INFORMATION

Local Generation Network Credits – Final Determination

The Australian Energy Market Commission (AEMC) has made a final rule that would require distribution network service providers (DNSPs) to publish information about expected system limitations, in order to assist embedded generators and other businesses to propose alternatives to network investment. The final rule does not implement 'local generation network credits', as was proposed by the City of Sydney, the Total Environment Centre and the Property Council of Australia.

Background

The energy sector is evolving and moving towards greater diversity in how, where and when electricity is produced and consumed, and how it is delivered. The AEMC considers that consumer choice should shape the future of the energy sector.

The AEMC considers it imperative that the rules enable the energy market to evolve, rather than trying to impose a solution based on one specific view of the future. Doing so ensures that efficient solutions are technology-neutral and driven by consumer preferences.

Following rule changes in recent years, the National Electricity Rules (NER) contain a number of mechanisms to incentivise efficient investment in, and use of, distributed energy resources, including embedded generation. These include:

- **Cost-reflective distribution network tariffs:** DNSPs are required to develop prices that better reflect the costs of network services, so that consumers can make more informed decisions about electricity use and investment, including investment in embedded generation.
- **Network support payments:** embedded generators are eligible for payments from network businesses in recognition of the benefits provided by delaying or avoiding investment in the network.
- **Regulatory investment tests for distribution/transmission:** require network businesses to consider the costs and benefits of all credible network and non-network solutions where an investment need is more than $5 million for distribution and $6 million for transmission.
- **Distribution network planning and expansion framework:** require DNSPs to annually plan and report on assets and activities that are expected to have a material impact on the network in a distribution annual planning report, and to publish a demand-side engagement strategy.
- **The capital expenditure sharing scheme and the efficiency benefit sharing scheme**, respectively, incentivise efficient investment and operation of the distribution and transmission networks.
- **The demand management incentive scheme and demand management incentive allowance** will provide incentives and funding, respectively, to invest in non-network solutions

The AEMC has also sought to improve the process by which embedded generators – both large and small – connect to the grid through rule changes that facilitate a more transparent connection process, and to require DNSPs to publish relevant information.

AUSTRALIAN ENERGY MARKET COMMISSION LEVEL 6, 201 ELIZABETH STREET SYDNEY NSW 2000
T: 02 8296 7800 E: AEMC@AEMC.GOV.AU W: WWW.AEMC.GOV.AU

The rule change proponents stated that these mechanisms may be effective for larger-scale embedded generation, but that they are less effective for small-scale embedded generation. The rule change request sought to address this by requiring DNSPs to pay all embedded generators a 'local generation network credit' (LGNC) that reflects the estimated long-term benefits that embedded generators provide in terms of deferring or down-sizing network investment, or reducing operating costs.

LGNCs would have been a separate negative tariff, and would have created a new payment relationship between DNSPs and embedded generators. The rule change request considered that all embedded generators should be eligible to receive an LGNC, but the amount paid would have depended on where each generator connects to the network and when it exports electricity.

The proposed LGNC mechanism would increase average electricity prices for consumers

Why the proposed LGNCs are not being introduced

The AEMC does not agree with the proponents that the existing mechanisms in the NER are insufficient to incentivise efficient investment in embedded generation and other non-network solutions. It also considers that the LGNC proposal was likely to increase electricity prices for all consumers.

The impact of embedded generation on network costs depends on where the generator connects to the network and whether it can generate at times of peak demand. LGNCs would have been a broad mechanism, and would have not reflected the highly specific impact of embedded generation on network costs. LGNCs would have:

- incentivised embedded generation in areas where there is spare capacity and no opportunity to reduce network costs, and provided insufficient incentive for embedded generation in constrained areas where there is a potential to reduce costs;
- favoured embedded generation over other distributed energy resources (such as demand response) and other emerging technologies, leading to over-investment in embedded generation at the expense of potentially more efficient alternatives; and
- resulted in certain types of embedded generators – particularly controllable diesel and gas-fired generators – receiving significantly higher payments than other generators.

