ESSENTIAL SERVICES COMMISSION INQUIRY INTO THE TRUE VALUE OF DISTRIBUTED GENERATION

Response to the Stage 2 Draft Report

12 December 2016

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Introduction

Energy Networks Australia is the new name for the national industry body representing businesses operating Australia's electricity transmission and distribution and gas distribution networks. Previously known as the Energy Networks Association, member businesses of Energy Networks Australia provide energy to virtually every household and business in Australia.

Energy Networks Australia welcomes the opportunity to make a brief submission to the Essential Services Commission's initial findings into the network value of distributed generation.

Energy Networks Australia noted in response to the Commission's initiation discussion paper, that the efficient deployment of distributed generation within networks can have material benefits to both consumers and energy networks under the right circumstances. The promotion of efficient integration of distributed generation is a key strategic priority for the industry as it goes through significant transformation over the next decade.

Electricity Network Transformation Roadmap

The transformation of the electricity sector is largely driven by customers embracing new technologies to a point where, in the future energy networks will be platforms that help match supply and demand for millions of customer owned generators and energy storage systems. However, without a well planned approach to navigate this transformation, Australia's energy system will be unable to efficiently and securely integrate the diverse technologies, large scale renewable energy sources and customer owned distributed energy resources.

For this reason, Energy Networks Australia, partnered with Australia's National Science agency CSIRO to develop an integrated set of milestones and actions that are necessary for an efficient and timely transformation. The Electricity Network Transformation Roadmap (Roadmap) is supported by expert analyses, scenario analyses and quantitative modelling and describes a set of "no regrets" actions aimed directly at a customer oriented transformation of the sector.

Linkage to True Value Inquiry

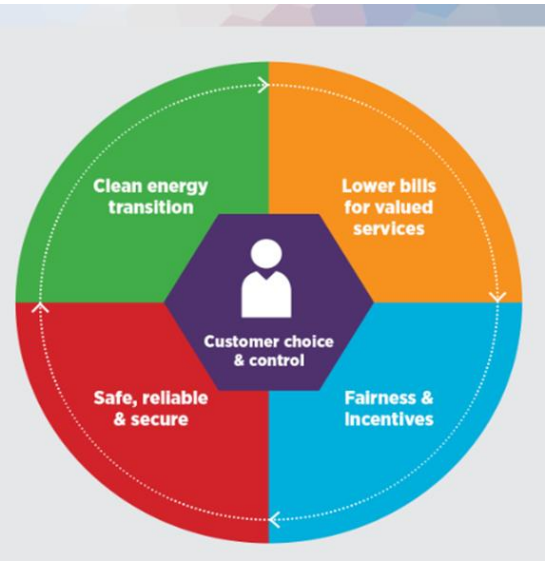
Recognising the need for an integrated set of actions

The roadmap identifies 5 key areas of focus:

- Customer oriented electricity
- Power System Security
- Carbon Abatement
- Incentives and Network Regulation
- Intelligent Network and Markets

The above 5 domains function as an ecosystem of societal, technological, economic and regulatory sub-systems operating together to deliver the optimal balanced scorecard options illustrated below:

Figure 1 Balanced Scorecard (Roadmap)



The roadmap highlights the concept of interaction between all five domains to deliver optimal outcomes for the balanced scorecard:

The full development of a customer oriented network (Section 3) will require the development of advanced network valuation tools (section 10) as well as a network optimisation market (NOM) where distributed energy resources services can be procured (Section 11). Similarly, the incentives that encourage effective distributed energy resources participation in this market requires a strategic focus on pricing and incentives (Section 7) that is supported by a range of regulatory considerations (Section 8).[1]

Even within each domain, a series of inter-related milestones work together to deliver balanced scorecard outcomes.

In relation to pricing and incentives the roadmap notes that an efficient pricing framework that also allows networks to buy grid services from customers with distributed energy resources could replace the need for $16.2 billion in network investment by 2050, while also avoiding future cross subsidies, and lowering average network bills by around 30% compared to today.

