10 November 2015

John Pierce
Australian Energy Markets Commission
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Sydney South NSW 1235
Submitted via AEMC website - SEA0002

Dear John,

RE: Integration of Energy Storage Discussion Paper

Thank you for the opportunity to provide comment on the Australian Energy Market Commission's (AEMC's) Integration of Energy Storage Discussion Paper (Discussion Paper). We note the Discussion Paper examines whether changes to regulatory frameworks are required to integrate energy storage into the electricity supply chain. This has been a timely review and Stanwell congratulates the AEMC on the depth of its consideration of the issue.

Stanwell agrees with the AEMC's conclusion that for the purposes of network regulation, storage should be considered a contestable service. In addition, we support the AEMC's view that network businesses should only be allowed to own storage behind the meter through a ring-fenced entity. We share the AEMC's concern that networks could gain implicit control of the value of storage through onerous connection regimes or through requiring control of dispatch. Finally, we support the AEMC's approach of supporting the existing technology neutral, market-based regulatory framework.

While we support the majority of the AEMC's conclusions, we retain three concerns regarding the integration of storage in the NEM

1) Aggregator operations lack transparency
2) Extra information is required for power system security
3) Inappropriate participation in the competitive market by regulated monopoly businesses

Aggregator operations lack transparency

Stanwell suggests that consideration be given to the impact on market transparency from the charging and discharging of aggregated battery installations. The AEMC could consider whether aggregators with large portfolios should be required to bid and offer into central dispatch in the same manner as registered generators and market customers.

From observing early business models and understanding the current technology, it is possible to conclude that aggregators could control a sizeable portfolio of customer battery load and generation. If this occurs, there will be large, geographically disperse, price sensitive collections of loads and generators. These portfolios could be made up of hundreds of thousands of individual battery installations amounting to thousands of megawatts of capacity.

Although each of these battery installations is likely to be small, an aggregator could charge and discharge the batteries as a group in response to the wholesale price. As an aggregator's portfolio grows, their charging and discharging will have an increasing impact on market transparency. Although the portfolio will be responding to price, as a Small

Generator Aggregator, there is no requirement to provide AEMO with offer price and capacity information. Without these offers, AEMO is unable to accurately forecast pre-dispatch information which is relied on by generators and market customers.

In addition, when the battery portfolios are charging, they will also be responding to price in the same manner as a market customer. Without a "Small Market Customer Aggregator" registration category, portfolios will be unable to access the wholesale market price and will instead be responding to retail tariffs. Alternatively, if the aggregators are registered as retailers, the aggregator may manage charging with consideration for wholesale prices. In either case, there is no requirement for the aggregator to provide AEMO with bid price and capacity information. Without this information, AEMO is unable to accurately forecast pre-dispatch reducing market transparency for all participants and the regulator.

Extra information is required for power system security

In order to maintain power system security, Stanwell suggests that the location and characteristics of each battery installation be provided to AEMO on installation.

Stanwell is concerned that charging and discharging battery portfolios may impact on the stability and security of the network. It is conceivable that portfolios of batteries may cut in and out in response to price, causing local voltage issues and potentially system-wide frequency deviations. This rapid change in output would be in addition to the intermittency problems already associated with wind farms and solar installations.

At AEMO's Renewable Energy Roadshow[1] AEMO stated that they lack adequate information on the voltage and frequency settings of inverters used in domestic solar installations. For system security reasons, AEMO needs to know at what default frequency and voltage the inverters will disconnect from the network. This concern stems from an incident in Germany where a large number of inverters simultaneously disconnected from the network during grid frequency disturbances.

AEMO has also revealed that it is only because of the registration requirements of the Renewable Energy Target that they have been able to gain information on the inverter size and location of domestic solar installations. At this stage there is no requirement for a similar central agency to collate battery installation data. This could mean that AEMO will not have the information they require to maintain a secure network in all circumstances.

Without adequate information on the size and location of batteries, load shedding and system restoration processes become more difficult. For example, AEMO may not know whether a feeder will act as a load or a generator during restoration and therefore the feeder's likely impact on the system frequency when the feeder is restored.

In addition, without information, AEMO's forecasting responsibilities become more difficult. Market participants as well as governments and potential investors refer to AEMO's forecasts when making decisions. The complexity of forecasting also increases when the one connection point is used for a load, solar and battery as AEMO will only see the net output.

[1] August 2015

Inappropriate participation in the competitive market by regulated monopoly businesses

Stanwell is concerned that the maximum threshold of 5% of annual revenue for transmission businesses to carry on a related business (including generation, distribution and retailing) is too high. For Powerlink and Transgrid with revenues over $1bn, this potentially means operating a battery business with revenues up to $50m per annum.

Stanwell also notes the State-based ring fencing guidelines allow the sale of electricity by distribution businesses. A review of these guidelines is required to determine whether there is a similar excessive allowance for related-business activity by distribution businesses. This is especially important given most network battery installations are likely to be at the distribution level.

Stanwell is also concerned about the difficulty in classifying the various services (network support, market ancillary services, quality and reliability of supply services, energy) into regulated and non-regulated services. For example, what portion of energy discharged during high prices and medium demand is non-regulated energy trading and what portion is peak demand reduction.

Thank you for your consideration of Stanwell's response to the Discussion Paper. If you would like to discuss any aspect of this submission, please contact Jennifer Tarr on 07 3228 4546.

Regards

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