



29 July 2016

Dr Ron Ben-David
Inquiry into the True Value of Distributed Generation
Essential Services Commission
Level 37/2 Lonsdale Street
Melbourne VIC 3000
Lodged online

Dear Dr Ben-David,

The Network Value of Distributed Generation–Distributed Generation Inquiry Stage 2, Discussion Paper

Origin Energy (Origin) welcomes the opportunity to provide a response to the Essential Services Commission of Victoria's (the Commission) Discussion Paper into the Network Value of Distributed Generation.

As the Commission appreciates, this stage of the Inquiry is more applicable to the functions of Distribution Network Service Providers (DNSPs) than retailers. Origin's response will be confined to matters of direct interest to retailers.

Network tariff reform

The Commission has correctly identified the potential of network tariff reform to shift patterns of consumer demand in a manner that will lower network congestion.¹ Origin supports network tariff reform as it is the most efficient method of encouraging behavioural and investment decisions that will most efficiently utilise network capacity.

Under cost-reflective pricing, if consumers benefit from installing distributed generation or altering their system's production, then this will reflect efficient decision-making. The structure of electricity tariffs is essential to evaluating the costs and benefits of distributed generation. Traditionally, tariffs have been structured on a single rate, volumetric basis. These tariffs do not reflect the costs of a customer's peak demand; yet the network is built in order to meet this level of demand. The requirement for networks to provide cost reflective network tariffs will alter the economics for some forms of distributed generation (depending to some degree on whether they are dispatchable or intermittent). Without network tariff reform, many solar PV customers will continue to pay less for using the network than their utilisation of it in peak times would justify, with non-solar PV users funding network costs for those avoided by solar PV users. Origin believes that the Commission needs to carefully consider the relative merits of any proposed payment for distributed generation against network tariff reform in order to determine which one is more efficient for achieving the Commission's objectives.

A reduction in consumption may be an efficient alternative to network augmentation when the local network is constrained. As the Commission is aware, distributed generation may reduce consumption, and this may be valuable where the network is reaching the point where it requires augmentation to avoid constraint. Despite this, distributed generation is not the only solution to of avoiding augmentation costs and reducing consumption; and in some cases it may not be the most technically and economically efficient manner of doing so. Rather than choosing a particular technology or method, it is more effective to provide consumers with a price signal through their network tariffs and to allow them to make the most efficient decision in response to it. If this involves installing distributed

¹ Essential Services Commission of Victoria, *The Network Value of Distributed Generation: Distributed Generation Inquiry Stage 2 Discussion Paper*, June 2016, p. 42.

generation then consumers will be rewarded by avoiding, or minimizing the impact of, the price signal of the network tariff.

The risk of introducing an additional payment for distributed generation is that it compensates owners for decisions they have made regardless of whether they reflect efficient costs; this has the potential to distort the efficiency benefits arising from network tariff reform. Price signals for small customers via cost-reflective tariffs will ultimately do more to signal the appropriateness of investment in small embedded generation than that provided by a network credit, which will necessarily be muted in its impact if not set at a very local level (which in turn would be expensive to calculate and administer).

Local Generation Network Credits

The Commission has identified the Local Generation Network Credits (LGNC) rule change currently before the AEMC as an important guide for some of the issues raised in this Inquiry.² Origin does not support this proposed rule change as::

- It would likely result in an increase in electricity costs for customers which would outweigh the benefits that may accrue to participating generators.
- Networks have not indicated that there is a benefit they can quantify from most small scale embedded generators.
- It would duplicate existing incentives and support provided to embedded generation.
- It will involve a high level of complexity and administrative cost relative to the benefit.
- There is limited potential to reduce network augmentation costs given modest network augmentation plans and the limited impact an LGNC would have on most embedded generation investment decisions.³

As the Commission points out, the demand forecasts used by distribution network service providers (DNSPs) incorporate expected increases in embedded generation, validated by the Australian Energy Regulator (AER), when assessing pricing proposals submitted by DNSPs.⁴ The inclusion of small embedded generation in DNSP's demand forecasts impacts upon the DNSP's augmentation planning and hence the revenue allowance approved by the AER. Accordingly, the avoided cost of constructing network infrastructure is likely to be largely factored into network revenue determinations. Because of this, the LGNC proposed rule change has the potential to increase the cost of delivered electricity to customers without embedded generation at sites unable to access a LGNC. This is because the reduction in capital expenditure requirements brought about by new embedded generation has already been accounted for through load forecasts applied to the revenue requirement of a DNSP.

