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Taryn Maroney
Australian Energy Market Operator
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Lodged by email: eges@aemo.com.au

Dear Taryn

Emerging Generation and Energy Storage in the National Electricity Market (NEM) – Stakeholder paper

TransGrid welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) stakeholder paper in relation to its Emerging Generation and Energy Storage in the NEM review.

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, and is instrumental to an electricity system that allows for interstate energy trading.

Australia is in the midst of an energy transformation. This is primarily driven by changing community expectations and choices, advances in renewable energy technologies, retirement of existing generation, and the adjustments required in Australia's economy to meet our international climate change commitments. These changes raise complex issues in relation to the design of the NEM which must adapt to these changes and provide the basis for low emissions, reliable supply at the lowest cost to consumers over the long run.

TransGrid understands that AEMO is seeking stakeholder views on how the national electricity regulatory frameworks can be improved to better integrate grid scale energy storage systems into the NEM and accommodate the associated new business models that are emerging. This submission sets out our views on the issues as categorised by AEMO.

Defining Energy Storage System (ESS)

TransGrid supports AEMO's views that an ESS definition is required and that it should be "sufficiently generic to allow for different technologies". Given this, we support AEMO's suggested definition of ESS.

Participation and Operation

To recognise the range of benefits that storage can provide, TransGrid supports a new Registered Participant category for grid-scale energy storage system be provided for in the National Electricity Rules (NER) rather than the current approach of classifying storage as generation and a load. Specifically TransGrid supports the principle of AEMO's Option 1, the creation of a stand-alone Registered Participant category.

As there is an increase in the integration of new business models, in particular hybrid models into the NEM, TransGrid supports further consideration of a hybrid model bi-directional resource Provider Registered Participant. More detailed analysis needs to be considered for a hybrid system and greater thought needs to be invested into how this model will work within the NEM. Proponents of these models would provide greater input into how this would work. Whilst AEMO's Option 2b, might be a useful model for some market participants TransGrid does not support Option 2b, as an

alternative to option 1. There are viable business models where an ESS is established as a stand-alone asset rather than co-located with renewable assets as part of a hybrid system.

A review of the registration framework should consider the most efficient approach to categorising participants, so to ensure that the full range of benefits provided by different technologies and business models are accessible. Further, the registration framework should minimise the operational complexity and administrative burden for AEMO and participants.

Fixing the registration category for storage would have a flow on effect for developing appropriate charging arrangements.

The registration framework should also consider how the connection process in Chapter 5 of the NER will be affected.

NER recovery market

TransGrid supports AEMO's proposed approach in which a scheduled ESS should be treated comparably to a generation asset and not pay Transmission Use of System (TUoS) charges.

In the event of the capacity of the network being reached, if an ESS is not paying TUoS AEMO should have the ability to constrain off the ESS or require the ESS to match load with capacity on the relevant part of the network. Should an ESS wish to have equal access to energy from the grid as a load customer then it should pay TUoS charges.

Other NEM improvements - The application of performance standards to a generating system or load in an exempt network

TransGrid supports AEMO's proposal to address the application of performance standards to a generating system or load in an exempt network via a rule change. However, as well as addressing the application of performance standards, TransGrid considers that the rule change must necessarily cover the broader requirements of the connection process including those relating to inter-network impacts set out in NER 5.3.2(e), 5.3.3(a)-(b), 5.3.5(d) and 5.3.7(a).

Other NEM improvements – Providing NEM information to project developers

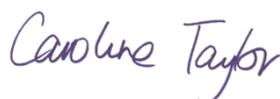
TransGrid supports AEMO's views on allowing project developers to have access to the information they need to develop a grid-scale resource if they satisfy AEMO that this is their intent.

Other NEM improvements - Separation of operational and financial responsibility

TransGrid supports maintaining the current NEM arrangements as set out in AEMO Figures 6-8. If AEMO's Figure 9 is preferred, AEMO should consider how the allocation of electrical energy losses is addressed directly via the individual meters and market settlement rather than via an off-market settlement as occurs currently. If this component was addressed then the need for AEMO's concern in the stakeholder paper around dispute resolution would be minimised. We would also suggest that AEMO consider if the proposed separation will have any impact on the connection process defined in Chapter 5 of the Na NERs.

We appreciate the opportunity to comment on the AEMO's stakeholder paper and look forward to engaging with AEMO and other stakeholders further on this project. If you would like to discuss our submission, please contact Zainab Dirani, Senior Research Analyst on 02 9284 3534.

Yours faithfully



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