TasNetworks
Delivering your power

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Ms Victoria Mollard
Director
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Ms Mollard

RE Distribution market model – Approach paper

Thank you for the opportunity to make a submission to the Distribution Market Model Approach Paper released by the Australian Energy Market Commission (**AEMC**) on 1 December 2016.

In response to this paper we would like to raise several issues that we believe should be considered to ensure the success of any changes to the regulatory framework.

The first is the need for simplicity and flexibility. The participants in the potential markets are likely to be residential customers, not the traditional market participants. Trying to take the current transmission based market model and apply it to a distribution network will create significant challenges. There will be issues of information asymmetry, different risk profiles and lower levels of technical knowledge. These will need to be managed carefully to ensure the market delivers the intended outcome of the proposed reform without undue administrative burden.

One of the drivers for this work, as noted by the AEMC, is the rapid rate of technological innovation. This change requires any framework developed to be flexible. It will need to be able to adjust to innovation. The cost to manage and change the systems required to deliver the desired outcome must be kept low to avoid these becoming a barrier to change.

Currently TasNetworks is responsible for system security and safety in the Tasmanian distribution network. It is paramount that this is maintained. The distribution market model must have the appropriate mechanisms so that system security and safety is not jeopardised. Questions of who controls network access and how the network service provider (**NSP**) will manage risk if another party is determining access arrangements arise. Given these issues, we do not support a more centralised model (refer question 5) since the

operation of the distribution network needs careful management based on significant local knowledge and experience.

Distribution networks are far more dynamic that transmission networks. A network constraint can be very transient in the meshed parts of the network while being more permanent in the more radial parts of the network in rural areas. Operational decisions are less based on modelling and more on operational experience and customer priorities. Decisions often have to be made with poor data on the network. A trade-off may need to be made between designing a market to be robust enough to operate when there is potentially limited information whilst delivering outcomes that benefit all consumers.

Outages, whether planned or unplanned are frequent and thus market operation is constantly changing. The market design needs to be robust enough to survive this environment – noting the need for simplicity highlighted above. This will be a major challenge in developing an appropriate market design.

As noted in the paper there are a range of technical impacts of distributed energy resources. We agree with the list set out in sections 4.1 to 4.8. We would also add that there will be added challenges that arise from the controllability (or lack thereof) of the additional elements being added to the network. With many of these being private equipment, we question how service performance targets/schemes/reporting will change. Managing network access for distributed energy resources will be critical and we believe the local NSP should manage an approval process prior to connection.

There are other challenges.

When procuring services from the market to resolve a network issue there is a real risk that the services may not respond as expected when they are needed[1]. Currently that risk would be managed either through the network support agreement between the provider of the service and the network, or through other means under the network's control[2]. This risk needs to be explicitly considered in the market design. The service not responding as expected could cause safety risk or equipment damage. This may be a significant cost to the NSP and thus the community.

When considering the ring-fencing requirements, it is important to consider the case where the market is incapable of delivering an otherwise economic service to resolve a network issue. This, for instance, might occur when there are no providers operating in the area where the service is required. This is quite likely to occur when an identified network issue needs resolution in a relatively short timeframe. The possibility that the NSP could be excluded from providing the solution itself due to ring-fencing obligations could lead to perverse outcomes. TasNetworks feels this risk is higher in small markets such as Tasmania.

Customer protections should be explicitly considered in the market design. The means of operation of these new services could be difficult for customers to understand. This means they may not be fully educated on the impact of the decisions they are making when they are making them. Similarly customers who choose not to participate should not be disadvantaged through that choice.

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[1] Noting that many of these services will not be delivered by technical experts.

[2] For example by the provision of fall back options at the cost to the NSP such as diesel generation or load shedding.

We would also like to raise a couple of observations.

We note that photovoltaic systems that are AS4777-2:2015 compatible will meet part of the definition of "smart energy equipment" in that they will automatically reduce output in response to system over frequency, i.e. they are not 100 per cent passive. We were concerned there may have been some thought that all photovoltaic systems were passive.

We also suggest that the term "distributed energy system" more accurately reflects the type of equipment being discussed since the word "resource" may lead readers to assume a source of supply rather than including the load component.

Section 4.5 raises the issue of reactive power. This section assumes the "distributed energy resource" is consuming active power. High penetration levels of distributed energy generation (supplying active power) tend to cause higher voltage levels in low voltage distribution circuits. Therefore under these high levels of distributed energy supply there is a requirement for the grid to absorb rather than supply reactive power.

If you have any questions in relation to the issues raised please contact Tim Astley on (03) 6271 6151 or via email Tim.Astley@tasnetworks.com.au.

Yours sincerely

Tim Astley

Acting Leader Regulation

Select the letter salutation ("Yours sincerely" if addressed to a name, "Yours faithfully" if addressed to sir/madam.