

EFFICIENT PROVISION OF INERTIA CONSULTATION PAPER | 31 MARCH 2023 Energy Users

The Energy Users' Association of Australia (EUAA) is the peak body representing Australian commercial and industrial energy users. Our membership covers a broad cross section of the Australian economy including significant retail, manufacturing, building materials and food processing industries. Combined our members employ over 1 million Australians, pay billions in energy bills every year and in many cases are exposed to the fluctuations and challenges of international trade.

Thank you for the opportunity to make a submission under the Efficient Provision of Inertia Consultation Paper.

The EUAA acknowledges the development of essential systems services (ESS) reforms, through the Post-NEM 2025 and other processes to unbundle and implement markets for the provision of ESS.

The EUAA supports the unbundling of ESS and creation of efficient markets where the cost and risks are allocated to those best able to manage them and/or where the causer pays principle should apply.

EUAA understands that trials on new ways to provide inertia are taking place at the Hornsdale Power Reserve, ESCRI Dalrymple BESS, Monash University (integration of renewables in weak grids) and TransGrid's synthetic inertia trial using their Wallgrove Grid Battery.

EUAA believes that time should be taken to allow the results of the trials to be known and factored into future decisions regarding inertia market designs and implementation.

Given there is a substantial amount of reform already underway across the NEM, particularly for ESS, the market bodies desire to engage stakeholders as meaningfully as possible during consultation on each reform and incomplete technical data is available, EUAA considers that the timing of the implementation of an inertia market should be delayed.

EUAA recognises that delaying the design and implementation of an inertia market will mean that it will not be established prior to AEMO's 2026 forecast that 4 of the 5 regions will either have inertia shortfalls or decline below secure inertia operating levels (*2022 Integrated System Plan*). However, given the current timelines, it is unlikely that even with an inertia market, additional inertia would not be able to be implemented without AEMO's intervention.

INERTIA PROCUREMENT AND ALLOCATION IN REAL-TIME

The EUAA considers that real-time inertia markets will be a requirement if an electricity system is supplied through inverter-based generation systems and only current inertia response technology are considered, including BESS for small rates of change of inertia. However, this does not consider the potential ability of BESS (and other technologies) to respond to large rates of change in inertia that may make an inertia market redundant.

The EUAA agrees that the current "annual" inertia forecasts by AEMO leads to inefficient purchase of inertia by TNSP's. This inefficient methodology for maintaining inertia frequently leads to over-purchase of inertia. However, the ability for AEMO to forecast inertia on a dynamic basis will require significant investment that the AEMC needs to be confident will be offset by the savings created by replacing the current system.



In creating an inertia market, AEMC must ensure that the market request for inertia support can be provided in a suitable time period prior to the need for the inertia (i.e. in an operational timeframe). As an example, for a gas fired generator, fuel must be purchased and transported to align with the needs of the generator. If the timeline of the market is similar to the current NEM, i.e. bids made one hour ahead of requirements, then the gas fired generators may not be able to participate. This will be exacerbated for generation that has slower ramping times.

Additionally, the relationship between the Frequency Control Ancillary Services (FCAS), Fast Frequency Response (FFR) and the proposed Inertia Ancillary Service (IAS) need to be fully understood to ensure the right cooptimisation of these overlapping services is purchased from both system security and cost perspectives.

INVESTMENT SIGNALS FOR INERTIA

The EUAA believes that if a transparent, efficient market is established, with published demand curves, forecasting, co-optimisation and is operated in an operational timeframe, then a positive investment signal will be sent to existing and new providers of inertia.

WILL THE AEC'S PROPOSED SOLUTION BEST ADDRESS THE PROBLEMS RAISED

The AEC's proposed solution does address the problems raised if:

- the need for the provision of inertia is signalled in an operational timeframe and
- that market signals are created that allow for investment in the provision of inertia as synchronous thermal power stations close.

However, the AEMC needs to ensure that development of an efficient IAS does not conflict with, undermine or provide an alternative market for the provision of FCAS, FFR and/or electricity more generally. In this sense, the AEMC needs to ensure that the supply of the power system's inertia requirements is transparent and traceable, and accountability lies with AEMO and inertia market participants. For example, a generator may be providing inertia as a consequence of supplying electricity and vice versa, i.e. the market a generator is providing must be clear and the unit must not participate in more than one market, making the decision to trade off the NEM spot price against FCAS, FFR and IAS spot prices for that unit.

ALTERNATIVE OPTIONS

The EUAA rejects *Alternative market-based mechanism 1* (using the draft Operational Security Mechanism – OSM - design) on the basis that the risk and cost of the IAS is transferred to consumers.

The EUAA can not support *Alternative market-based mechanism 2* using a shadow price based around inter-regional rate of change of frequency (RoCoF) constraints without understanding how inertia can be accurately valued with the application of constraints to manage other system security requirements, such as system strength and system stability.

The EUAA sees benefits in utilising a similar RoCoF Control Service as implemented in the WEM (*Alternative market-based mechanism 3*) as it follows the detailed discussions the AEMC presented for AEC's proposed IAS, and there



will be savings in implementation through replication of an existing mechanism rather than creating a new mechanism. The EUAA also supports the causer pays approach in *mechanism 3*.

Structured procurement options 1 & 2 are variations on the current annual inertia procurement in shorter timeframes, with option 1 retaining the existing TNSP's as procurers and option 2 changing procurement to AEMO. Both of these options lack transparency and the case is not made as to how they would be more efficient than the existing system. The EUAA does not support these options without further information.

The EUAA considers the last alternative option is the most reasonable course of action at present, that is - *Maintain the current framework until technical works inform the best approach*. The EUAA considers that with trials progressing and with a number of overlapping reforms in ESS, that delaying any IAS is the best approach.

IMPLEMENTATION CONSIDERATIONS

The EUAA considers that a spot market for inertia could result in efficiencies for provision and dispatch of inertia resulting in a reduction of costs for consumers. To guarantee this outcome, in developing and implementing an IAS, the AEMC needs to ensure the market participants best able to manage inertia are the entities that will bear the risks and the costs, either through the TNSP's or through a 'causer pays' approach.

In evaluating the need and timing for an IAS, consistent with the last *alternative option*, the AEMC should consider contracting for the provision of inertia as a transitional solution, as (among other reforms) the AEMC is currently preparing its final determination on the development of an OSM, which may provide flexibility in how these contracts are procured, scheduled, and dispatched.

Do not hesitate to be in contact should you have any questions.

Oskila

Andrew Richards Chief Executive Officer