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RE: EMO0045

To: AEMC

GEM Energy write to the AEMC in response to the EMO0045 regarding the Consultation paper Review into CER technical standards published on the 29 September 2022.

While GEM understands the need of regularly updating standards, we feel there is not enough consideration for solar systems that have been connected under previous standards.

Specifically, upgrading or expanding existing solar PV and battery storage systems is almost impossible without having to update the rest of the system to the latest standards. This is often unable to be achieved which leaves the customer with a stranded asset or worse, equipment is prematurely removed before it reaches end of life, promoting significant electronic waste.

This is already particularly evident with solar PV inverters but is becoming more so with battery systems. We are removing a significant amount of PV inverters from homes due to the challenges with upgrading these systems.

For example, one of our commercial customers installed a Tesla Powerpack in 2018 with 160kVa~ of inverter capacity and approximately 672kWh of storage. The customer is now looking to add an additional inverter module (56kVa) and another battery bank due to an increase in electrical loads on the school.

Customer example:

Existing kVa solar inverters: 380kVa

BESS Inverter: 160kVa

Total capacity: 540kVa

The customer is seeking to expand their system by just over 10% of the existing installation capacity, which is relatively immaterial.

However, due to the introduction of AS4777.2:2020, the customer is unable to expand on their system. The asset has a design life of 15+ years and they are now in a position where expansion is impossible.

This is just an example but there are likely tens of thousands of systems out there in this situation.

Consideration needs to be made for situations like this that allow for additional capacity to be installed without the need to remove the existing system or constrain the customers ability to install additional compatible equipment.

One solution could be to allow for a % increase in capacity (up to 50% for example) of the existing approved installation.

It feels like the rule change was rushed and now there are many stranded inverters being carried in inventory with no ability for them to be installed. There has been very little consideration at issues installers and retailers experience at the 'coal face'.

We have another school who was mid-way through the construction of a 300kw solar farm to be installed with a 696kWh Tesla Powerpack but due to COVID related materials delays, the system was unable to be connected and commissioned prior to the implementation of the standards. The school is now sat on a \$500,000 battery that cannot be connected (battery 13 or a portfolio of 13 batteries), all else are connected.

It's impossible a common-sense approach to the issue as the networks are in a position where they legally cannot provide a connection agreement or special dispensation.

Installing this additional battery provides no risk to the network as it can be connected nil export and has all the network protection required to ensure the network operates safely. If anything, having the battery improves the outcome for the network as it's reducing solar penetration and curtails load at peak times.

Happy to discuss further.

Regards,

Jack Hooper