However, these benefits cannot be realised without:

- Fundamental reform to tariff assignment policies.
- Aggressive smart meter penetration targets
- Refinement of existing tariffs to ensure they are resilient to new technologies
- Introducing new pricing arrangements to reflect both new and differentiated services that are provided by the network
- Development of frameworks for the procurement of operational access to dynamic and locational supply of distributed energy resources
- Open trials of procurement frameworks to test viability of different operational platforms

Opportunity for collaboration

The Commission's initial findings present an exciting opportunity to explore and collaborate on some, or all of these integrated actions.

The Commission rightly notes that Victoria is well advanced compared to other states in terms of having smart meter functionality that will advance development of future products. This will provide opportunity for Victorian businesses to develop and trial important elements of the Roadmap in a way that contributes to integrated transformation on a national scale

In the foundation stage of development for the roadmap (represented by the period to 2022), there appears to be substantial opportunities to trial, pilot and develop initiatives in Victoria through members businesses in the following areas:

- Protocols to address management and exchange of information
- Technological and commercial solutions for network planning models and DER services valuation methods
- Development of standards and protocols for distributed grid architecture
- Network operation mechanisms and tools

Member businesses will also be developing basic Network Optimisation functions over this period through trials and pilots in various areas.

Importance of a national focus

One of the central benefits from the development of roadmap jointly between the National Science agency and the National body representing the views of energy network

[1] Electricity Network Transformation Roadmap Concept Report, p3

service providers is that it allows for a staged development of new markets at a national scale.

It will be vital that any collaboration activity keep in mind the need for sector wide reform, particularly when there are different technology advancements between jurisdictions.

Response to Findings

Findings regarding feed-in-tariff arrangements

Energy Networks Australia agrees with the Commission's findings that:

- The value of distributed generation for the network varies widely between locations, across times, and between years.
- a broad-based feed-in tariff (FiT) is not an appropriate remuneration tool for the value of distributed generation that customers may provide.

These findings are consistent with evidence presented in submissions raised by member businesses.

Importantly, broad-based credit schemes are usually subsidised through increases in a broad-based network charge. Therefore, unless it can be demonstrated that the level of subsidy is lower than the future network costs avoided, there is likely to be a cost transfer between those who benefit from the scheme and those who do not.

Dynamic, locational signals are less likely to create distortions in cost transfers between different types of customers. They are also likely to provide a better financial incentive for customers where the value of network deferral is high.

Findings in regard to regulatory frameworks

The Commission also finds that considerations regarding the value of DER should be advance through a national regulatory framework, given the issue is far broader than Victoria. This is also consistent with industry views.

The Commission's initial view appears to be that the regulatory framework already incentivises networks to apportion expenditure between traditional network upgrade projects and non-network solutions. This appears consistent with previous AEMC views in recent Rule change requests. Nevertheless, the Commission does argue the framework is not necessarily geared towards providing opportunities for small-scale grid service providers, such as distributed generators, to participate in the market for grid services.

However, because most of these small scale providers are "behind the meter" it is important to weigh up incentives offered under network support as well a general pricing frameworks for standard network services.

A "market" for grid services, allowing participation by small-scale grid provider – either individually or through other market players is likely to be part of the transformation process over the next decade. However, such a market is unlikely to develop without changes and reform to general pricing arrangements occurring first.

This is because there is a dilution of benefits from the market signals in the grid services market, caused by ineffective pricing structures in the broad-based tariff charging arrangements. In effect the separate incentives under the grid services market and the broad-based tariff are likely to compete and counteract with each other in different parts of the network over time.

In its submission to the AEMC's Draft Determination on Local Generation Network Credits, the Institute of Sustainable Futures argued that the current regulatory framework over incentivises small scale grid service provision.

