

16 September 2021

Ms Anna Collyer
Chair
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Electronic Submission – ERC0280

Draft Determination – Integrating Energy Storage Systems into the NEM

Dear Ms Collyer,

Energy Networks Australia (ENA) welcomes the opportunity to provide a response to the Australian Energy Market Commission's (AEMC) Draft Determination on Integrating Energy Storage Systems into the National Electricity Market (NEM). This response is on behalf of ENA transmission members.

Energy Networks Australia is the national industry body representing Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

ENA supports an effective long-term framework for the connection and charging arrangements for energy storage systems that are clearly specified in the rules for scheduled and semi-scheduled generation/load connections on the transmission network.

Any framework to better integrate energy storage needs to be enduring and encourage these forms of dispatchable generation that will be needed to manage the rapid transition to renewables.

Whilst improving registration of storage, the proposed arrangements appear to extend beyond the scope of the original AEMO Rule change and transmission members remain concerned over a number of specific aspects that have the potential to add additional complexity and uncertainty in the regime.

As transmission and distribution pricing, planning and operational arrangements are fundamentally different under the Rules, alignment in pricing arrangements for transmission and distribution connected storage should not be a targeted design principle in the final rule.

In summary:

- » ENA agree there should not be a blanket exemption on Transmission Use of System charging (TUOS) charging for load for transmission connected battery and pumped hydro;
- » Where that load is non-firm and participates in the relevant AEMO constraints such that it does not drive network augmentation it should be exempt from TUOS, while loads that are firm (or belong to bona fide customers) should face TUOS;
- » New clause 5.2A.3(b1) is not required to achieve the objective of giving the Connection Applicant for an integrated resource unit the right to request a shared transmission service that is classified as a

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prescribed transmission service or as a negotiated transmission service. The Connection Applicant already has that right under clause 5.2A.3(b) of the National Electricity Rules (NER) and the new clause creates inconsistency and misunderstanding;

- » ENA agree that transmission charges for transmission connected bi-directional production units with load should be negotiated services dependent on the performance standard applicable, this provides flexibility to consider scheduled loads vs non-scheduled loads differently;
- » ENA support the AEMC proposal that there is no change to existing negotiated connection agreements and welcome clarification in the final determination that a modification to an existing connection under Chapter 5, for example where new load, generation or storage is added, that the new rules and charging arrangements would apply;
- » If the battery (Network Service Provider (NSP) owned or third party owned) is a pure network device with no market facing component, then a market participant may not be required;
- » Transmission Network Service Providers (TNSPs) have certain service obligations under the NER and must have the discretion in how they provide services to meet those obligations and whether they procure assets directly or contract services from third parties; and
- » The interplay of this rule and the system strength rules needs to be dealt with publicly to ensure a clear and workable framework for implementation. It may be useful to enable the key industry associations an opportunity to review a near final concatenated rule to provide any feedback on the drafting.

Given the complexity of this Rule change, transmission members would also be open to providing further review and feedback on detailed drafting if that would be helpful to the Commission.

Should you have any queries on this response please feel free to contact Verity Watson, vwatson@energynetworks.com.au.

Yours sincerely,



Jill Cainey

GM Networks

Attachment

TUOS Charging for Integrated Resource Provider (IRP) load – a blanket exemption is not supported

ENA agree there should not be a blanket exemption on TUOS charging for load for transmission connected battery and pumped hydro.

As a general principle, where such load is non-firm and participates in the relevant AEMO constraints such that it does not drive network augmentation it should be exempt from TUOS, while loads that are firm (or belong to bona fide customers) should face TUOS.

ENA note that the Australian Energy Regulator (AER) is currently considering Australian Energy Market Operator's (AEMO), Victorian Transmission, proposed pricing methodology that outlines under what circumstances prescribed transmission charges may be exempt. This arrangement, subject to AER approval, would provide transparency and reasonably consistent application across transmission connected customers.

Clause 5.2A.3 (b1) is not needed and should be removed

The drafting of new clause 5.2A.3(b1) is inconsistent with the current definitions of *prescribed transmission service* and *negotiated transmission service* and misunderstands the manner in which clause 5.2A.3(b) and the current *application to connect* process has operated for some time.

