



Tasmanian Renewable Energy Alliance

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TREA response to AEMC's Distribution Market Model draft report

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TREA welcomes the AEMC's acknowledgement that distributed energy resources (DER) will play an important role in the evolution of the electricity system in Australia.

We also welcome the focus on market based signals that encourage and reward the implementation of DER in ways which benefit the electricity network as well as the consumers who invest in DER.

"The Commission considers that the installation, connection, optimisation and control of distributed energy resources should, except for system security and safety reasons, be determined through market-based signals." Draft report, p.63

However we believe the Draft Report fails to adequately recognise both the potential scale of the coming transition, and the urgency for action.

The Draft Report states that:

" Nevertheless, we cannot know for certain what the future will look like. It may involve high levels of distributed energy resources. Alternatively, technology developments and climate change policies may result in a future with more use of grid-scale renewable generation and storage, rather than at consumer premises." Draft Report p.ii

We do not accept that this is an either/or situation between centralised and decentralised renewable energy investment, both will grow rapidly. Growth in centralised renewable energy generation will be driven by the need to replace Australia's ageing fleet of coal fired power stations, the rapidly improving economics of large scale wind and solar developments and the need for urgent action to reduce greenhouse gas emissions. Alongside this centralised development, distributed investment will be driven by rapidly falling costs of solar PV and batteries and the increasing availability of electric vehicles. In addition, as demonstrated by Australia's global leadership in distributed solar, consumers are keen to invest in new technology which gives them control over energy costs and a sense of greater self-reliance.

While it is a truism that we cannot know for certain what the future will look like, even incumbent organisations such as ENA are projecting a profound transformation:

"By 2050, it is estimated that customers or their agents - not utilities - will determine how over \$200 billion in system expenditure is spent and millions of customer owned generators will supply 30-45% of Australia's electricity needs." {ENA 2017 p.i}

ENA is projecting a Transformed Electricity System by 2050 in which:

Networks pay distributed energy resources customers over \$2.5 billion per annum for grid support services by 2050

\$16 billion in network infrastructure investment is avoided by orchestration of distributed energy resources {ENA 2017 p.iv}

One aspect of the coming transition which is consistently underestimated is the role of the distributed storage capability of electric vehicles (EVs). Next generation EVs will typically have 40-60 kWh of storage, a much greater capacity than is likely to be installed in grid connected solar PV systems for the foreseeable future. Even with the extremely modest prediction¹ of 255,000 EVs in Australia by 2030 (Draft Report p.11) this would result in around 12 GWh of storage, double the storage associated with solar PV projected for 2035/36 in the Draft Report.

While this energy stored in EVs is not fully available for provision of network services, it will be connected to the grid for most of the time. Appropriate incentives combined with aggregation service providers could utilise this capacity to provide services including catering to peak demand and providing fast response ancillary services without compromising the customer requirement for reliable re-charging.

As prices continue to fall, the combined economics of solar PV, fixed domestic storage and EVs are likely to provide a strong incentive for consumers to become much more energy self-sufficient. UBS Global Research modelling “suggests a payback time as low as 6-8 years for a combined EV + solar + battery investment by 2020 – unsubsidised.” {UBS2014, p1}

The challenge for electricity networks is to offer consumers a value proposition that encourages them to remain connected to the grid and to provide grid services, rather than to be totally self-sufficient.

In this context it is disappointing that the AEMC has chosen to send a negative message about the value of DER by raising the prospect of deletion of clause 6.1.4 of the NER. This will be widely perceived as intending to discourage distributed generation since large generators are not charged for feeding energy into the network.

The argument that solar customers as a class cost networks more than non-solar customers was tested when SA Power Networks (SAPN) proposed a \$100/year additional charge for solar customers. The AER found that:

“We are not satisfied that SA Power Networks has demonstrated that pv and non-pv retail customers have sufficiently dissimilar load profiles. A pv specific tariff of the type proposed by SA Power Networks would therefore constitute less favourable treatment of retail customers with micro-generation facilities in contravention of clause 6.18.4(a)(3).” Quoted in {Orme 2015}

The existing 1.6m households in Australia who have already installed solar PV have demonstrated by their own investment that they are keen adopters of new technology. These households are likely to be early adopters of new technology including grid connected batteries, demand management and electric vehicles. It is a matter of urgency that new arrangements are facilitated to offer these households an incentive to remain connected to the grid and invest in new technology that can offer benefits to the efficient operation of the grid and hence to reducing the cost for all consumers.

Jack Gilding
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¹ This is only 1.4% of the 2015 figure of 18,000,000 motor vehicle registrations in Australia.

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