

15 October 2020



Mr Joel Aulbury
Australian Energy Market Commission (AEMC)
GPO Box 2603
Sydney NSW 2000

Dear Mr Aulbury

AEMC CONSULTATION PAPER: INTEGRATING ENERGY STORAGE SYSTEMS INTO THE NEM (ERC0280)

Endeavour Energy appreciates the opportunity to provide this response to the AEMC's consultation paper on the rule change proposal from the Australian Energy Market Operator (AEMO) to better recognise storage in the National Electricity Market (NEM). AEMO proposes that a new participant category for storage is created so that fit-for-purpose arrangements can apply to connection points with bi-directional electricity flows.

Energy storage is becoming an increasingly important part of Australia's energy mix and a key enabler for the NEM's transition to a decentralised energy system driven by variable renewable generation. Storage can reduce pressure on electricity prices during periods of high demand and offers a fast and dependable solution to emerging technical issues that can impact the reliability and security of the system. Its inclusion in the Federal Government's Technology Investment Roadmap as a priority low emissions technology further underscores its importance.

To realise the considerable benefits storage can provide, it is important that the regulatory framework keeps up with the rapid pace of change in storage technologies, service models and markets. To the extent ambiguities in the National Electricity Rules (NER) present barriers to efficient storage investment and operation, we support amendments that provide regulatory clarity and certainty for storage proponents.

Defining storage in the NER

AEMO suggests establishing a bi-directional resource provider (BDRP) in the NER would address several operational, technical and regulatory issues. Currently, there is a requirement for storage and hybrid systems that wish to purchase electricity from the NEM, to register as both a Market Generator and Market Customer.

Ordinarily, we would consider the introduction of a new participant category as uncontroversial. However, NEM participation will become increasingly sophisticated as discrete roles and responsibilities become less discernible. It may therefore be cumbersome to try to incrementally update the NER to keep pace with evolving business models.

We note the simplified and more flexible registration framework being considered by the Energy Security Board (ESB) as part of its Post-2025 market design work program. We understand that the two-sided markets workstream is exploring a technology neutral design for the NEM that places NER obligations on functions and activities, rather than participant categories or technologies. It is possible that combining multiple types of participants into a single registration category would better facilitate transition to a two-sided market model.

We believe the rule change should be cognisant of and complimentary to the Post-2025 reforms. Any changes implemented ahead of the ESB's final report may become obsolete and/or not deliver the desired clarity, certainty and consistency in the long-term regulatory treatment of storage.

We encourage the AEMC to consider maintaining existing arrangements in the interim or alternatively proceed to address specific cost barriers (such as inequalities in recovering participant fees and non-energy charges) that might be achieved without extensive NER amendments.

Applying TUOS charges

Exempting storage from TUOS charges was supported by many stakeholders in feedback to the AEMC's and AEMO's respective Coordination of Generation and Transmission Investment (CoGaTI) and Emerging Generation and Energy Storage reviews. The potential for customers to be charged twice and the propensity for TUOS to distort investment signals for storage were among the most common reasons offered.

AEMO suggests that under the existing network access regime grid-scale storage, like generation, can be constrained and therefore the current charging policies that apply to connected generating systems should also apply to storage and hybrid facilities. AEMO also claims that not charging TUOS to a grid-scale battery will not increase charges to others.

Upon review, we do not consider these views are well founded and we do not support exempting storage from TUOS charges. Whilst we recognise there is scope to improve the NER to clarify charging arrangements for storage, the AEMC should have regard to the cost allocation and equity implications for customers and other participants if storage was to be exempt from TUOS.

TUOS cost allocation

TUOS is ultimately paid by end-use customers when DNSPs pass through transmission charges they are liable for as customers of their respective TNSP. These are consumption-based charges which includes the grid consumption of connected storage units.

Grid-scale batteries have the potential to draw volumes of energy from the grid comparable to large customers who do pay TUOS. By not requiring storage to do likewise, the proposed rule would result in the cost of prescribed transmission services (from which batteries benefit through the energy reliably delivered via the shared network for charging) being allocated entirely to other Market Customers.

