

3 June 2021

Attn: Ben Hiron
Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2001

RE: ERC0296 – Fast frequency response market ancillary service

Dear AEMC Team,

Fluence is a global energy storage technology solutions and services company, and a joint venture of the U.S.-headquartered AES Corporation and Germany-headquartered Siemens AG. Our solutions are built on the foundation of industry-leading technology platforms that are optimized for different application groupings, and Fluence leads the energy storage industry with over 2,700 MW of projects deployed or awarded in 24 countries and territories.

Fluence also offers a comprehensive services suite to ensure customers are staying ahead of the market. From early-stage feasibility and cost-benefit analysis that stand up in the real world, to ensuring optimal performance of storage assets, Fluence provides expert advice and services to propel customers' projects forward.

Fluence is an active supplier of Battery Energy Storage Systems (BESS) in the Australian market with our solution installed at the 30MW Ballarat facility. In addition, Fluence recently acquired AMS – the NEM's leading supplier of algorithmic bidding software for semi-scheduled renewable generators and scheduled BESS, with over 2,500 MW of capacity currently using Fluence's trading platform to facilitate bidding into the NEM.

BESS is one of several technologies in the NEM that can help improve system security via ultra-fast frequency response. Inertia above minimum levels will gradually fall over time, and so there is a compelling need to procure even faster ancillary services as to avoid inefficient costs to consumers.

Fluence supports the AEMC's Draft Determination and agrees that the implementation of a very fast contingency service is an appropriate and cost-effective option and that this will support system security in the future.

However, AEMC should progress a commencement date one year from the rule change determination, by mid-year 2022. We suggest that bringing the proposed implementation date forward would provide clearer price signals to investors and would help AEMO and the AEMC ensure system security services are made available in time for when they are critically needed. If the AEMC's Final Determination allows for an implementation period of three years, the AEMC may have set the bar too low.

Fluence would like to acknowledge and appreciate all the stakeholders including the rule change proponent, the AEMC, and AEMO for envisaging proposed solutions to tackle the challenge of reducing costs of ancillary services and improving system security in the NEM and for further providing Fluence an opportunity to contribute to the consultation process.

Relevant organization information and experience is enclosed in this submission along with Fluence's comments. We would be pleased to contribute further on any of the topics outlined, upon request.

Please direct any inquiries pertaining to the enclosed submission to me at my contact details below.

Sincerely
[Signed]

Lara Panjkov
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ORGANISATIONAL INFORMATION

	Response
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Registered Name	Fluence Energy Pty Ltd.
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RELEVANT EXPERIENCE IN AUSTRALIA

	Response
Project name	Ballarat Terminal BESS for AusNet Services
Location	Ballarat Terminal Station, Warrenheip, VIC, Australia
Project description	<p>Fluence's 13-year history of delivering and operating grid-scale energy storage technology solutions ensured that it was the partner of choice for AusNet Services, the owner and operator of Victoria's transmission network, leading energy retailer EnergyAustralia, and engineering, procurement and construction company Spotless/Downer in deploying an integrated battery storage solution to address certain issues facing Victoria's electricity grid. The project was a successful applicant for the Victorian Government's Energy Storage Initiative as well as grant funding from the Australian Renewable Energy Agency (ARENA).</p> <p>Fluence supplied a 30 MW/30 MWh Advancion BESS that was installed in the Ballarat Terminal Station. The BESS is owned by AusNet Services but is operated by EnergyAustralia, which uses it to provide a number of market and grid benefits, including:</p> <ul style="list-style-type: none">a) flexible peaking capacity to respond to periods of high load;b) frequency control ancillary services. <p>The layering of these services enables the BESS to deliver maximum value to the benefit of all customers in the region.</p>

	
<p>Commencement and completion</p>	<p><u>Commencement of installation:</u> January 2018</p> <p><u>Completion and commissioning:</u> December 2018</p>
<p>Partnership organisational structure</p>	<p>The Ballarat Terminal BESS project was delivered by a consortium comprised of Spotless (as EPC contractor), AusNet Services (as owner), EnergyAustralia (as operator) and Fluence (as energy storage technology supplier).</p> <p>The Ballarat Terminal BESS Project was commissioned by the Victorian Government and was partly funded by the Australian Renewable Energy Agency.</p>

Change is supported but faster implementation is necessary

Fluence supports the introduction of very fast contingency service markets and agrees that, as levels of inertia fall over time, doing so will be more cost effective than procuring increasingly large amounts of fast services. It will also assist the market operator to understand the extent to which a lower inertia system could be managed with services such as FFR resources, and will contribute to development of an inertia services market. Defining requirements based on service provision, rather than requirements based on asset classification or technology, is key to developing efficient and adaptive markets.