New clause 5.2A.3(b1) is not required to achieve the objective of giving the *Connection Applicant* for an *integrated resource unit* the right to request a *shared transmission service*¹ that is classified as a *prescribed transmission service* or as a *negotiated transmission service*. The *Connection Applicant* already has that right under clause 5.2A.3(b) of the NER.

The classification of the *shared transmission service* requested by the *Connection Applicant* depends upon the technical characteristics of the requested service (i.e. a *shared transmission service* that falls within the definition of *prescribed transmission service* does not become a *negotiated transmission service* simply because the *Connection Applicant* or the TNSP want it to be treated as a *negotiated transmission service*).

The classification of shared transmission services as either prescribed transmission services or negotiated transmission services depends upon whether:

¹ A *shared transmission services* is a service provided to a *Transmission Network User* for use of a *transmission network* for the conveyance of electricity and includes a service that ensures the integrity of the related *transmission system*. In the context of the current draft rule change, this is effectively the delivery of electricity through the *transmission network* to a *transmission network connection point* for consumption by a *facility* that is *connected* to that *transmission network connection point*.

- » the shared transmission services requested by the Connection Applicant:
 - meet; or
 - exceed or do not meet,
- » the 'standard' network performance requirements for shared transmission services specified in jurisdictional electricity legislation or Schedules 5.1a or 5.1 of the NER; and
- » in the case of a shared transmission service that exceeds the 'standard' network performance requirements, that shared transmission service is classified as an above-standard system shared transmission service.²

For example:

- » If the *shared transmission service* requested by the *Connection Applicant* meets the standard *network* performance requirements, that service will be classified as a *prescribed transmission service* and the charges for that service will be determined in accordance with Part J of Chapter 6A of the NER.
- » If the *shared transmission service* requested by the *Connection Applicant* exceeds the standard *network* performance requirements but falls within the definition of *above-standard system shared transmission service*, that service will be classified as a *prescribed transmission service* and the charges for that service will be determined in accordance with Part J of Chapter 6A of the NER.
- » If the *shared transmission service* requested by the *Connection Applicant* exceeds the standard *network* performance requirements but does not fall within the definition of *above-standard system shared transmission service*, that service will be classified as a *negotiated transmission service* and the charges for that service will be determined in accordance clause 5.2A.6 and the *negotiating principles*.
- » If the *shared transmission service* requested by the *Connection Applicant* does not meet the standard *network* performance requirements, that service will be classified as a *negotiated transmission service* and the charges for that service will be determined in accordance clause 5.2A.6 and the *negotiating principles*.

This outcome has been the case since the terms *prescribed transmission service* and *negotiated transmission service* were first introduced into the NER. New clause 5.2A.3(b1) does not change this outcome given that the definitions of *negotiated transmission service* and *prescribed transmission service* have not been altered by the draft rule change.

In addition, existing clause 5.2A.3(b) already makes clear that a *Connection Applicant* may apply to a TNSP for the provision of either *prescribed transmission services* or *negotiated transmission services* in accordance with Rule 5.3. The TNSP must comply with Chapter 5 in negotiating a *connection agreement* for the requested service.

² An *above-standard system shared transmission service* is defined as a *shared transmission service* that exceeds the requirements referred to in paragraph (a)(1) or (2) of the definition of *prescribed transmission service* principally as a consequence of investments that have benefits extending to *Transmission Network Users* beyond those *connected at a single transmission network connection point*.

If any lack of clarity exists, it relates to the *network* performance requirements set out in Schedule 5.1a or 5.1 of the NER.

In the context of a previous example relating to ElectraNet concerning whether a 'non-firm' *shared transmission service* provided to a battery for the purposes of charging that battery would be classified as a *prescribed transmission service* or a *negotiated transmission service*, the agreed view taken was that the *network* performance requirements under the relevant jurisdictional instrument (in this case the South Australian Electricity Transmission Code) and Schedule 5.1 of the NER required ElectraNet to plan and operate its *transmission network* so that it was able to meet the *agreed maximum demand* at each *Transmission Customer connection point*.

In the case of the Dalrymple battery, the *connection agreement* made clear that the *Transmission Customer* did not require and therefore was not going to receive a *shared transmission service* which met this *network* performance requirement. Rather, the *shared transmission service* (i.e. the delivery of electricity through the *transmission network* to the relevant *connection point* in order to charge the battery) would be provided on an opportunity basis with no guarantee that the *Transmission Customer* would be able to take any quantity of electricity through its *transmission network connection point* at any point in time.