To align with beneficiary or causer pays principles which promote fairness among system users, we believe where storage units consume electricity and acts as a load on the system (thereby contributing to the need for the network service), they should pay a suitable cost commensurate with their use of the transmission system. Notably, these principles also underpin AEMO's proposal to address inequalities in non-energy charges by applying a consistent methodology across participants based on electricity consumed and sent out.

By not treating storage on an equal basis with other system users, the proposed rule change would effectively embed a cross-subsidy. The costs of this will be ultimately borne by end-use customers and will rise as the number and size of grid-scale battery installations increase.

Double charging

In contrast to claims that it would lead to double charging and cost increases to customers, requiring storage to contribute their share of transmission network costs would result in the average TUOS price to fall. This is largely as a result of transmission networks being regulated under a revenue cap form of control mechanism which ensures that transmission networks could not recover additional revenue if storage was required to pay TUOS.

The extent to which storage operators pass through their respective TUOS charges will be reflected in the increase of the output price for the services they opt to provide in the wholesale energy, ancillary or other relevant market. If passed on in full, these market price increases will offset the average TUOS price reductions resulting in the amount of transmission costs paid by end-use customers generally remaining unchanged.

TUOS charges could be regarded as a locational cost input necessary for the storage operator to provide a revenue generating service, the value of which will be determined by the relevant market. In this context, it is a cost consideration equivalent to (and not greater than) those any large consumer needs to consider when connecting to the shared network.

Distribution of transmission costs

Whilst the revenue cap ensures that total TUOS costs remain unchanged, the proposed rule change would lead to a shift in how they are distributed amongst DNSPs.

For instance, distribution networks with relatively high levels of grid-connected batteries will incur a greater share of these costs, owing to consumption-based charging arrangements between DNSPs and TNSPs. With BDRPs exempted from paying the TUOS charges they incur, other registered customers within these distribution regions will (other things being equal) pay disproportionately more TUOS than those in regions where storage is less prevalent.

Consequently, any national and jurisdictional reforms and schemes designed to attract and incentivise investment in storage could result in customers paying higher TUOS in locations where they are most effective.

As a general principle, we believe loads should be treated in the same manner. Applying TUOS to all point-in-time system loads (including auxiliary load) would maintain a technology agnostic approach to the network charging regime and preserves competitive neutrality. As outlined above, doing otherwise would provide storage operators with an unfair technological advantage which could result in market distortion at the expense of customers.

Consistency between TUOS and DUOS

AEMO's rationale for exempting storage from TUOS but not DUOS (for consumed energy) is not clear. In our view this discrepancy appears incongruent with AEMO's objective to rectify regulatory inconsistencies, such as how fees and non-energy costs are recovered from Market Participants.

Intuitively, we would expect DUOS arrangements to mirror TUOS arrangements given both networks are utilised by storage. Consistency would also mitigate the risk of incentivising storage to locate in parts of the system where their contribution to network costs would be subsidised the most.


In considering whether to apply symmetrical TUOS and DUOS charging arrangements, it is appropriate to have regard to the three complimentary and interrelated DER integration rule change proposals currently under review by the AEMC. Similar to AEMO's proposal, they seek to update the NER for the transformational change that has resulted in an increase in customer driven two-way energy flows. This includes removing the prohibition on DNSPs to charge DUOS for energy exported to the grid which conflicts with AEMO's proposal to amend the relevant NER clause 6.1.4 to extend this prohibition to registered storage units.

We recognise export charging is a complex issue as it represents a fundamental shift in how network costs are recovered. Nevertheless, these rule change proposals were developed after recent and extensive industry collaboration to identify ways to promote efficient investment in DER (including storage) and fairness in how costs driven by DER are recovered.

In our view, it is problematic to propose a change to a NER clause that itself is being considered within an open AEMC rule change consultation process – particularly one which is being considered for removal from the NER. We consider it is sub-optimal to attach the same DUOS arrangements on storage as they currently apply to generation when there is a possibility these arrangements will change.

If you have any queries or wish to discuss our submission further please contact Colin Crisafulli, Manager Network Regulation at Endeavour Energy on (02) 9853 6017 or via email at colin.crisafulli@endeavourenergy.com.au.

Yours sincerely



Rod Howard
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