

19 February 2014

Attention: James Eastcott  
Australian Energy Market Commission  
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Sydney South NSW 1235

## **Rule change submission regarding AEMC project ERC0147 draft final determination: “Connecting Embedded Generators”**

Reposit Power has developed a residential energy storage trading and control system that allows a consumer to reduce their electricity bills. At the same time Reposit’s system improves power quality on the local grid and allows the network company to defer or avoid expensive investments in network infrastructure. It earns revenues to pay for batteries through network and market services. Ultimately this makes the whole electricity system more reliable and cost effective.

Anticipating rapid increase in the number of residential energy storage systems connected to Australian distribution networks, we welcome the transparency created by the draft rule change for connecting embedded generators (EG). The information packs that will be published online by the distribution network service providers (DNSPs) seem comprehensive with single-line diagrams of preferred connection arrangements, protection and control systems, connection service charges, relevant minimum access standards applicable to EG, relevant technical requirements, and model connection agreements. The variety of further information presented in the preliminary response and the detailed response to a connection enquiry will help EG proponents to understand and discuss any requirements placed on them by the DNSP.

It is helpful to have explicit timeframes for preliminary response and detailed response to a connection enquiry, and an agreed period of time during which a connection applicant may lodge its application to connect. By comparison, it seems unnecessary to wait up to four months to receive an offer to connect after an application to connect has been received by the DNSP. In our situation, where EG (energy storage) units will be deployed according to network support requirements specified by the DNSP, we hope that a timely connection process will be in the best interests of both parties.

We believe the proposed rule change could be further amended to assist proponents of energy storage. Particularly, it would be helpful to have more clarity in the categorisation of energy storage, and to allow multiple connections of similar small-scale EG units to be streamlined.

### **Explicit categorisation of Energy Storage as Embedded Generation**

We are presuming that energy storage will be regarded as a kind of EG and will not require separate approval for connection as a load. Under draft rule 5.5 (d) a Connection Applicant may seek distribution network user access arrangements at any level of power transfer capability between zero and, in the case of an Embedded Generator, the maximum power input of the relevant generating units or group of generating units. The use of the word “input” here seems ambiguous. We suggest:

- There should be an explicit statement early in the rule that EG includes energy storage capable of both power input and power output.
- Energy storage connection applicants should specify the maximum power transfer capability, real and reactive, in both directions.

In this context it may be necessary to consider and clarify how this rule change might interact with the provisions for EG introduced to the Electricity Supply Act that assisted the rapid uptake of small-scale solar photovoltaic (PV) generation in recent years.

### **Streamlining multiple connection applications of identical kW-scale Embedded Generation**

Draft rule 5.5 refers several times to “generating units or a group of generating units” and it seems that this refers to multiple units using the same point of connection to the network. There is consideration of alternative connection points in draft rule 5.4A (n) but again it seems that an application to connect can result in approval to connect at one and only one point.

We anticipate applying to connect identical energy storage units at multiple residential locations with separate points of connection to a distribution network feeder. The Position Paper addresses multiple similar connections in section 2.2:

*“The Commission considers that there is merit in allowing parties to bypass the initial preliminary enquiry stage. However, it is noted that despite a connection appearing to be a repeat connection with similar attributes from the perspective of the connection applicant, for the DNSP involved, each connection is unique to the relevant location. Therefore, the ability to skip the preliminary enquiry stage should only occur where both parties are in agreement that this is appropriate in the circumstances. The draft final rule provides the ability for connection applicants to request that the preliminary enquiry response be bypassed with respect to a specific proposed connection. This may occur if the relevant DNSP is in agreement.”*

Because we would make multiple connection applications with full knowledge of the relevant DNSP, and with the aim of providing network support services, we expect that the DNSP will agree to bypass the preliminary enquiry response for all but the first application.

However, that is a relatively small economy of scale. A homogeneous rollout of, for example, two hundred 15 kVA energy storage units is substantially different to installing a single 3 MVA generator, yet both are within the scope of the proposed rule change. The solar PV rollout establishes a precedent for householders installing large numbers of relatively homogenous generators into the system, and shows that there could be two orders of magnitude more connection requests per month for small-scale energy storage compared to MW-scale EG. We therefore suggest:

- There should be a method for group submission of multiple connection applications for identical, kW-scale EG units to the same DNSP, recognising that the workload of responding to these applications will be greatly reduced by their similarity.

We hope our suggestions are helpful in addressing the concerns of other proponents of multiple small-scale EG and energy storage, and we look forward to the final rule determination by 17 April 2014.

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