

7 July 2017

Chantelle Bramley  
Senior Director  
Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235



Dear Ms Bramley,

### **Draft report on the Distribution Market Model**

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit law and policy organisation that works for a fair, just and democratic society, empowering citizens, consumers and communities by taking strategic action on public interest issues. The Energy + Water Consumers' Advocacy Program represents the interests of low-income and other residential consumers of electricity, gas and water in New South Wales. PIAC welcomes the opportunity to respond to the AEMC's draft determination on the NSW DNSPs Revenue Smoothing participant derogation.

PIAC supports the AEMC conducting this sort of forward looking work for stakeholders to provide input and help inform the AEMC on emerging issues.

PIAC supports the AEMC's intention to internalise the various costs and benefits of distributed energy resources. PIAC considers that cost-reflective network tariffs are a critical part in realising a major portion of this. While initial steps have been made by network businesses, there is considerably more work to be done to offer more cost-reflective tariffs which consumers are able to understand and efficiently respond to.

Despite this, PIAC considers that removing clause 6.1.4 of the National Electricity Rules is not a suitable solution or a particularly efficient use of resources. The particular clause explicitly prohibits charging customers distribution use of system charges for the export of electricity to the distribution network. Removing it would allow distribution businesses to impose a charge on owners of PV and similar systems to capture the costs and benefits they impose on the network by exporting their generation. However, accurately calculating these costs and benefits and fairly apportioning them to customers is neither a simple nor straightforward exercise and would require a complete departure from postage stamp pricing to avoid unfair outcomes for many consumers (refer to Figure 1). PIAC does not consider it would send effective price signals to consumers and the overall benefits it may allow is unlikely to outweigh the considerable effort involved in developing such a charge.

As shown in Figure 1, the impact of a residential PV system (both the quantum of impact and whether it imposes a cost or benefit) will vary based on the geographical location – from a densely meshed, inner urban network to a weaker, more radial remote area of the network. Further, as shown in Figure 2, the same residential PV system will impose different costs and benefits at different levels of the electricity network – from the street-level through to high-voltage transmission.

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Geographic location	Inner-urban, medium density	Middle suburbs	Towns and outer suburbs	Rural	Remote including SWER lines
	High density Strong grid				Remote End of a weak grid
Impact of residential PV	<ul style="list-style-type: none"> <li>Less physical space means lower PV capacity per customer load</li> <li>Less negative network impact from per PV installation (in terms of voltage, fault levels, etc)</li> <li>Some positive impact from avoided network losses</li> </ul>				<ul style="list-style-type: none"> <li>More physical space means higher PV capacity per customer load</li> <li>More negative network impact from per PV installation (in terms of voltage, fault levels, etc)</li> <li>More positive impact from avoided network losses</li> </ul>

Figure 1 Impact of residential PV on the electricity network by geographic location

Electricity network level	Street-level Low voltage in urban areas, high to low voltage in rural areas	Other distribution network	Zone substation	Sub-transmission network	Transmission network
	Summer peak in late evening Peaks and load profile influenced by households				Peak from midday to afternoon Peaks and load profile influenced by heavy industry and commercial loads
Impact of residential PV	<ul style="list-style-type: none"> <li>Higher negative impact of PV (voltage, fault current, etc)</li> <li>Higher positive impact of avoided network losses</li> <li>Benefit of avoided TUoS</li> </ul>				<ul style="list-style-type: none"> <li>Immaterial negative impact of PV (voltage, fault current, etc)</li> <li>Positive impact of avoided network augmentation</li> </ul>

Figure 2 Impact of residential PV on different levels of the electricity network

If clause 6.1.4 is removed, it is key that all the broader network benefits and costs of distributed energy are passed through to causers. To this end, the rules should clarify that avoided transmission use of service (TUoS) is also passed through to consumers.

PIAC would welcome the opportunity to meet with the AEMC and other stakeholders to discuss these issues in more depth.

Yours sincerely,

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