> *Incentivising DG to be focussed so exclusively behind the meter is likely to widen the gap between those who have access to owning renewable generation and those who don't, and to raise prices for those who don't.*

While behind the meter DG may well reduce network costs, it is likely to reduce revenue recovery to a greater extent, due to the lack of cost reflectivity in network prices[2]

This is why a well-functioning market for grid services requires first an understanding of the value of the benefits and costs of DER to the grid and how this value is allocated to customers

Unfortunately, because the Commission has been constrained by the terms of reference of the Stage 2 Inquiry, which limit the VESC to only investigating and valuing the benefits of DER services, the important broader issues of how current regulatory frameworks affect incentives for distributed generation, and the impact of these incentives on network costs and customers were not able to be properly considered.

Incentives under current pricing regulatory frameworks not considered

To this end, the Commission estimates that solar photovoltaic (PV) systems will provide approximately $3 million in network benefits for Victoria in 2017. However, legacy network tariffs which allocate a large portion of costs to a volume component, means that Victorian customers are benefiting from a lower allocation of network costs which is likely to be much higher than the benefits forecast.

If existing tariff arrangements remain and customers are not transitioned to more efficient pricing arrangements, then the counterfactual scenario in the Roadmap becomes more likely.

As noted above, establishing a grid services market, on its own will not solve this problem. Rather, it is more likely to add to the cross subsides that will exist between customers that own distributed resources and those that don't. Only an integrated set of actions which addresses current inefficiencies in pricing arrangements first, will achieve optimal outcomes for customers.

Other costs not considered

In its submission to the Commission's discussion paper, Energy Networks Australia noted a number of areas where distributed generation creates additional costs for network businesses:

- upfront costs associated with facilitating distributed generation connections
- costs to networks in managing a range of technical issues relating to power quality and security
- additional network augmentation associated with high penetration levels of distributed generation.

In response to the issue of valuing costs the Commission acknowledged its limited scope but suggested in any case that issues of valuing network costs were not necessarily of importance as they were already accounted for.

Based on this understanding of how the costs of connecting distributed generation are dealt with, the Commission will assume, for the purposes of this inquiry, that the costs to distribution businesses of connecting distributed generation and using the network are already accounted for…[3]

Energy Networks Australia is of the view that the regulatory arrangements account for *both* the expected *and* avoided network costs from distributed generation and these regulatory arrangements are not at issue here.

However, the Commission has been tasked with investigating how the regulatory arrangements could be modified to ensure the monetised benefit is reallocated to the owners of distributed generation, without investigating how any monetised costs are allocated.

[2] Institute of Sustainable Futures, Submission to Draft Determination, LGNC, p12

[3] Stage 2 Draft Report, p7

Energy Networks Australia submits that in narrowing the scope to the allocation of monetised benefits, the Commission was unable to address what are quite important issues with regard to the allocation of general network costs through pricing arrangements between customer that do and don't own distributed generation.

Valuation methods

Energy Networks Australia noted some discrepancy between analysis presented by the Commission and those presented by member businesses in previous responses.

It is important to note that any modelling task of this type is likely to be indicative. The Roadmap recognises that an important milestone in the evolution of grid services markets is common approaches and protocols to address the management and exchange of information.

In this instance network businesses are likely to have the necessary access to important data to allow better information to be made available over time.

Consultation paper questions

Energy Networks Australia commends the Electricity Network Transformation Roadmap to the Commission for consideration. As noted above, there is strong alignment between the direction recommended by the Commission and the milestones and actions put forward in the roadmap.

The roadmap answers many of the questions raised by the Commission – or alternatively delivers a process to answer them.

As noted above, Energy Network Australia members in Victoria will play an important role in delivering an integrated National transformation package. There is obvious interest in how stakeholders can partner with these businesses to bring about these essential changes.

It would be worthwhile to further engage with the Commission on such partnering opportunities as the Roadmap report is being prepared.