

16 September 2021

Mr. Joel Aulbury

Senior Adviser

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Dear Mr. Aulbury,

## Re: Integrating energy storage systems into the NEM draft determination

Flow Power welcomes the opportunity to make a submission in response to the AEMC's draft determination on integrating energy storage systems into the NEM.

Flow Power is an electricity retailer that works with business customers throughout the NEM. Our vision is to redefine how customers manage energy, putting them at the centre of the market and accelerating Australia's progression towards a net-zero future.

We empower our customers to take control of their energy usage, lower their bills and reduce their carbon footprint. We provide customers with:

- Transparent retail tariffs that reward demand flexibility and encourage electricity usage at times of plentiful renewable output.
- Hardware solutions that provide greater visibility and control over energy use.
- Access to renewable energy, either through distributed solar and storage installed on site, or through a virtual generation agreement with utility-scale wind and solar farms.

We believe that by equipping customers with these tools, we can lower costs for all energy users and support the transition to a net-zero carbon future.

## Overview

The key points we would like to make regarding the AEMC's draft determination are:

- **Transmission use of system charges should not be recovered from utility-scale storage.** Our submission outlines why we do not support TUOS cost recovery from storage, describes our concerns with the AEMC's proposal and sets out an alternate option. Noting the AEMC considers the draft decision a clarification of the current arrangements as opposed to a change, we believe the draft decision will increase the likelihood of existing

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and new storage projects being exposed to TUOS costs. The magnitude of new TUOS charges for storage projects outweighs the other benefits to storage in the rule change.

- **We support the other proposed changes outlined in the draft decision.** The proposed changes to registration categories would streamline the process, simplify a complex area of the NER and provide clarity, particularly for hybrids. The approach set out for recovering non-energy costs would create an effective, enduring solution for an increasingly bi-directional power system. Removing the outdated regulatory barrier preventing small generation aggregators from providing market ancillary services is another positive step forward for distributed energy resources in the NEM.
- **Implementation costs may outweigh the benefits of introducing a single DUID.** While we are supportive of the general changes in the draft rule, the costs associated with introducing a single DUID to storage may outweigh the benefits. If existing storage proponents do not provide strong support for the benefits of a single DUID, consumers may be better off under a continuation of the dual-DUID approach.

## Concerns with TUOS cost recovery from storage assets

### Overview

The AEMC's draft decision makes multiple improvements to the NER with respect to energy storage and hybrid systems. An underlying principle upon which these improvements have been based is maintaining technology neutrality and focussing on service-based regulation instead of asset-specific regulation. This will be increasingly important as the NEM decentralises.

With respect to TUOS cost recovery, the draft decision would recover TUOS from energy storage by designating integrated resource providers (IRPs) as Network Customers for the purpose of Chapter 6A, the same approach used for consumer loads. This approach treats all consumption equally; however, we consider this to be an oversimplification. There is a strong basis to not apply TUOS cost recovery to all consumption (i.e. by not applying it to utility scale energy storage) that is consistent with a service-based, technology-neutral framework.

Recovering transmission use of system (TUOS) costs from battery storage, hybrids and pumped hydro risks outweighing the benefits introduced by the draft decision. Recovering TUOS from storage materially degrades investment cases, complicates operation and reduces the competitiveness of storage.

### Historical basis for TUOS cost recovery from consumers and not generators

The National Electricity Market (NEM) operates under an open access framework. TNSPs invest in their networks to meet region specific reliability standards that give their networks a level of redundancy to protect against contingencies. This provides consumers with a very high level of reliability through the transmission network, effectively providing them with "firm access". To pay for this firm access, consumers pay TUOS charges.

On the other hand, generators have a right to connect to the network, but not the right to sell generation into the network. Generators negotiate a connection to the transmission network and pay for their connection to the shared transmission network. They do not get a right to be dispatched and aren't compensated when not dispatched. The dispatch of generators is limited by the constraints of the transmission system and when the network is congested, generators can be constrained-off (or, less often, constrained-on). Because they do not have firm access, generators have not paid TUOS charges.

The key distinguishing characteristic between those who do or do not pay TUOS is whether TNSPs are required to invest in transmission infrastructure to meet the needs of a connected party. TNSPs must invest in infrastructure that meets the supply requirements of consumers, but are not required to invest to facilitate a generators connection to the network.

