Brotherhood of St Laurence
Working for an Australia free of poverty

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Submission regarding Value of Distributed Energy Resources Methodology: Consultation Draft Report

The Brotherhood of St. Laurence (BSL) supports the Australian Energy Regulator (AER)'s initiative to develop a guideline for distributors on the value of distributed energy resources (DER), to underpin optimal and consistent investment by networks in increased capacity to accommodate DER.

The BSL recognises that distributed (rooftop) photovoltaics (DPV) have delivered energy savings to households who have installed PV, and also lowered costs for those without, by exerting downward pressure on NEM prices and other mechanisms. We support network investment to accommodate DER where it is necessary and efficient; however, we also recognise that excessive investment has the potential to increase energy prices for DER users and others.

We broadly support the approach of the draft report prepared by CSIRO and Cutler Merz (CM), which is sufficiently granular to provide a useful indication of the relative value of different proposed investments. However, we would like to make the following points:

The capacity for networks to implement dynamic export constraints should be considered directly in the methodology

The CSIRO/CM draft report acknowledges the difference in business as usual (BAU) base case assumptions for networks that include an allowance for inverter tripping in the base case, versus those that don't (so that the presence of voltage constraints imposes much stricter limits on system size and static export limits, rather than just restricting exports through voltage events).

The capacity for dynamic constraints – where networks have the capacity to limit exports in a controlled (and potentially equitable) manner, rather than letting inverters trip completely – is being developed by several distribution networks with high PV penetration.

The implications of this capacity should be considered directly by the methodology. This functionality implies important differences for the base case including: the potential to allow a greater amount of PV, and higher static export limits in areas of the network facing voltage constraints without risking reliability,

and the potential to manage export limitations in an optional and equitable manner during constraint events.

Dynamic constraint functionality provides benefits to consumers, by reducing export limitations and allowing increased access to rooftop PV. Where dynamic constraints are implemented, the volume of additional exports enabled by augmenting low voltage capacity is smaller than for the 'inverter trip' base case, so that the value of additional investment will be lower.

Customer benefits of DER in avoiding retail charges an additional value stream

The paper states that 'electricity bill management' should not be considered as a value stream because 'this would result in double counting of the benefits listed above in wholesale market and network segments, which ultimately transfer to customers as bill benefits'.

However, there are savings accessed by DER consumers that are not accounted for in the methodology as described, and would not be double counted by considering 'electricity bill management'. These largely relate to the efficiency benefit that DER offers in bypassing the need for retail services, which DER customers experience as avoided retail margin costs.

The Victorian Essential Services Commission (ESC) considers the benefit of the retailer's AEMO fees in determining the minimum feed-in tariff. This is a valid value stream delivered to all customers where solar export is increased. Where augmentation allows increased DER capacity to be installed, DER customers will additionally benefit from avoided retailer margins.

BSL supports the inclusion of the value of avoided greenhouse gas emissions

The report acknowledges that most stakeholders, including networks, support the inclusion of the value of avoided greenhouse gas emissions as a value stream but finds that this is beyond the remit of the AER, except where a jurisdiction directs the AER to consider this.

BSL acknowledges the important role of rooftop solar in providing meaningful and affordable carbon reductions for households and businesses.

BSL reiterates that we support the inclusion of the cost of carbon in determining the benefits of DER.

The greenhouse emission reduction potential of DER is a key motivator for households who install DER.[1] It is appropriate that the value consumers place on emissions reduction is taken into account in distribution planning, and AER decisions.

Differentiation between the benefits of additional DER and additional large-scale generation

The methodology applied considers the cost of investment in DPV within the valuation, as well as the cost of any avoided new generation technology.

We feel that there are important considerations that are not captured by equating domestic PV owners with generation businesses in this way.

One value stream that won't be captured is the benefits of avoiding retail charges, discussed separately above.

[1] Best, R., Burke, PJ. and Nishitateno, S. (2019), Understanding the determinants of rooftop solar installation: evidence from household surveys in Australia, CCEP Working Paper 1902, April 2019, Crawford School of Public Policy, The Australian National University.

There are also some factors that are important to consider in enabling consumers to access distributed PV - such as providing equal opportunity for consumers to access solar PV, between early and later adopters – that are beyond the scope of a business-case valuation of DER, but that do constitute a real differentiation between distributed and large scale generation, from the point of view of a consumer.

Where the proposed methodology has the potential to lead to a case that might include the cost of investment in DPV, but that would not deem an equivalent amount of largescale generation to have been avoided, we feel that this type of analysis is not really be representative of the value of DER to the consumer. Where this is a possibility, a more representative approach may draw system boundaries that did not include the cost of investment in generation.

The method's comparison of new rooftop solar capacity vs new large-scale solar capacity does not account for the transmission investment costs associated with the latter

The report does not explicitly mention the additional transmission costs associated with building new large-scale solar generation, or solar with batteries, which is a significant, real value stream for DER. Given that transmission constraints are currently the limiting factor for new large-scale solar, any large-scale investment deferred by additional rooftop solar should be assumed to be associated with the highest transmission upgrade costs.

This is an important factor to consider in comparing the real cost of new rooftop solar to new large-scale solar – especially given that distribution augmentation associated with new rooftop solar will be fully captured by the business case assessment.

If it is not practical to capture all costs associated with building new generation capacity, a more representative method might adjust the system boundaries so that generation investment is not considered.

The paper also raised a number of questions for BSL, regarding the way in which the methodology is intended to be applied:

- Proposed DER investment includes investment that falls into two broad categories: smart grid and functionality upgrades, and traditional augmentation of low voltage assets. What types of investment will the Value of DER methodology apply to?
- Does this methodology provide networks with a consistent method to value non-network solutions to DER capacity augmentation (such as the deployment of distribution-scale batteries to jointly address export-driven voltage constraints, and to reduce evening peak loads) – would this type of non-network solution be able to consider the same value streams?

For further discussion of the issues raised please contact [redacted] who prepared this submission, or [redacted]

Yours sincerely,

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