

linking **demand** with **supply** 

in the Australian energy market

8 May 2009

Australian Energy Market Commission PO Box A2449 Sydney South NSW 1235

Via email: submissions@aemc.gov.au

Dear Sir,

## EMO0001 – Submission on the Review of Energy Market Frameworks in light of Climate Change Policies: Discussion Paper, Public Forum Melbourne 1 May 2009

Thank you for the opportunity to comment on the issues raised at last week's public forum and in the discussion paper.

Our comments relate to the second question in section 3.1.1 of the discussion paper: *"Is the volume of under-utilised small embedded generation capable of active participation in the market marginal or significant?"*, and to related discussion during the forum.

## Our perspective

For the last two years, we have been working with the owners of under-utilised small embedded generators to register the units as market generating units so that they can participate actively in the market.

We mostly work with sites which have generating capacities between 1 and 10MW. The generators are typically installed for standby purposes, so they are grossly underutilised.

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## Our comments

- The volume of existing under-utilised small embedded generation is significant. We are aware of several hundred megawatts of such capacity in each of Melbourne, Sydney and Brisbane. Almost none of these this capacity is *currently* capable of active participation in the market, as all sites require some control and metering changes, and some sites require changes to the network connection and protection arrangements. Simplifying these processes will lead to more of this capacity being brought into the market more quickly.
- 2. We are aware, from discussions with several electrical design and consultancy firms, that many planned embedded generation projects (e.g. co-gen and trigen installations in "green buildings") are either abandoned or significantly scaled back because of connection issues.
- 3. Standby generators, being very fast starting, are particularly suitable for addressing many of the reliability issues raised in the forum.
- 4. Since these generators are distributed, they can help address reliability issues not only in terms of the system-level supply:demand balance, but also in the transmission and distribution networks.
- 5. Embedded generation does not have to be contracted specially to help with reserve shortfalls. It simply needs to be allowed to respond to the market's existing price signals.

Given that the primary purpose of most of these embedded generators is to provide emergency power to local loads during power cuts, such generators cannot easily have dedicated network connections – they must share the connection with the local load.

To expose the generators to the correct pricing signals, the gross output of the generator must be made available to the market, independently of the local load, which is much less likely to be price responsive. This could be done through a special arrangement with the site's retailer, but this would provide an unnecessary opportunity for retailer lock-in.

NEMMCO has the processes in place for such generators to be metered separately through subtractive metering (usually through the establishment of a minimal embedded network), but some LNSPs are opposed to the very idea of embedded networks, and hence find the concept of subtractive metering difficult.

- 6. To the extent that system peaks and local network peaks coincide, by reacting to price signals, embedded market generation provides free help to the networks.
- 7. The marginal cost to run many of these generators is high, so it only makes sense to use them during extreme peaks. The \$300/MWh administered price cap is unhelpful: as soon as it is imposed, all such embedded generation (and

price-based demand side response) becomes unprofitable and hence is stopped. We saw this happen this year.

8. When the capacity of market, non-scheduled embedded generation in an area has become significant, NEMMCO may wish to issue directions or instructions to some of it. Present rules would not allow any compensation to be paid, which would be unfair. Simply including such facilities in existing compensation arrangements would not suffice to fix this, as the complexity of the arrangements, and (particularly) the threshold amounts would leave such facilities out of pocket by amounts which, while trivial from a market perspective, would be significant to them.

We are happy to provide further information on embedded generation issues if that would be helpful.

Yours faithfully,

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