



Clean Energy Council submission to the Essential Services Commission's

Distributed Generation Inquiry Draft Report The Network Value of Distributed Generation

Executive Summary

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Essential Services Commission's (ESC's) draft report on the network value of distributed generation.

CEC warmly welcomes the analysis published by the ESC, which confirms that:

- distributed generation delivers network value,
- the opportunities for distributed generation to provide network value will grow significantly with the introduction of energy storage, smart inverters and smart energy control systems, and
- providers of grid support services should be rewarded for the services they provide.

CEC recommends the following principles be supported and frameworks for their implementation in legislation or regulations be developed in the next stage of the ESC's enquiry:

- The regulatory framework for a market for grid services must address the issue of power imbalance in a market with one (or very few) buyers and many sellers,
- Victorian network businesses should be prevented from using pre-conditions for grid connection to:
 - unreasonably require the provision of grid support services without fair payment, or
 - as a barrier to participation by distributed generators in a grid services market.
- Transmission Use of System (TUoS) charges should not be levied on electricity fed into the distribution network.

In this submission we provide further detail on these principles and respond to the specific questions raised in the discussion paper.

We would be very happy to discuss these issues in further detail with the ESC. We look forward to contributing further to this review.

1. Providers of grid support services should be rewarded for the services they provide

We are pleased to note that the ESC draft report assumes that providers of grid services should be rewarded for the services they provide. The CEC calls on the Victorian Government to articulate this principle as a matter of government policy.

2. Network businesses should be prevented from unreasonably requiring the provision of grid support services (without fair payment) as a pre-condition for grid connection

The importance of grid support services market will increase in future. The market will likely have only a few buyers, and possibly only one buyer – the distribution business. Distribution businesses could also be providers of grid services. There are clearly risks to competition in a monopsony market and particularly where the sole purchaser can also be a supplier.

The AEMC discussion paper on the regulatory implications of energy storage recommended that the technical requirements that apply to storage behind a customer's meter should be investigated to assess their appropriateness and whether there is potential for standardisation. It suggested that reviews should in future consider:

- the different requirements being applied to behind-the-meter storage by distributors,
- whether the technical requirements, including AS 4777, give network businesses too much control over what is connected to their networks, both in terms of:
 - (i) specification of the equipment and technical performance; and
 - (ii) remote control.

These would also be appropriate questions for consideration by the Essential Services Commission and the Victorian Government in the context of this review and when it undertakes its review of Electricity Industry Guidelines in 2017.

We note that COAG Energy Council agreed on 19 August 2016 to submit a rule change request to the Australian Energy Market Commission (AEMC) on the service classification framework and service classification definitions. We rule change request is a welcome and timely move, which should clarify the application of competition principles that would underpin the development of a network services market.

3. Distributed generators should not be prevented from participating in a grid services market due to pre-conditions for grid connection

In the past 'non-export' has been made a pre-condition for connection to some distribution networks. Grid connection requirements are a rapidly evolving area and will continue to evolve as the capabilities of smart inverters (eg. with partial export) are utilised. Clearly, requirements such as 'zero export' would limit participation by distributed generators in a grid services market. It is highly desirable for Victorian distribution businesses to avoid the use of options such as 'zero export'. However, it is worth noting that we are not aware of any Victorian distribution businesses considering a 'zero export' requirement for grid connection and we would expect the need for grid connection requirements such as 'zero export' to lessen in future as the penetration of smart inverters and energy storage increases.

4. Transmission Use of System (TUoS) charges should not be levied on electricity fed into the distribution network

We note the effect of the implementation of Chapter 5A of the National Energy Rules (NER) on the application of the Electricity Industry Guideline 15. We note also that the provision in Guideline 15 requiring distributors to pass through the value of avoided TUoS charges due to the use of distributed generation was not linked to a requirement on retailers to pass the TUoS savings on to distributed generators.

CEC supports the principle that Transmission Use of System (TUoS) charges should not be paid on electricity that is fed into the distribution network. The 2017 review of the Electricity Industry Guidelines could be an opportunity to explore whether and how to put that principle into effect, taking account of the implications of NER Chapter 5A and the recent decision on the LNGC rule change proposal.

QUESTIONS FOR RESPONSE

Market for grid services

1. What are the appropriate means to measure the effectiveness of the market for grid services in Victoria?

An effective market for grid services in Victoria would have the following measurable characteristics:

- It would be a competitive market, with a large number of service providers
- There would be transparency in the market, so that volumes and prices are known
- Payment for grid services would be cost-and-benefit-reflective
- The market would be conducted within a regulatory framework that addresses issues of market power that can arise in a market with many sellers and one buyer (or few buyers)

One indicator of an effective market would be the extent to which it is utilised. If / when a market for grid services is established it will be important for a regulator to collect statistics on the volume and value of grid services contracted through the new market mechanism.

