SUBMISSION TO

The Network Value of Distributed Generation

Draft Report

December 2016

The Alternative Technology Association (ATA) welcomes the opportunity to respond to the Essential Services Commission's *Distributed Generation Inquiry*'s Stage 2 Draft Report on the network value of distributed generation.

Founded 36 years ago, the ATA is a national, not-for-profit organisation whose 6,000 members are (mostly residential) energy consumers. About 2,500 of our members are Victorian.

Our extensive experience in energy policy and markets informs our advocacy and research which, amplified by our close collaboration with fellow members of the National Consumer Roundtable on Energy, makes the ATA an important voice for energy consumers Australia-wide.

ATA has a uniquely twofold perspective as a consumer advocate. With the continuing support of the Energy Consumers Australia (and formerly the Consumer Advocacy Panel) we represent all small energy consumers in advocacy that seeks to improve energy affordability and the structure and operation of the National Energy Market (NEM). Additionally, we speak with authority on behalf of the growing portion of the consumer base that has an interest in demand-side participation.

We thank the ESC for preparing a comprehensive and thoughtful report, and for the excellent stakeholder forums held during the course of the project, which greatly assisted our participation and improved our capacity to make a submission.

Overview

The ATA commends the ESC on the approach taken in investigating the energy and network value of distributed generation. In seeking to identify and quantify a range of potential values, the Commission has set a high standard for other jurisdictions' to follow in determining value and approaches to remuneration.

We are broadly supportive of the report's recommendations. This submission is primarily focused on the proposed grid services market. We also address some other relevant issues.

We have also contributed to and endorsed the submission to this report by *Backroad Connections*. This submission is to give some more detail on our views.

A grid services market

The ATA agrees with the Commission that the way the network value of distributed generation manifests is not suited to remuneration via a feed-in tariff. Recognising this value as a grid service, and giving small-scale distributed generation an entitlement to be remunerated for

those services (like larger-scale grid services are) is a proactive and positive move that we welcome.

As noted in the draft report, the type of grid services provided by distributed generation can also be provided by acute or ongoing demand management (such as demand responses and energy efficiency) and controllable storage, which is expected to become more common for small users in the near future.

Small user participation in the grid services market

We foresee two ways grid services may be transacted with small end users:

- Primarily: medium-scale – network businesses transacting with aggregators that offer demand or generation response from a fleet of individual systems; and
- Less likely: small-scale – network businesses transacting with individual small consumers for a demand or generation response from an individual system; and

An effective grid services market will need to be able to facilitate both these types of transactions.

We also envisage two primary ways end users will enter the grid services market:

- Provision of services through passive or active use of an existing asset; and
- Installation of new equipment with a specific aim of selling grid services (exclusively or in addition to private use).

We expect that over time, active deployment of grid services – using smart storage, smart inverters, and energy management systems with distributed generation, either on an individual basis or via a third party aggregator – will be the predominant way small end users will participate in the grid services market. However we note that in some areas, the mere presence of distributed generation provides a quantifiable grid service – and, as discussed during stakeholder workshops, future decisions made by owners of these small generators could see them removed from the grid, leading to a need for network augmentation or purchase of additional grid services. Some way of remunerating existing distributed generation where it is already providing an essential grid service should be explored.

Managing a monopsony market

With one purchaser and multiple suppliers, a grid services market will need to be structured and regulated to offset both the lack of competition inherent in a monopsony market, and the information imbalance arising from distributors' unique access to specific and granular data on the state of their own grids.

Because the need for grid services (and the types of services needed) is locationally, situationally, and seasonally specific, it is likely that the value of remuneration for services will vary significantly. This may mitigate against using scheduled prices to offset the lack of competition. But the methodology distribution businesses use to set prices for grid services should be transparent, in accordance with guidelines established by the Commission, and subject to regulatory oversight.

The *System Limitation Report* that distributors will be required to publish annually (as an outcome of the AEMC's decision on the Local Generation Network Credits rule change) provides a solid starting point for the transparent information provision necessary to enable small user

participation in a grid services market. As proposed, the *System Limitation Report* should provide sufficient information for grid support services aggregators to work with. Where grid services from individual small users are viable, information better targeted at a non-expert audience will be necessary.