The Commission has accepted that the scope of its present Inquiry directly coincides with the Local Generation Network Credits LGNC rule change proposal. We agree with the Commission that findings of the LGNC rule change proposal should be equally applicable in Victoria. Origin believes that the Australian Energy Market Commission's (AEMC) analysis of the benefits of distributed generation for networks ought to be authoritative in this context. We are not aware of any reason why the Commission would want to create any additional rules to those made by the Commission. Equally, were the AEMC to decline to make a rule change at all, this may be because there are no compelling reasons for regulatory intervention. Were the Commission to propose regulations in an overlapping area then Origin would expect clear evidence and reasoning to be presented that would support any proposed regulatory intervention.

² Ibid, pp. 46-48.

³ Origin Energy, Submission into the AEMC's Consultation Paper – National Electricity Amendment (Local Generation Network Credits) Rule 2015, 5 February 2016, p.1. Accessed here: <http://www.aemc.gov.au/getattachment/17868173-e5ed-4c0b-b6f1-e35f335d06c2/Origin-Energy.aspx>

⁴ ESCV, Network Value Discussion Paper, pp. 4-5.

Impact of network payment on directing investment

The Commission has not yet reached a stage where it has prepared a formal regulatory proposal for capturing any network benefits of distributed generation. In formulating a proposal, the Commission will need to be clear whether the objective of any network credit is:

- to provide customers with an incentive to install distributed generation to create an identified value (value creation); and/or
- to provide customers with a credit that reflects an already existing value (value transfer).

If the Commission wishes to create value through a direct incentive to install distributed generation then they will need to provide a sufficiently precise signal to encourage investment where it is most needed (for instance, in relevant locations to defer augmentation). In the case of avoiding network congestion, we would expect multiple customers across a specific network area would need to install systems in order to capture a particular value. Given that any value of distributed generation is likely to be highly location and time specific, the Commission needs to ensure that a credit only compensates distributed generation for its direct value. For example, a credit may only apply at the zone sub-station level, where customers are rewarded for specific instances of deferred augmentation. Furthermore, not all forms of distributed generation are equal from a network point-of-view; where there is a poor correlation between aggregated solar output, its intermittency and peak demand on distribution networks, a network credit ought to reflect these differentials rather than treating them uniformly. Accordingly, any credit with the objective of creating value will need to be designed to reflect specific locational benefits of distributed generation and sufficiently differentiated in terms of the technology's dispatchability.

The Commission can also design a network credit with the objective of capturing a value that already exists. Such a credit would be calculated to presume that the aggregate of distributed generation systems is providing the network an identified benefit; this may be in the form of calculating the net savings of distributed generation across the network and providing this back to distributed generation owners through a credit. Ongoing credits that are calculated on the same basis for all distributed generation customers (as would be the case with the proposed LGNC rule change) would essentially transfer the cost of paying for the network from customers with distributed generation to those without it. Such a credit may not encourage investment on the most efficient basis to disparate technologies and embedded generator sizes, yet all customers will meet this cost regardless. This is because small customers (installing solar PV for example) are primarily motivated by the economic benefit of the avoided cost of energy when installing distributed generation, rather than in response to specific requirement in the network.

Origin therefore believes that any credit for networks has to clearly capture a defined benefit and that this is most likely to be achieved through granular credits that create value for the network. Given the specific nature of benefits to the network, which in turn depend on the distributed generation technology that is utilized, actual network benefits will need to be demonstrated by the Commission. Any network credit will therefore be properly confined to where network value is created rather than smeared across all consumers regardless of whether they benefit or not. The challenge for the Commission will be balancing a properly granular credit with the high cost of networks calculating and administering it. The Terms of Reference ask for practicality and cost to be taken into account in developing proposals. This will require the Commission to demonstrate the expected benefits of a credit for the network. As we have stated above, the most direct and efficient manner of sending price signals to the customer is through network tariff reform, and we believe the Commission ought to be cognisant of this when weighing up the cost and practicality of any proposal.

Implementation

Origin would appreciate the Commission providing some indication in its Draft Report on how any proposed network credit would be implemented. Origin presumes that the network credit would be

calculated and paid for by the relevant DNSP. Presumably, the role of retailers would be to pass through this credit to customers via their ordinary bill. We seek clarification of how often these credits may be made and how often they would be calculated.

As with any regulated payment, the Commission would need to establish a relevant regulatory period over which a credit applies. Origin would appreciate further information in its Draft Report on how any network credit would be varied over time and how often this would occur. Network constraints may change over time for reasons unrelated to distributed generation—for instance, where industry shuts down or there is an increase in energy efficiency by households—and any credit will need to be significantly flexible to cater for this without being too onerous to implement.

Should you have any questions or wish to discuss this information further, please contact Timothy Wilson, Regulatory Analyst,

Yours sincerely

A handwritten signature in blue ink, appearing to read "K. Robertson".

Keith Robertson
Manager, Wholesale and Retail Regulatory Policy
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