introduction of the proposed new FFR service.
- Believe that any introduction of a new FFR service should not undo investment in technology for compliance with the existing MASS technical specification.
- Believe that the principles of technology neutrality of DER should be maintained in any specification, and any subsequent out of market arrangement, such that both generation and load assets can compete for services on an equal basis.
- Believe that the outcomes of the Market Ancillary Service Specification (MASS) Consultation should inform AEMC's development of the final rules for implementation of a Fast Frequency Response Market Ancillary Service as there is significant inter-dependence in the outcomes of the current MASS Consultation and this determination.
- Agree with AEMO's analysis² that Option 2b³ is the preferred solution, but only where any out of market procurement of new transitional FFR services are in

² Draft Rule Determination - NATIONAL ELECTRICITY AMENDMENT 22 April 2021, p.35

adherence with the points we have raised (in respect to participation and transparency) in our attached analysis.

- Believe that if out of market procurement for new FFR during a transitional period is a closed process, that Option 1⁴ should be adopted for the procurement of new FFR services.

Further support and reasoning for the above positions are included in this submission.

As this submission has been prepared using the expertise of a number of Rheem and CET personnel, I would ask that any enquiries related to the submission are directed in the first instance to myself. I will then co-ordinate follow up responses to your enquiries or further meetings, if required, with the appropriate personnel within our organisations.

Yours Sincerely

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³ Ibid, p.33

⁴ Ibid, p.32 Figure 4.1: Summary table — AEMO assessment of FFR implementation options

FFR Market Ancillary Service – Draft Determination 22April2021 Comments

Timing

We concur with rule change proponent Infigen’s comments⁵ that “it would be preferable to have FFR market arrangements operational sooner rather than later. Infigen noted that further delays in defining and procuring FFR will place the system at risk of not having the service when it is needed in future”.

Transitional Arrangements

We support the need for transitional arrangements. Based on the comments included in the determination, it would appear that the AEMC is in agreement with this proposal:

“Out of market arrangements should be considered as a transitional measure to help manage market implementation risks”⁶

“The use of out of market procurement as a transitional measure would allow the service specification to be more readily refined in advance of market implementation. Coupled with locational requirements, it would also help minimise the technical integration challenges and allow procedures to be developed to manage these challenges in the initial stages of the market”.⁷

“AEMO did note that a contracting approach to procure FFR may be appropriate as a possible first step, prior to the establishment of market arrangements for FFR”.⁸

As it is proposed that the “FFR market ancillary service arrangements commence 3 years from the date that the rule is made”⁹, but noting AEMC’s comment that “time-frames may be bought forward”, it would appear that there may be the possibility for AEMO to consider “out of market” contracting arrangements for procurement of FFR services.

If this approach to procurement of FFR services during the transitional period is indeed to be progressed, then we would strongly recommend:

- That any AEMO proposal for out of market arrangements to procure FFR services as a transitional arrangement should be transparent, open, and fair to all stakeholders, and notified well in advance to the market;
- That AEMO publish a detailed specification for any proposed out of market procurement of FFR services under a transitional arrangement, and the mechanism by which stakeholders can seek to provide services;
- That the principles of technology neutrality of DER are maintained in any specification and any subsequent out of market arrangement such that both generation and load assets can compete for services on an equal basis.

⁵ Draft Rule Determination - NATIONAL ELECTRICITY AMENDMENT 22 April p.54

⁶ Ibid, The Executive Summary, Clause 18, Point 2 p.iii

⁷ Ibid, Table 2.1 p.10

⁸ Ibid, p.54

⁹ Ibid, p.54

If AEMO's FFR implementation option 2 is adopted as the preferred approach to the introduction of new FFR contingency FCAS services, it is even more critical that any out of market procurement of new FFR services as a transitional arrangement are open, transparent and available to all stakeholders to participate. This approach to the procurement of out of market FFR services will enable stakeholders to understand and adjust their commercial models, and their approach to the offering of contingency FCAS services, prior to the full implementation.

If an open approach as detailed above to transitional procurement of new FFR services cannot be adopted, we would then support implementation option 1 i.e. "New market ancillary services to procure FFR FCAS". Our support for this option is based on recognition of the speed of response, and because it recognises and rewards existing FFR capacity within the FCAS Market.

This option also ensures existing investments in R&D, in technology, and in supporting systems, by current and imminent participants in Contingency FCAS services, are not adversely affected by a step change in access to a new FFR market that may only be open to selected stakeholders during a transitional period.

In summary

We support AEMO's Option 2b, but only where any out of market procurement of new transitional FFR services are in adherence with our points above, noting that AEMO states¹⁰:

- "that there are also likely to be registration impacts under option 1, although to a lesser degree and with a lower impact", AND;
- "AEMO noted that there would be material impacts on the registration of FCAS providers under option 2b"

Alternatively, if the out of market procurement for new FFR during a transitional period is a closed process, we would favour the implementation of Option 1, New market ancillary services to procure FFR FCAS, for the procurement of new FFR services.

¹⁰ Ibid, p.35