

15 April 2016

Mr Kim Wood, Principal Commissioner
Solar Feed-In Pricing Inquiry
Queensland Productivity Commission
PO Box 12112
George St QLD 4003

Inquiry into solar feed-in pricing in Queensland

Dear Mr Wood,

The Energy Networks Association welcomes the opportunity to make a submission to the Queensland Productivity Commission (QPC) in response to the Draft Report on Solar Feed-in Pricing released on 10 March 2016.

The ENA is the national industry association representing the businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy to almost every household and business in Australia.

The ENA notes this review is occurring in the context of a series of separate but directly related inquiries that are considering the value of solar generation. The Victorian Essential Services Commission is undertaking an Inquiry into the true value of distributed generation to Victorian consumers. The Australian Energy Market Commission (AEMC) is currently considering a Total Environment Centre Rule Change Request on the introduction of the Local Generation Network Credits under the *National Electricity Rules*. The ENA considers that these reviews present an important opportunity for developing understanding of robust methodology for evaluating the system wide net benefits of embedded generation (and solar generation in particular), and thence to promote an efficient integration into electricity distribution networks.

Electricity networks play an increasing role in integrating renewable sources, embedded generation, and delivering a platform for the suite of distributed energy resources that help deliver outcomes for customers. Transmission and distribution networks are the critical link which allows consumers to connect and share renewable energy, which is only possible through the use of the network.

The ENA notes the clear recognition by the QPC that broad and locationally-undifferentiated feed-in tariffs are not the most efficient mechanisms to deliver community greenhouse abatement objectives, and that this approach is not an appropriate tool to efficiently facilitate savings in network costs. The ENA agrees with the QPC conclusions. These objectives are best targeted through national policy instruments, with any implications for broader outcomes in the National Electricity Market fully assessed upfront.

The ENA notes that there are now a number of mechanisms within the regulatory framework that facilitate integration of non-network solutions if it is cost effective to do so, including mechanisms which provide for compensating embedded generators where network access to services from these sources would be more efficient than augmenting the network. As discussed above, the AEMC is currently considering whether any changes to the existing framework are warranted in its assessment of

the Total Environment Centre Rule Change Request on the introduction of the Local Generation Network Credits. The ENA considers these mechanisms and the rule change process underway represent a more efficient and effective way to target potential benefits of embedded generation.

The ENA provides its comments on the QPC's draft recommendations below.

Draft recommendation 5.1

The Queensland Government should not increase feed-in tariffs to pay solar investors for reducing carbon emissions. Investors already receive a subsidy from the SRES for emissions reduction.

The ENA supports integrated policy initiatives which promote least cost abatement and also avoid the distortion of economic investment signals in technological development and innovation. The ENA agrees with the QPC that national policy instruments are generally better suited to achieve efficient emissions reductions. In December 2015, the Council of Australian Governments (COAG) Energy Council announced the development of a National Energy Productivity Plan with the goal of delivering significant low cost abatement. The COAG Energy Council committed to "...a national, cooperative effort to better integrate energy and climate policy, with a clear focus on ensuring that consumers and industry have access to low cost, reliable energy as Australia moves towards a lower-emissions economy."¹

It should also be recognised that the AEMC recommended in November 2015, that: "*The Energy Council consider tasking jurisdictions to review policies and subsidies that may support particular energy sources over others.*"²

The ENA supports programs and measures that foster and support innovative technologically neutral solutions to emissions reduction. Energy policies which are not technology neutral risk becoming an inefficient distortion in the market which harms the long-term interests of consumers. Such policies can have the effect of weakening incentives for energy efficiency, distorting investment signals to energy users and undermining efficient utilisation of both electricity and gas networks.

Draft recommendation 6.1

The Queensland Government should not increase feed-in tariffs to induce industry development, wholesale market and network infrastructure effects or other social impacts. The evidence suggests that such a policy would come at a net cost overall, and would not be fair.

Customers with solar PV are users of the network and can drive both costs and benefits for networks. In principle, the benefits of solar PV arise if it can defer the need for costly network augmentation. However, the QPC correctly notes that solar PV can defer augmentation only if it reduces the use of distribution network at peak times³ when the network is constrained. In those parts of the network where constraints are not imminent and there is no need for augmentation - there will be no network benefit from solar PV generation.

As correctly identified by the QPC, solar PV may also create additional costs on network businesses. There are upfront costs associated with providing the connection to export electricity to the network, as well as costs to networks in managing a range of technical issues relating to power quality and security.

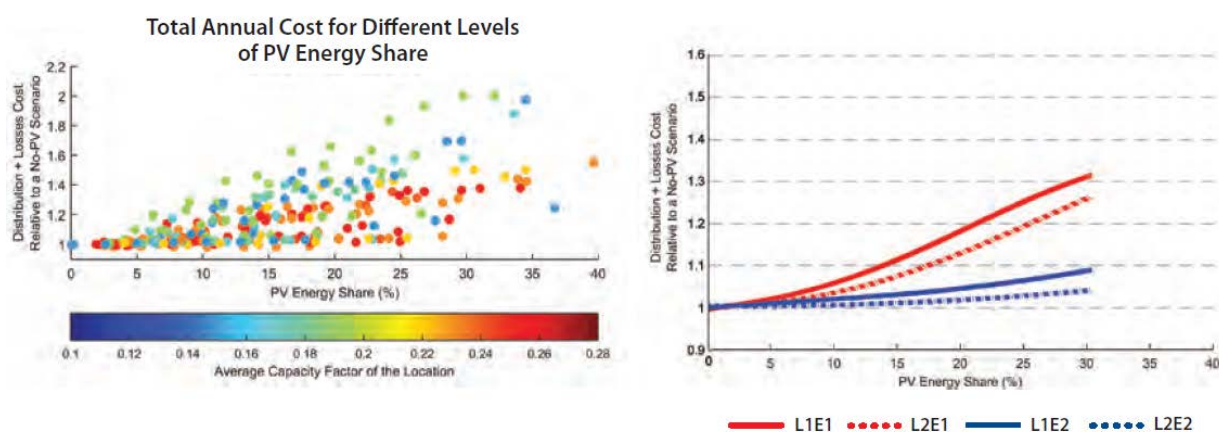
¹ COAG Energy Council (2015), *Meeting Communique* Canberra 4 December 2015

² Australian Energy Market Commission (2015), *Strategic Priorities for Energy Market Development*, p.5.