2. What are the appropriate principles to guide the ongoing development of the market for grid services in Victoria, including any regulatory interventions that might be considered?

The Victorian Government should state as a matter of policy that providers of grid services should be rewarded for the services they provide.

The regulatory framework for a market for grid services must address the issue of power imbalance in a market with one (or very few) buyers and many sellers. This is particularly so given the power that network businesses have to require pre-conditions for connection of distributed generation to the grid. Victorian network business should be prevented from using pre-conditions for grid connection:

- To unreasonably require the provision of grid support services (without fair payment), or
- As a barrier to participation by distributed generators in a grid services market.

3. What opportunities or circumstances exist in Victoria to support the emergence of a well-functioning market for grid services?

There are exciting opportunities ahead with the increased uptake of solar, battery storage, smart inverters, cloud interfaced appliances and smart energy management systems. Technology capabilities will continue to evolve, and availability and costs will continue to improve.

The presence of smart meters in almost 100% of households and businesses provides Victoria with some unique opportunities. To ensure the efficient and effective use of the infrastructure that has already been installed and paid for by Victorian customers, the Victorian government should ensure that smart meter data is transparent and accessible.

The state government should mandate open access to real-time in-home data feed from smart meters, ideally both wireless and cable options. This can be used to provide data to energy managers to support grid services. New smart meters should comply with updated standards, e.g. provide an RJ45 socket for access to live data.

4. What are the practical measures that might be considered to enable small-scale grid service providers to participate in the market for grid services, to the extent they are capable of delivering value in that market?

To enable aggregation businesses, electricity retailers and other energy service providers to make competitive offers into a future grid services market it is vital that they have access to regularly updated data on substations, where upgrades are needed and the value of new firm distributed generation capacity in areas due for upgrades.

We note that the AEMC's final determination on the Local Grid Network Credits rule change requires distribution businesses to publish an annual 'system limitation report' that will include information on:

- the name or identifier and location of network assets where a system limitation or projected system limitation has been identified during the forward planning period;
- the estimated timing of the system limitation or projected system limitation;
- the proposed solution to remedy the system limitation;
- the estimated capital or operating costs of the proposed solution; and
- the amount by which peak demand at the location of the system limitation or projected system limitation would need to be reduced in order to defer the proposed solution, and the dollar value to the DNSP of each year of deferral.

The requirement for distribution businesses to publish a 'system limitation report' is a welcome improvement. In addition, better capability by distribution businesses to monitor the low voltage network and better access to that information will be needed in order to target programs and investments where they will be most effective. Distribution businesses need to be able to provide sufficiently detailed information in relation to the emerging constraints and undertake constructive further engagement with potential providers to refine potential solutions.

Regular publication of 'heat maps' based on data of grid voltage and frequency for every smart meter in the state would indicate where the grid does not meet Australian Standards. These areas indicate where grid services can offer value.

There are mixed views within industry regarding whether there is a need at this stage for a platform to facilitate buying and selling of grid services. Given that areas of constraint are going to have their own particular characteristics, a bespoke (less standardised) bulletin/response method may be more appropriate at this stage. Clearly, the key component is the establishment of incentive mechanisms upon which a platform for trading would rely.

We note that the Federal Government, through the Australian Renewable Energy Agency (ARENA) is considering providing support for pilot programs to trial platforms for grid services. This is a practical next step, especially as technology is evolving and the capabilities of demand response programs are still being tested and understood. Following pilot programs there may be a point in the future where a more standardised market can emerge.

It would also be helpful for the Victorian government to support a nationally consistent process for grid connection applications, including guidelines for when 'zero export' or 'limited export' devices may be required.

Environmental and social value of distributed generation electricity

5. Is there additional data and analyses that the Commission should consider in assessing the environmental and social benefits of distributed generation in respect of electricity networks, specifically in terms of identifying, quantifying and valuing those benefits of distributed generation?

Yes. ESC (or someone else in the Victorian government) should consider the extent to which government programs are skewing bushfire mitigation investment away from distributed generation, which could provide solutions more cheaply, safely and reliably. Is the money being spent in the best way? For example, placing power lines underground might not always be the best solution. It would be useful to identify where it would make more sense to use distributed generation (either at the household level or multiple households in a stand-alone grid).