



**EnergyAustralia**

LIGHT THE WAY

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Dear Commissioners,

### **NATIONAL ELECTRICITY AMENDMENT (INTEGRATING ENERGY STORAGE SYSTEMS INTO THE NEM) RULE (ERC0280)**

EnergyAustralia (EA) welcomes the opportunity to comment on the Australian Energy Market Commission's (AEMC's) consultation paper on Integrating Energy Storage Systems into the National Electricity Market (NEM).

EA is one of Australia's largest energy companies with around 2.5 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. EA owns, contracts and operates an energy generation portfolio that includes coal, gas, battery storage, demand response, solar and wind assets. Combined, these assets comprise 4,500MW of generation capacity.

EA is dedicated to building an energy system that lowers emissions and delivers secure, reliable and affordable energy to all households and businesses. EA is, therefore, appreciative of the AEMC's efforts to investigate whether current regulatory settings for energy storage are appropriate in light of ongoing and significant market, technological and operational change. Ensuring these settings are fit for purpose will be a vital enabler of a rapid and robust energy market transition.

The key points in this submission are:

- EA agrees that the Australian Energy Market Operator (AEMO) has identified a number of inconsistencies and inefficiencies within the current storage framework. Further, that these will continue to grow as storage becomes an increasingly significant part of the NEM.
- EA does not, however, consider that these issues are best remedied through the substantial, complex and uncoordinated reform to support new definitions and participant registration categories, as AEMO has proposed.
- Aside from the significant regulatory risks posed, AEMO's solution heightens inefficiency risks by creating inconsistencies with other current and slated reform initiatives.
- EA, therefore, favours an alternative approach that would see pragmatic and incremental 'do now' solutions implemented in the short-term to address specific

aspects of the AEMO rule change request. Further complex and longer-term reform would then occur once the outcomes of other related initiatives were known with sufficient clarity.

- EA considers 'do now' solutions should include:
  - streamlining of the current registration process,
  - removal of Distribution Use Of System (DUOS) charges for utility-scale storage systems, and
  - changing the calculation of participant fees and non-energy charges for utility-scale batteries to one based on a single, net meter data stream.
- This preferred approach would:
  - achieve the technology-neutral approach favoured by AEMO,
  - remove the disincentives for investment in the 'Goldilocks' solution of distribution connected, utility-scale storage,
  - promote further technological innovation such as battery partitioning,
  - minimise regulatory change risks, while
  - delivering lower costs for customers.
- Beyond these changes, EA sees little benefit to reopening consideration of other aspects of the National Electricity Rules (NER) with this rule change. In particular, the application and calculation of Marginal Loss Factors (MLFs) and the interventions and compensations frameworks. These frameworks have been the subject of recent review and remain efficient and fit for purpose.

Further details on select issues are provided below. EA would welcome the opportunity to discuss this submission further with you. Should you have any questions, please contact me via [bradley.woods@energyaustralia.com.au](mailto:bradley.woods@energyaustralia.com.au) or on 03 8628 1293.

Regards,

**Bradley Woods**

Regulatory Affairs Lead

## **The Threshold Question**

EA agrees that the Australian Energy Market Operator (AEMO) has identified several issues and inconsistencies within the current storage framework that are creating inefficiencies in investing, commissioning and operating storage technologies. EA also agrees with AEMO that stand-alone energy storage systems and hybrid facilities are likely to play an increasingly significant role in the NEM. As such, some of the consequences of the current rules regime can be expected to worsen if no remedial action is undertaken.

EA does not, however, agree that these issues are best solved through substantial, complex and uncoordinated reform to almost every chapter of the National Electricity Rules (NER) to support new definitions and participant registration categories, as AEMO has proposed. Aside from the significant regulatory risks these changes pose, the AEMC has correctly identified the costs and risks of AEMO's solution being inconsistent with that arising from the Energy Security Board's (ESB's) Two-Sided Market (2SM) Market Design Initiative (MDI). However, EA notes this is not the only initiative from which inconsistency issues could arise. Other ongoing, related initiatives include:

- operating reserves markets being considered as part of the Resource Adequacy Mechanisms (RAMs) and Essential System Services (ESS) MDIs,
- the AEMC's system services consultation,
- the Dedicated Connection Asset (DCA) rule change, and
- the forthcoming rule change on generation registration thresholds.

EA, therefore, supports an alternative approach. As detailed further below, this would see pragmatic and incremental 'do now' solutions implemented in the short-term to address specific issues raised in the AEMO rule change request. Further, complex and longer-term reform would then occur once the outcomes of 2SM and other related rule changes were known with sufficient clarity. EA considers this approach would strike an optimal balance between addressing exigent, short-term issues while minimising the costs and risks associated with inconsistencies between storage framework reforms.

## **Registration, TUOS and DUOS**

EA agrees that the current registration process that requires registration as both a market generator and market customer is unclear, unwieldy and, ultimately, uneconomic. Moreover, that this is creating unintended and unbalanced investment incentives. There is no better example than the current charging arrangements for utility-scale storage. Despite the same technology performing the same role, utility-scale storage connected in distribution networks face Use Of System (UOS) costs to charge while those connected to transmission networks do not.

This might be an acceptable situation if such costs conferred an advantage to distribution connected storage. For example, by providing some measure of firm network access. Unfortunately, they do not. Distribution connected storage faces the same risk of being constrained off as transmission connected storage.

Such uneven treatment erodes the investment case for distribution connected storage. This is problematic because, as highlighted in the Reliability Panel's 2019 Annual Market Performance Review, it is within distribution networks that the most significant benefits to customers lie. That is, in the provision of voltage stabilisation, frequency control and

other distribution system security services that can lower the incidence and severity of supply disruptions.

