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Ms Merryn York
Acting Chair
Australian Energy Market Commission

Lodged via the AEMC website

Dear Kerry

Re: Response to Integrating Energy Storage Systems into the NEM Consultation Paper

Tilt Renewables welcomes the opportunity to provide feedback on the Energy Security Board (ESB) Integrating Energy Storage Systems into the NEM Consultation Paper.

Tilt Renewables is a leading Australasian renewables developer engaged across all stages of project development through to operations. Tilt Renewables currently has 366 MW of operational wind farms across the NEM and New Zealand, plus a further 469 MW in construction/commissioning and over 3 GW in its development pipeline. Tilt Renewables is developing several energy storage projects and welcomes changes to the rules framework that provide clarity and flexibility for participants to optimise their assets.

Registration and hybrid facilities

As a participant in the advanced stages of developing a hybrid energy storage project with an existing wind farm, Tilt Renewables sees an opportunity for improvement in the current rules framework. Clarity on the process to co-locate energy storage projects is required so that participants have a clear pathway to connection and registration. Flexibility in how storage assets can be utilized in tandem with renewable generation is required to optimise the benefits of co-location.

When a generator in a hybrid model has a semi dispatch cap applied there should not be any limitation on that generator sending excess energy to a co-located battery behind the connection point. Furthermore, this co-located charging should occur outside of central dispatch such that only a single loss factor apply to the energy that is generated and stored in the co-located storage system. When charging a battery from a co-located generator, there should not be a loss factor applied to the generator, the load component of the battery and finally the generator component of the battery, as this does not appropriately reflect



transmission losses, and creates disincentives to investment in storage systems. Tilt Renewables recommends flexibility in generators being able to manage their assets behind the connection point, without generation being constrained unnecessarily or having multiple loss factors apply that does not reflect losses on the transmission system.

The co-located storage asset that Tilt Renewables is developing has unique DUIDs to the generation asset. If the decision was made to co-locate behind the existing DUID of the wind farm, it is not clear if this would result in the generator remaining as a semi-scheduled unit or being forced to categorize as a scheduled generator. A generator with a battery co-located should not be forced to classify as scheduled as the variable nature of the generator would still remain in the instances where the battery is fully charged or discharged and cannot be used to smooth output, resulting in non-compliance with dispatch targets and other operational inefficiencies that effectively increase the risk and cost of otherwise technically feasible options to better utilise existing connection infrastructure.

Reduction in bid bands

Tilt Renewables strongly opposes the reduction in price bands from the 20 bands that scheduled storage currently receives down to 10 price bands under the proposal. Scheduled storage currently has 20 price bands to better optimise their consumption and generation bids. Reducing price bands to 10 would result in a significant reduction in bidding flexibility for storage assets.

TUOS and DUOS charges

Tilt Renewables supports the intent to clarify the treatment of Transmission Use of System (TUOS) and Distribution Use of System (DUOS) charges for storage units. The approach to these charges across the different network service providers (NSP) is not uniform and creates ambiguity and uncertainty for battery storage market participants. Tilt Renewables supports the proposed approach where storage would not pay TUOS charges.

Tilt Renewables is however against storage still paying DOUS charges upon consumption, as this is inconsistent with the approach to TUOS and rather recommends that DUOS be treated the same as TUOS for storage. Tilt Renewables have investigated developing energy storage assets within the distribution network and upon receiving DUOS estimates from the NSP had to abandon the investment as charges were disproportionately high for the scale of the investment and rendered the projects uneconomic. For example, a 25MW / 100MWh BESS connecting into the 22kV network was quoted to have an annual DUOS charge in excess of \$3 million (if charging occurred between 7am and 11pm).

Performance standards

The AEMO rule change proposes to implement a single set of performance standards for each asset behind the connection point, including a single performance standard for the load and



generation component of a storage unit. Tilt Renewables supports this proposed approach to performance standards unless this results in the reopening of generator performance standards for current generators. This is especially true in the case of older generators that utilise equipment that was not designed to meet the current standards. This should not be used as a 'blunt instrument' to try and drag older technology through to the new performance requirements, which in most cases will clearly be uneconomic and unnecessarily prevent the otherwise relatively straightforward technical integration of storage assets into the network and their associated benefits.

Marginal Loss Factors and Net Energy Balance

AEMO assigns a single MLF to storage behind the connection point of an existing generator (hybrid) if the net energy balance is calculated to be less than 30%. Tilt Renewables recommends that participants should have flexibility to choose either a single or multiple MLFs as appropriate for their facility. Requiring single MLFs for storage assets as part of hybrid facilities does not necessarily reflect the generation and charging profile of the storage asset and may result in less favourable loss factors. A recent example is a 20MW / 40MWh storage asset co-located behind a single connection point with a 100 MW wind farm resulting in a single MLF calculation. The calculation resulted in no change to the wind farm MLF but when a dual MLF was calculated, there was an average improvement of 3.4% for the storage asset (generation and load component) that will not be realised.

Investment Certainty

As with most reform taking place within the energy rules it is important that consideration is given to participants that have made investment decisions or are in an advanced stage of development. Tilt Renewables suggest that participants of energy storage projects should have the opportunity to stay under the existing rules where investment decisions and business cases have been made under the current framework.

Thank you for the opportunity to provide a submission on this matter. If you would like to discuss any of the issues raised in this submission, please contact Maja Barnett, Development Portfolio Manager, on 0425 776 592 or maja.barnett@tiltrenewables.com or myself, as outlined below.

Yours sincerely,

A handwritten signature in blue ink that reads "Nigel Baker".

Nigel Baker
Executive General Manager, Generation and Trading
Tilt Renewables