



## **Clean Energy Council submission to the Essential Services Commission's Proposed Approach to the Inquiry into the True Value of Distributed Generation**

### **Executive Summary**

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Essential Services Commission's proposed approach to the inquiry into the true value of distributed generation.

CEC broadly supports the Commission's proposed approach. Specifically, we welcome:

- The consideration of the total benefits from individuals' investment in distributed generation from a system-wide and community-wide perspective;
- The proposal to firstly consider the energy value of distributed generation and to secondly consider the network value of distributed generation;
- The recognition of the desirability of removing any legislative barriers to a time-varying feed-in tariff; and
- The intention to evaluate the scale and scope of payment support provided to distributed generators by: avoided TUOS payments, avoided DUOS payments, Network Support Payments, the Distribution Network Pricing and Assessment Framework, and the RIT-D.

In addition to the approach proposed in the issues paper, CEC recommends that the Commission consider:

- The feasibility and desirability of a 'critical peak' feed-in tariff payment;
- The public benefits of the reduced bushfire risk arising from avoided poles and wires;
- Other economic, social and environmental benefits of avoided, above-ground poles and wires;
- The reliability and safety benefits of grid independence and islanding capability, especially in fire-prone areas; and
- Independent micro-grids as a form of distributed generation.

## Responses to questions raised in the Issues Paper

### **1. Do you agree with how the Commission is proposing to define true value? If not, why not? Are there other definitions the Commission could use?**

CEC broadly supports how the Commission is proposing to define the value of distributed generation.

We support the inclusion of battery storage in the definition of distributed generation.

We support the consideration of the total benefits from individuals' investment in distributed generation from a system-wide and community-wide perspective. This approach is superior to the approach that has been used in inquiries in other jurisdictions, which have considered only the financial benefits to electricity retailers.

### **2. Do you agree with the Commission's view that this Inquiry is focussed on identifying the public benefit of distributed generation? If not, why not?**

CEC supports the Commission's focus on the public benefit of distributed generation.

We note that the benefits of safety and reliability can have characteristics of private and public benefits. In the context of bushfire safety, for example, we would encourage the Commission to take full account of the public benefits of avoided bushfire risk.

### **3. Do you agree with how the Commission is proposing to define public benefit as it relates to distributed generation?**

The Commission has not captured the full public benefits of distributed generation. There are economic, social and environmental benefits from avoided poles and wires. Consider, for example, a fringe-of-grid location with projected grid congestion. Where distributed generation can delay investment in network augmentation there can be significant economic benefits. Distributed generation can provide electricity more safely, more reliably and, in some cases, more cheaply than electricity from the grid. Electricity grids are a bushfire safety risk. There are significant safety benefits when distributed generation avoids or reduces the need for additional overhead poles and wires.

There are well-documented safety risks associated with poles and wires, especially in bushfire-prone areas. The value of improved safety in fire-prone areas should be included in the consideration of the 'true value' of distributed generation.

### **4. Is the Commission's understanding of how the costs, to network businesses and customers, of connecting generation are calculated and recovered correct? If not, why not?**

The Commission's explanation of how the costs are accounted for connecting distributed generation to networks is consistent with CEC's understanding of the process.

**5. Do you agree with the Commission's proposed approach to the inquiry? If not, why not, and what alternative approach would you propose?**

CEC supports the proposed inquiry timelines and the decision to firstly consider the energy value of distributed generation and to secondly consider the network value of distributed generation.

**6. Do you agree with how the Commission is proposing to define distributed generation? If not, why not?**

CEC agrees with how the Commission is proposing to define distributed generation for the purposes of this inquiry, ie. generation below 5 MW capacity, of any fuel type and including battery storage.

**7. Are there other definitions of distributed generation the Commission should consider?**

The Commission should also consider independent micro-grids as a form of distributed generation. Although micro-grids are relatively uncommon at present, they are expected to become more prevalent in the near future as the economics of distributed generation improves.

The public benefit of micro-grids is likely to be in the form of network benefits rather than energy benefits. For example, transitioning a remote community from grid-dependence to an independent micro-grid might yield significant benefits in terms of avoided poles and wires expenditure, reduced bushfire risk and improved safety and reliability.

**8. Are there other public benefits that the electricity generated by a distributed generator provides? How can these benefits be quantified?**

Yes. In an independent micro-grid or a system with islanding capability (ie. that can continue operating independently of the grid), the electricity generated provides reliability and safety. There are both private and public benefits in reliability and safety. However, the islanding capability benefits of distributed generation systems are currently not realised because they must be configured to automatically disconnect during a fault. Islanding capability is not considered desirable in networks due to their present design characteristics.

**9. Are there other environmental and other public benefits that a distributed generator provides to the distribution network? How can these identified benefits be quantified?**

There are environmental and other public benefits associated with avoided poles and wires. Reduced risk of bushfires is an environmental benefit. There are also aesthetic and amenity benefits in avoided poles and wires.

One means of assessing the value society places on avoided poles and wires would be to consider the investments being made in placing power lines underground. The Bushfire Royal Commission would be a useful source of information on the risks of power lines and the costs associated with those risks.