Types of grid services

We agree that reducing unserved energy and relieving network congestion are the grid services that can most readily and materially be delivered by small users' deployment of distributed generators (along with demand management and controllable storage, as noted in the report and discussed above). However we feel the future inclusion of the grid services deemed not material in the draft report – ancillary services, network support, voltage regulation and power quality – should be considered, because:

- as the grid's generation mix continues to diversify, these services will be required more often and on a larger scale;
- as technology continues to evolve, household-scale energy equipment will become more powerful and capable; and
- as aggregation of small loads and generators becomes more practicable, third party aggregators will be more able to provide grid services at a greater scale and with greater firmness than is currently possible.

Principles for a grid services market

We propose the following principles to underpin the grid services market.

- Distributed generators should not unreasonably be prevented from connecting to the grid
- Distributed generators connected to the grid should not be required to provide grid services
- Grid services provided by distributed generators should be appropriately and fairly remunerated in accordance with the value of the service they provide
    - The remunerative value of grid services should be determined transparently, in accordance with established guidelines, and subject to regulatory oversight
- The grid services market should be technology neutral
- The grid services market should be designed to allow participation of:
    - individual small generators where practicable
    - aggregated small loads or generators
    - aggregated or individual small-scale demand responses (including energy efficiency) where practicable
- Wherever practicable, equipment delivering grid services should be user-controlled
- For grid services that are required to be dispatchable (either by the network business purchasing them or a third party aggregator selling them), households providing them must be:
    - provided with clear upfront information about the implications and the parameters

- be required to opt in with explicit informed consent
- be permitted to opt out at any time.

Supporting the development of a grid services market

The appearance of innovative services such as *Reposit*'s storage arbitrage product shows that many small consumers are interested in offering their own energy resources for other purposes, for appropriate remuneration – even when the market rules necessary to support it don't exist, and workarounds are needed. Participating in a grid services market will be appealing to many Victorian households and small businesses.

Victoria's fleet of AMI meters has enabled the comprehensive valuation of the value of distributed generation, and can provide all the information consumers need to figure out if they can materially participate in a grid services market and in what way. However, to most readily participate, access to meter data needs to be guaranteed not just for end users, but for third parties authorised by end users in order to provide information, energy management, or aggregation services.

We are already cognisant of the difficulties third parties have in accessing meter data on their customers' behalf. The ATA has been working on this issue with other consumer advocacy organisations and an energy services business (*Energy Tailors*) for more than twelve months, and still only two distribution businesses have provision for third party access. This situation may be even more difficult if metering contestability is introduced in Victoria – so far it is not even clear that distributors will have reasonable access to meter data for network management and monitoring purposes. We urge the Commission to advise the Department of Environment, Land, Water and Planning that the transition to metering contestability in Victoria must include development of a framework to support low-cost access to meter data for distribution business and third parties operating on behalf of end users.

Other benefits of distributed generation

As noted above, we expect that some of the potential network contributions deemed immaterial or not readily attributable to distributed generation – ancillary services, network support, voltage regulation and power quality – may be more material or practicable in the near future, as technology and the grid's needs change. These should periodically be re-examined for possible future inclusion in the grid services market. We also note that the draft report suggests that distributed generation may improve the cyclic rating of transformers in specific locations. This should be further explored – even if it is not sufficiently material for inclusion in a grid services market, information about the benefits of distributed generation to the grid adds important context to debates about whether or not small consumers without distributed generation are subsidising those with it.

We also note that the avoided transmission use-of-system costs of distributed generation are significant,[1] but not realised with respect to generators of less than 5 MW. We support the principle that avoided TUoS costs should not be charged to customers consuming electricity fed

[1] This is explored more fuly in the submission to this draft report by Backroad Connections, which the ATA endorsed

into the distribution network irrespective of the size of the generator; and encourage the Commission to pursue this principle in any relevant change process that it participates in.

Conclusion

Thank you for the opportunity to respond to the *Distributed Generation Inquiry*'s Stage 2 Draft Report on the network value of distributed generation. We also appreciate the Commission's proactive engagement through a number of stakeholder forums held over the course of the project – our attendance at these forums helped inform our submission.

If you wish to discuss anything raised in this submission further, please contact Dean Lombard. Senior Energy Analyst, at