### ***Energy storage should be treated on equal footing to generation***

Charging TUOS from storage assets treats all energy consumption equally from the perspective of recovering transmission costs. That is, no matter why energy is being consumed, it is invariably using the transmission network and therefore should be subject to TUOS cost recovery. At the same time, any generation should not be subject to TUOS charges.

This approach treats all consumption as the same. However, we disagree with this characterisation. Instead, large scale energy storage in the form of large batteries and pumped hydro are more appropriately treated as generation. Unlike most consumption, the energy consumed by storage and pumped hydro is only stored to be subsequently exported. In practice, storage connected into the transmission system just moves the timing of when power is sent through the transmission network.

The distinction between large scale energy storage and other energy consumption is amplified by the difference in their access to the network. Batteries and pumped hydro don't have firm access as "customers" – they're scheduled by the NEM dispatch engine and are subject to constraint. As such, recovering TUOS from storage does not appear to be consistent with the historical rationale from TUOS recovery.

In addition, TUOS costs would effectively be recovered twice, once when being stored, and again when used by a customer. In instances where storage assets are not using energy other than to store and later export, this would just result in double charging TUOS when it comes from storage.

Recovering fixed transmission costs from energy storage changes the level playing field between these assets and other generators.

### ***TUOS charges are not cost-reflective***

Recovering TUOS charges from storage assets could still facilitate efficient operational decisions if the variable component of TUOS was recovered through cost-reflective price signals.

However, the TUOS tariffs used by TNSPs are not designed to reflect the short-run marginal costs of using the transmission network. Instead, they typically consist of a location-based demand charge and a fixed charge. This provides no ability for storage assets to efficiently use the network and reduce their TUOS costs.

The view that loads can help reduce congestion on the transmission network has been supported by the arguments made by the AEMC and ESB when exploring potential changes to transmission access arrangements. However, as TUOS costs do not reflect short-run costs, there is no efficient signalling provided that would encourage storage to reduce network congestion.

### ***Efficient cost recovery***

A significant portion of TUOS costs relate to sunk investments. Where costs are fixed, they are most efficiently allocated upon those whose behaviours are less distorted by it. In this case final consumers, with relatively inelastic consumptions, are a better choice than generators or storage, who would likely take inefficient actions to avoid TUOS charges. For example, under-building storage to avoid fixed TUOS costs.

## **Overlap with potential changes to transmission access changes**

Energy security board (ESB) and the AEMC have been exploring changes to the transmission access framework. These proposals have generally considered energy storage as synonymous with generation.

Options being considered included deep connection charges, generator TUOS and a congestion management model. Under all models, it is likely that utility scale storage and hybrid systems would be treated equally to generators. If this were to happen, it would require a rethink of the framework for recovering transmission network costs. As such, we would suggest it is more appropriate to not recover TUOS from storage until these proposals to change transmission access arrangements have been finalised.

## **Proposed solution**

We think the final rule could provide a clearer framework for how TUOS should be recovered from storage assets. We think the regulatory framework should provide IRP with a choice when connecting between:

- Opt-in to paying TUOS for an integrated resource unit if desired. If an IRP did this, the consumption side of the storage asset would have access to the network inline with the TNSPs reliability standard.
- Opt-out of paying TUOS if the integrated resource unit is scheduled, and able to be constrained by NEMDE to reduce impact on the transmission network. If the IRP takes this option, the TNSP would not be required to meet the network performance requirements under any relevant jurisdictional electricity legislation for that connection point.

Alternatively, the AEMC could introduce additional negotiating principles negotiated transmission services. There does not appear to be a reason why TNSPs should be able to recover TUOS from connected storage assets that have explicitly opted out the jurisdictional reliability standards for transmission. This should be explicitly reflected in the negotiating principles in the NER to improve the negotiating imbalance between TNSPs and connecting parties.

Without providing IRPs with greater explicit optionality or a stronger negotiating position risks are significant for consumers because it:

- adds material new costs to storage projects
- introduces an unequal playing field between storage and generation
- relies on TUOS charges being costs reflective (and therefore able to induce efficient consumption decisions) where this is not the case.

## **In conclusion**

We are broadly supportive of the AEMC's draft decision but consider a rethink of the approach to TUOS is required. We look forward to engaging with the AEMC on this further.

If you have any queries about this submission, please contact me on (02) 9161 9068 or at [Declan.Kelly@flowpower.com.au](mailto:Declan.Kelly@flowpower.com.au).

Yours sincerely,  
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