These characteristics requested by the *Transmission Customer* and recorded in the *connection agreement* meant that the *shared transmission service* being provided to that *Transmission Customer* was properly classified as a *negotiated transmission service*.

If new clause 5.2A.3(b1) is deleted from the draft rule change, the above characterisation would continue to apply depending upon:

- » the network performance requirements for shared transmission services under the jurisdictional electricity legislation applying in each participating jurisdiction; and
- » the application of the network performance requirements specified in Schedule 5.1 to each transmission network.

The AEMC needs to be cognisant that there are differences in the transmission connection locations, which transmission owner/entity is collecting what costs and who pays already. These charging arrangements within the NER and part in/out of the NER depending on the states policy just add to complexity for impacted participants. As noted above for a regulated transmission network service provider the network performance requirements and the application of Schedule 5.1 would continue.

Differing treatment for transmission and distribution connections is sound

ENA agree that transmission charges for transmission connected bi-directional production units with load should be negotiated services dependent on the performance standard applicable, this provides some flexibility to consider scheduled loads vs non-scheduled loads differently.

For a transmission connected battery/storage where the charging load is scheduled, the generation component is scheduled or semi-scheduled, and the unit is dispatched subject to constraints it is unable to drive transmission network augmentation. Further where the device is bona fide storage, with electrons in and electrons out, ultimately an end user will pay TUOS at the ultimate point of consumption.

This contrasts to the equivalent devices in the distribution network which are not dispatched subject to distribution constraints and thus can and do drive investment in the distribution network. Without a mandatory distribution operating envelope, charging at times of high local demand and low wholesale prices can occur. Likewise, discharging at times of low local demand and high wholesale prices can occur. Distribution businesses should be able to apply operating envelope conditions that ensure batteries and hybrid units connected to the distribution system do not drive additional investment in the distribution network.

The Energy Security Board has recommended locational marginal pricing (LMP) be adopted as part of the congestion management model, LMP would be applied to all scheduled and semi scheduled generation and load. Storage would likely locate on the outer side of a constraint and act to reduce congestion and spilled renewable energy. Arguably this reinforces the logic for certain grid scale storage not being subject to TUOS.

No change to existing negotiated transmission connection agreements

ENA support the AEMC proposal that there is no change to existing negotiated connection agreements. ENA note that where existing connection agreements utilise definitions from the NER and these are altered, the revised definitions might automatically apply. Existing connected parties would need to consider the impact on existing agreements on a case by case basis.

ENA welcome the AEMC's clarification, that where there is a modification to an existing connection under Chapter 5, for example new load, generation or storage is added, that the new rules and charging arrangements would apply.

Marginal Loss Factors (MLF)

ENA supports the AEMC decision to not make changes to the way MLFs are calculated for storage and hybrid systems.

NSP owned storage systems

AEMC consider that the current arrangements remain that an NSP owned energy storage system would need to make use of a market participant for market facing services to file the connection agreement with the NSP.

NSPs engage with AEMO on the performance standards for NSP owned storage devices as they would for any other storage device. If the storage device is an alternative to transmission network, it is virtual transmission, it is essentially part of the prescribed transmission system services to support transmission services to all customers. If the battery (NSP owned or third party owned) is a pure network device with no market facing component then a market participant may not be required e.g. to limit reverse flow and prevent burn out of transmission transformers.

As noted previously AEMO already advises TNSPs on technical performance standards for synchronous condensers. Where storage is adopted as virtual transmission then ENA consider a similar approach should be adopted and would satisfy any concerns of maintaining the normal operation of the power

system. TNSPs have certain service obligations under the NER and must have the discretion in how they provide services to meet those obligations and whether they procure assets directly or contract services from third parties.

Clear workable rules framework needs to be maintained

There are substantive rule changes in both this integrating storage rule and the system strength rule and they are intended to be implemented around the same time, not at the same time. The interplay of the two rules needs to be dealt with publicly to ensure a clear and workable framework for implementation. It may be useful to enable the key industry associations an opportunity to review a near final concatenated rule to provide any feedback on the drafting.