The proposed Option 1 - new market ancillary service for FFR would operate similarly to existing market arrangements. This option would incur minimal changes for market participants and therefore should be commenced as early as possible, even if procured volumes are low initially. Further, IT system and NEMDE changes could occur much more rapidly if they are prioritised by AEMO, as were the changes to facilitate PFR. Option 2 – reconfiguration of the existing FCAS arrangements to include FFR, is also supported, although some registration changes would be required.

An efficient market should not be delayed

A spot market for very fast FCAS will enable efficient pricing of services in real-time, which will decrease the costs borne by consumers. However, a three year implementation time frame will unduly delay the realisation of these cost savings. A spot market for very fast FCAS will also provide clear price signals to investors to incentivise new capacity, where needed. However, these price signals will only become apparent once AEMO has completed defining the technical specification for the services (18+ months away), and the market has commenced operation (36+ months away). It will be difficult for private sector investors to confidently assess the impacts of and opportunities presented by this rule change until these milestones are reached – so the sooner the new FFR market can start operating, the better investors will be able to understand the market’s need for the service and respond to the market’s price signals.

The very fast FCAS market should commence one year from the rule change date, in mid 2022. At a minimum, interim steps need to be reached quickly to help guide investors on the value of the service. With this, BESS projects can clarify their business cases therefore start supporting the grid sooner. Without this clarity, we risk developing projects that may be either under-utilised or over-built and could become stranded assets in the future.

Proactively preparing our system security framework, before it becomes critical

The AEMC states that the primary driver behind the rule change is to avoid inefficient costs of procuring greater quantities of fast contingency service, rather than an urgent need to shore up system security. However, at the current rate of asynchronous plant uptake, AEMO’s ISP Step Change scenario appears to be closer to reality than other scenarios, and so system security services may be required sooner than

anticipated. There may be benefits in AEMO implementing and understanding FFR contingency spot markets to adequately prepare for emerging system security issues, *before* the need becomes urgent and critical. The faster FFR markets can be implemented and understood, the faster other reforms such as an inertia services market can be implemented.

Avoiding unnecessary registration burden on participants

AEMO has stated that *“regional and unit based constraints on the dispatch of FFR may be required to manage the integration and ongoing use of FFR services”*¹ and that *“processes of a similar nature to (or even connected with) the approval of plant performance standards could be applied to assess integration issues before FCAS market registration”*². While additional technical studies or tests may be needed to register units for FFR contingency services, assessment for FFR market participation should not be linked to or a pre-requisite for obtaining the grid connection approval. The market services an asset elects to register with AEMO to provide is a commercial decision for the market participant, and it would not be appropriate to require an asset to provide specific market services as a precondition for connecting to the network. This may risk deterring investment until it is clear that an asset can participate in FFR.

Where *“large locational concentrations of FFR”*³ are deemed to pose challenges to system security, these issues should be dealt with through the application of constraint formulas (i.e. AEMO limiting the locational enablement of FFR as needed), rather than in the generator performance standards. BESS are highly controllable and output can be changed within milliseconds. Added requirements and uncertainty in the grid connection process will only serve to deter investment, whereas managing locational issues with constraint formulas is transparent and enables investors to make informed decisions around where to site assets, with respect to location-specific considerations.

¹ [National Electricity Amendment \(Fast Frequency Response Market Ancillary Service\) rule 2021 – Draft Rule Determination](#). Page 41

² [National Electricity Amendment \(Fast Frequency Response Market Ancillary Service\) rule 2021 – Draft Rule Determination](#). Page 42

³ [National Electricity Amendment \(Fast Frequency Response Market Ancillary Service\) rule 2021 – Draft Rule Determination](#). Page 42