

21 November 2024



Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000

Re:

Reserve Capacity Price 2027/28

First Element Energy appreciates the opportunity to provide feedback on the reserve capacity price 2027-2028.

First Element Energy (FEE) is a clean energy technology company dedicated to clean and dependable power generation using proprietary flexible clean energy technology. FEE is currently developing a 140MW power project in Western Australia.

FEE in general consider the proposed Reserve Capacity Price (RCP) for 2027/28 as positive to incentivise the capacity investment, and understand this price determination was based on EPWA's recent RCP technology switch from gas turbine to Battery Energy Storage System (BESS), however, FEE's concern is that the high RCP may cause over investment in short term energy storage like BESS rather than renewable generation and other clean energy technologies.

FEE's recommendations and rationales are detailed below.

- 1. The higher RCP will incentivise BESS not renewable and clean technologies, cause mismatch of generation and energy storage.** Australian Energy Market Operator (AEMO) uses relevant level method to determine reserve capacity credit, and this method was based on peaking demand hours in the last 5 years. As the peaking hours always occur in evening, the renewable energy usually has very low capacity credit comparing to its installed capacity, for example, solar farm usually has assigned capacity credit only approximately 10% of its installed capacity. The consequence is that reserve capacity revenue is only a small portion of renewable energy total revenue so the increased RCP has very small impact on its total revenue. For BESS this situation is different. Current market rules assign 1MW capacity credit for every 4MWH BESS storage, we have seen large influx of BESS investment recently and with forecasted lower BESS cost and higher RCP, this may lead to more new BESS installations but not renewable and other clean technologies.

Two problems when we have too much BESS but too less renewable and clean generation that affect power grid reliability are:

- **There will be insufficient renewable or clean power generation to charge BESS.** Assume average capacity factor of 0.33 of wind and utility solar, this means for every 1MWH BESS, 3MW renewable need to be installed so that BESS can be charged daily, and this renewable capacity is additional capacity because renewable also need to supply the system demand. Therefore we need to incentivise more renewable and clean generation but the increased RCP may not incentivise this.
- **Renewable drought will cause power grid blackout.** During renewable drought like that occurred in May 2024 in National Electricity Market (NEM), both solar and wind has very low capacity factor, and this lasted for a week. Under this situation, both renewable and BESS can not do anything to solve the electricity supply problem. BESS do not generate electricity - they only store electricity and dispatch when required, and BESS has short duration typically 4 hours. We need to incentivise true firm capacity that is dependable under renewable drought conditions.

FEE recommend to:

- **Explicitly differentiate the true firm capacity that has longer hours than renewable drought. For this purpose, we need to investigate and define renewable drought as part of AEMO Integrated System Plan, then we need to define the true firm capacity in market rules (similar to technology class in Wholesale Electricity Market Rules) and set out different RCPs to long duration firm capacity (true firm capacity) and other short duration capacity like BESS.**
- **Consider increase the BESS duration to 6 hours or more to balance the investment mismatch between BESS and renewable / clean generation.**

Though we are ware some of these recommendations may not be part of mandate of ERA, however, as these issues are correlated, we would like to take this opportunity to express our concerns and provide solutions from our perspective.

Thank you for your consideration of First Element Energy's submission. If you would like to discuss this further, please contact me at [REDACTED]

Yours Sincerely,

[REDACTED]

[REDACTED]

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