Although being more scale efficient, transmission connected storage is sub-optimally located to deal with such issues most efficiently and effectively. It is also more efficiently employed for larger and more widespread contingencies. For example, as was seen earlier this year when a range of security support services was provided in South Australia following the collapse of several 500kV transmission line towers in Victoria.

The situation is reversed for aggregated, customer connected storage. EA is supportive of reforms for improving Distributed Energy Resources (DER) participation and integration, such as the 2SM and DER Integration MDIs. However, EA recognises they are a less scale efficient solution and can suffer from visibility, activation and control issues. This is despite the locational advantages they have over transmission connected storage.

Utility-scale, distribution connected storage, therefore, represents the 'Goldilocks' solution. It combines the scale efficiency and control benefits provided by transmission connected storage with the locational advantages seen with customer connected storage. However, it also provides innovation not possible with either alternative. For example, 'community batteries' have been trialled successfully in Western Australia<sup>1</sup>. These provide solar customers without a battery with a way to manage their solar use more efficiently as well as provide security support services in the distribution network.

With the right framework settings, EA can foresee the development of other potential innovations in distribution connected storage. For example, through battery partitioning, which would allow multiple participants to access and use the same infrastructure for different purposes. Beyond providing a solar sponge and network security services, this could also allow trading of storage capacity on a customer's behalf in the wholesale market.

These innovations are likely to be stymied if investment is not incentivised. EA, therefore, favours:

- removal of DUOS costs for utility-scale distribution connected storage, and
- streamlining of the registration process such that one fee for one comprehensive registration process results. This would include one set of performance standards and see one modelling process combined with one testing and commissioning phase.

EA considers these changes could be supported via incremental changes to existing NER provisions and supporting documentation such as the interim guidelines for utility-scale battery technology. As an example, EA notes that the Australian Energy Regulator (AER) is currently considering simply exempting utility-scale, distribution connected batteries from network tariffs in Victoria if the battery is registered as a scheduled load. Combined with changes to the registration process favoured above, this would minimise regulatory change risks while promoting greater technological innovation, more efficient service delivery and lower costs for customers.

### **Participant Fees and Non-Energy Charges**

EA agrees with AEMO that the current settings are inconsistent and advantage some technology and infrastructure configurations over others. AEMO's suggested solution

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<sup>1</sup> See <https://westernpower.com.au/our-energy-evolution/projects-and-trials/powerbank-community-battery-storage/>

would see participant fees and non-energy charges for hybrid facilities and Market Small Generation Aggregators (MSGAs) calculated on both consumed and sent out energy. Pumped hydro proponents would have to register as a bi-directional resource provider or MSGA and so would have the same treatment applied.

EA considers this is an inefficient method of achieving framework consistency. Aside from requiring far-reaching definitional and participant category changes, it would necessitate the installation of additional telemetry and systems to monitor the individual energy flows occurring between assets in a hybrid facility or MGSA. A far simpler and efficient alternative would be to treat utility-scale batteries the same as hybrid facilities and MSGAs. That is, with participant fees and non-energy charges based on one net meter data stream. Such an approach would:

- achieve the technology-neutral approach favoured by AEMO,
- not impose any additional costs to participants, and
- would also be in keeping with existing arrangements for pumped hydro where pumping load is treated as auxiliary supply and effectively netted for the purposes of calculating participant fees and charges.

### **Forecasting, Bidding and Dispatch**

EA is unconvinced that the issues outlined in section four of the consultation paper are material, nor warrant the changes proposed to deal with them. Limiting the number of bid price bands and specifying that each bid must effectively reflect the remaining stored energy capacity will limit participant flexibility and decrease the relative attractiveness of energy storage investment. EA also notes that it would lead to certain types of pumped hydro technology being treated differently to other storage options. That is, those units which cannot linearly swing from charging to discharging would still have the flexibility of using 10 bid and 10 offer price bands. This is clearly at odds with one of AEMO's stated goals of the rule change, viz., to achieve technological neutrality.

AEMO has not provided any evidence on the frequency, magnitude or costs of the supposed complexities that the current forecasting, bidding and dispatch arrangements are creating. Similarly, AEMO has failed to provide an estimate of the benefits its solutions would deliver. Lacking this, and noting the negative participant impacts, EA does not see how AEMO's proposed changes can be supported.

### **Miscellaneous Considerations**

AEMO's proposed solution requires further consideration of potential changes to many other aspects of the rules governing energy storage systems beyond those discussed above. These include issues such as:

- how intervention and compensation frameworks should work,
- whether the Retailer Reliability Obligation (RRO) should apply,
- if technology-specific drafting in the rules requires updating, and
- whether calculations for Marginal Loss Factors (MLFs) should be changed.

AEMO has proposed potential answers to some of these. For example, suggesting that the RRO should only apply if storage is co-located in a hybrid facility with a separate load. However, there is nothing advanced for others, such as MLFs and the intervention and compensation frameworks.

EA notes these have already been the subject of a major review and numerous rule changes this year. Although finding some changes were appropriate; generally, current settings have been deemed efficient and fit for purpose<sup>2</sup>. This includes their application to energy storage systems.

Given this, EA sees little benefit to reopening consideration of these aspects of the NER with this rule change. In particular, the application and calculation of MLFs, which are a critical locational investment incentive. If such issues are to be reopened, EA suggests this should only occur within the context of the more extensive, long-term changes being contemplated under various MDI's of the ESB's Post 2025 NEM Market Design initiative.

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<sup>2</sup> For example, see the Transmission Loss Factors and Changes to Intervention Mechanisms Final Determinations.