³ Peak load occurs at different times across the distribution and transmission networks. However with the installation of solar PV to date many parts of the network have evening peaks. Solar PV only provides network benefit where the network peak is during the day and there is a forecast need for network augmentation.

These issues have been well documented in Australian markets. Equally, the recent study by the Massachusetts Institute of Technology (MIT) modelled how different levels of solar PV uptake influence network costs for a sample of networks with diverse characteristics. [Figure 1](#) shows that significant penetration of solar PV can be a relevant cost driver for electricity distribution networks. The report concludes that there is a need for mitigating measures such as cost-reflective pricing to ensure that efficient responses by network users are incentivised. The report also notes that net energy metering and volumetric network tariffs do not contribute to better network management and result in hidden cross-subsidies between customers.

Figure 1 Total Network Cost after the Introduction of PV Generators – MIT study⁴



Source: Massachusetts Institute of Technology, *The future of solar energy*, 2015, p.162.

The ENA agrees with the QPC that a broad, undifferentiated feed-in tariff is not an appropriate tool to facilitate savings in network costs. This is because the value of solar PV generation is time and location specific, e.g. it depends on the location of a constraint in the network. Therefore, broad and locationally-undifferentiated feed-in tariffs will not incentivise efficient investment in solar PV in locations and times where it is of value to networks.

This does not mean that there is no potential role for embedded generation incentives in the future - the efficient investment in, and use of, embedded generation can have material benefits to both consumers and energy networks.

The ENA considers that continuing implementation of network tariff reform is the best way to ensure that network costs associated with demand are recovered more efficiently and the customers are charged a price that reflects the efficient costs of providing the service. Network tariff reform, moreover, will lead to more economically efficient signalling and integration of the full suite of distributed energy resources, including solar PV, other distributed generation, storage, and demand response, into the network. The efficient incorporation of all of these resources on an economically efficient basis will facilitate productivity improvement across the full energy supply chain, delivering lower prices for end customers.

The ENA released a Position Paper *Towards a national approach to electricity network tariff reform* in 2014, which outlines a potential pathway for a series of key complementary steps to achieve the practical implementation of network tariff reform. The ENA notes that jurisdictional limitations on the scope of cost-reflective network pricing would act as a barrier to implementation of network tariff reform.

⁴ Massachusetts Institute of Technology, *The future of solar energy*, 2015, p.162.

The AEMC has made a number of reforms to the regulatory framework for embedded generation in the recent years, (particularly a number of rule changes from the Power of Choice review). There are now a number of mechanisms within the regulatory framework that facilitate integration of non-network solutions if it is cost effective to do so.

These mechanisms include:

- » **Connecting embedded generators rules (Chapters 5 and 5A).** A transparent connection process for large and small embedded generators, with defined timeframes and requirements on the part of the distribution network service providers (DNSP) to disclose relevant information enables the efficient connection of embedded generators across the National Electricity Market.
- » **Avoided Transmission Use of System (TUoS) charges.** DNSPs are required to make payments to embedded generators that reflect the cost component that would have been payable to the transmission network service provider had an (eligible) embedded generator not been connected to the network. This payment may apply to small embedded generators where the applicant is eligible, and seeks to negotiate, its connection under Chapter 5 of the *National Electricity Rules*.
- » **Network support payments.** Network support payments can be and are negotiated between DNSPs and embedded generators to reflect the economic benefits the embedded generator is providing to the DNSP. Under these arrangements, which are in place across a number of jurisdictions, embedded generation can be contracted by a DNSP to address network constraints. As an example, a single Victorian network business already has direct network support arrangements with embedded generators with an installed capacity of around 60 MW.
- » **Network planning and expansion framework.** The current network planning arrangements in the NER require the network businesses to apply the RIT-T and RIT-D before augmenting their networks. These tests require alternatives to be considered to network augmentation, which should include both network and non-network options, including embedded generation.
- » **Demand Management Incentive Scheme (DMIS).** This recently revised mechanism specifically encourages trials of innovative non-network options by DNSPs that benefit customers through reduced costs over time. While the revised DMIS is expected to be developed by 1 December 2016, electricity network businesses already deliver innovative projects under the existing Demand Management Innovation Allowance in accordance with demand management objectives. Innovation allowances are currently included within the network determinations applying to all electricity distribution businesses.
- » **Small generation aggregator framework.** This framework reduces the barriers to small embedded generators participating in the market by enabling them to aggregate and sell their output through a third party (a Market Small Generator Aggregator). This makes it easier for these parties to offer non-network solutions, and for DNSPs to procure those options when it is efficient to do so.

The ENA considers that the current mechanisms contribute to the achievement of the *National Electricity Objective* and foster efficient investment in, and use of, embedded generation. The AEMC is currently considering whether any changes are required to the existing framework, particularly with respect to small-scale embedded generation.

Should you wish to discuss any of these issues further, please feel free to contact either myself (02 6272 1555) or Garth Crawford, Executive Director, Economic Regulation on 02 6272 1507.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'John Bradley', is centered on the page.

John Bradley

Chief Executive Officer