Analysis by the Institute for Sustainable Futures (ISF) in support of the rule change request estimated that LGNCs could result in material cost savings; however, these cost savings depended on:

- the exclusion of small-scale embedded generators – the opposite of what is proposed in the rule change request; and
- projections that peak demand for electricity will increase significantly more than forecast by the Australian Energy Market Operation (AEMO) – if the AEMO forecast were to be used, the ISF's analysis shows that LGNCs would have cost consumers a net $233 million over the period to 2050.

Modelling by the ISF also ignored the locational impact of embedded generation on the network.

Analysis by AECOM for the AEMC, which was published with the draft determination, showed that even where there is a projected system limitation, LGNCs can significantly increase costs to consumers while offering little or no deferral of network investment.

AECOM specifically assessed three case studies where an investment need is expected, as these represented the most likely opportunities for embedded generation to reduce network costs. For all three case studies, the level of peak demand reduction with LGNCs was insufficient to defer investment, so there was no reduction in network costs.

The AECOM analysis indicated that the cost of paying the LGNCs ranged from $1 million to $18 million in the three case studies. This net cost would have needed to be recovered through an increase to network charges paid by all consumers.

AECOM's analysis does not suggest that embedded generation cannot reduce network costs. Rather, it shows that benefit from additional embedded generation as a result of introducing LGNCs would have been outweighed by the cost of the LGNCs.

The final rule would assist proponents of non-network solutions by providing key information about system limitations in a consistent and accessible manner

The issues this rule change does not address

Some stakeholder submissions highlighted misunderstandings relating to the issues raised in the rule change request. The rule change request was not about:

- **Only paying for the part of the network that a consumer uses:** Embedded generators do not pay to use the network to export energy. The costs of the existing network are recovered from consumers through network charges. Under cost-reflective network pricing, a consumer who installs embedded generation and, as a result, reduces their consumption from the network at peak times should pay lower network charges.

- **Enabling peer-to-peer electricity trading:** peer-to-peer trading would benefit from cost-reflective network pricing, but can be achieved without LGNCs.

- **Encouraging a move towards more renewable generation:** the proposed LGNCs would have been paid to all embedded generators, not just renewable generators. Controllable diesel and gas-fired generators would have likely received much larger payments than distribution-connected solar PV or wind generators of a similar size.

The final rule

The final rule addresses the issue raised in the rule change request by allowing providers of non-network solutions (including embedded generation) to more easily make use of the existing mechanisms in the NER.

The final rule requires DNSPs to publish a 'system limitation report' in accordance with a template prepared by the Australian Energy Regulator. This report will include information on*:*

- the name or identifier and location of network assets where a system limitation or projected system limitation has been identified during the forward planning period;
- the estimated timing of the system limitation or projected system limitation;
- the proposed solution to remedy the system limitation;
- the estimated capital and operating costs of the proposed solution; and
- the amount by which peak demand at the location of the system limitation or projected system limitation would need to be reduced in order to defer the proposed solution, and the dollar value to the DNSP of each year of deferral.

The system limitation report will be published annually in conjunction with each DNSP's annual planning report. By providing key information about system limitations in a consistent and accessible manner, the report will allow providers of non-network solutions to focus on locations where their solutions could be used to defer or avoid investment in the network. Further, requiring DNSPs to include the dollar value of each year of deferral of a proposed solution will:

- provide the basis for measuring the financial viability of non-network solutions at the earliest opportunity;
- remedy some of the information asymmetry between non-network solution proponents and DNSPs; and
- provide some balance to the relative negotiating power between DNSPs and providers of non-network solutions, when they negotiate payments for providing network support.

Ultimately, this can reduce the costs of delivering electricity to consumers.

For information contact:
AEMC Director, **Shari Boyd** 02 8296 7869

Media: Communication Director, Prudence Anderson 0404 821 935 or (02) 8296 7817

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