**10. Are there any particular aspects of the current regulatory framework outlined in this paper that the Commission should consider when evaluating the adequacy of the current Victorian policy and regulatory frameworks governing the remuneration of distributed generation?**

In 2015 the Commission indicated that there is a legislative barrier to time-varying feed-in tariffs. This legislative barrier should be addressed.

**11. What is the impact of the current regulatory framework on the valuation of distributed generation in Victoria? In particular, what has been the scale and scope of payment support provided to distributed generators by: avoided TUOS payments, avoided DUOS payments, Network Support Payments, the Distribution Network Pricing and Assessment Framework, and the RIT-D?**

This information is not currently available to CEC. Documenting this information would be a useful contribution to the process of policy development.

**12. Do you agree with the Commission's proposal to develop a methodology for calculating the time-of-use benefit of the electricity produced by a distributed generator? If not, why not?**

CEC recommends consideration of a 'critical peak' time-of-use feed-in tariff payment that rewards distributed generators for the additional value of their electricity when demand is high, the system is under strain and wholesale prices are spiking.

**13. Which of the two time-of-use options do you favour?**

CEC prefers a two-part feed-in tariff. One part would be a flat, year-round payment and the second part would be a critical peak bonus for electricity generation at times of highest demand.

**14. Are there any other time-of-use options that the Commission could consider?**

A 'critical peak' feed-in tariff will have the most impact in terms of reducing wholesale electricity price spikes and avoiding the need for poles and wires expenditure. It is also the feed-in tariff most likely to affect behaviour and motivate change. Early adopters and battery owners are unlikely to be motivated by the small price differences between a daily peak, shoulder and off-peak feed-in tariff. They would be more likely to be motivated by the higher prices that could be offered for limited duration at times of critical peak demand.

**15. Are there any other methodologies for calculating the locational benefit of distributed generation?**

There are two peaks to be considered – wholesale price peaks and local congestion peaks.

Wholesale price peaks will occur more or less uniformly across the state. There is no need to be concerned about locational variation when setting a critical peak feed-in tariff to address wholesale price spikes.

Peaks that cause local congestion are location-specific. This will require further consideration in the second stage of the Commission's inquiry, which will consider the network benefits of distributed generation.

**16. Do you agree with the Commission's view that the environmental benefit of distributed generation may be sufficiently reflected in payments available under the RET? If not, can you provide evidence to detail what environmental benefits of distributed generation are not already captured by the RET scheme and how they can be valued?**

No, we do not agree with the Commission's view that the environmental benefits of distributed generation are captured through the RET scheme. Most of the distributed generation installed in Victoria receives incentive payments under the Small-scale Renewable Energy Scheme (SRES), which is paid for systems up to 100 kW in capacity. Under the Renewable Energy (Electricity) Act 2000 payments under the SRES are scheduled to be reduced by about 6.7% per year, commencing 2017. This implies that the policy intent of the SRES is industry development. If the intent of the SRES is carbon abatement, it is not apparent why carbon abatement would become 6.7% less valuable (in nominal terms) each year, commencing 2017. The real value of the payment will decrease by even more than this amount. If the payment under the SRES was intended as an incentive for carbon abatement it would be more reasonable to expect the real value of payments to increase over time.

**17. Are there other methodologies that the Commission could consider for calculating the carbon benefit of distributed generation technologies that are not covered by the RET?**

There are many methodologies the Commission could consider when calculating carbon abatement. The methodology outlines in the discussion paper seems reasonable.

**18. Do you agree with the Commission's proposal to undertake further analysis into the economic benefit of distributed generation to distribution networks? If not, why not?**

Yes.

**19. Do you agree with the proposal to focus this analysis on the three pieces of analysis highlighted? If not, why not?**

Yes.

## **Recommendations**

The proposal to firstly consider the energy value of distributed generation and to secondly consider the network value of distributed generation is supported.

The Commission has not captured the full public benefits of distributed generation. There are economic, social and environmental benefits from avoided poles and wires. For example, there are well-documented safety risks associated with poles and wires, especially in bushfire-prone areas. The value of improved reliability and safety in fire-prone areas should be included in the consideration of the 'true value' of distributed generation.

The Commission should consider independent micro-grids as a form of distributed generation.

There are also aesthetic and amenity benefits in avoided poles and wires. One means of assessing the value society places on avoided poles and wires would be to consider the investments being made in placing power lines underground. The Bushfire Royal Commission would be a useful source of information on the risks of power lines and the costs associated with those risks.

In 2015 the Commission indicated that there is a legislative barrier to time-varying feed-in tariffs. This legislative barrier should be addressed.

CEC recommends adoption of a 'critical peak' time-of-use feed-in tariff payment that rewards distributed generators for the additional value of their electricity when demand is high, the system is under strain and wholesale prices are spiking. A 'critical peak' feed-in tariff will have the most impact in terms of reducing wholesale electricity price spikes and avoiding the need for poles and wires expenditure. It is also the feed-in tariff most likely to affect behaviour and motivate change.