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LOCAL GENERATION NETWORK CREDIT RULE CHANGE

TEC SUBMISSION TO AEMC CONSULTATION PAPER

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Established in 1972 by pioneers of the Australian environmental movement, Total Environment Centre (TEC) is a veteran of more than 100 successful campaigns. For nearly 40 years, we have been working to protect this country's natural and urban environment, flagging the issues, driving debate, supporting community activism and pushing for better environmental policy and practice.

TEC has been involved in National Electricity Market (NEM) advocacy for ten years, arguing above all for greater utilisation of demand side participation — energy conservation and efficiency, demand management and decentralised generation — to meet Australia's electricity needs. By reforming the NEM we are working to contribute to climate change mitigation and improve other environmental outcomes of Australia's energy sector, while also constraining retail prices and improving the economic efficiency of the NEM — all in the long term interest of consumers, pursuant to the National Electricity Objective (NEO).

Introduction

As one of the rule change proponents, TEC appreciates the work the AEMC has put in to the process so far, and the extensive consultation process planned for the next few months. This is a far-reaching reform that is simple in theory but complex in practice, so extensive consultation is warranted.

While the AEMC will receive detailed responses to its consultation questions from our partners and others, TEC has decided to focus its submission on two critical issues – ie,

1. The overall scope of the consultation paper as an interpretation of the rule change request.
2. The potential consumer impacts.

We regard this response as critical because there is a risk that the rule change request may falter if the solution the proponents have proposed Is not adequate to meet the problem we have also identified in the light of the rapidly evolving energy market.

The fundamental issue the rule change seeks to address is identified in the rule change request as follows:

> [T]he incentives for local generation in the current Rules either do not provide adequate recognition of the benefits that local generation can provide, and/or may not be readily accessible to small-scale local generators.

This issue is discussed in more detail below. The proposed solution is summarised as follows:

> The LGNC is a price signal for exported energy. It reflects the long-term economic benefits (in the form of capacity support and avoided energy transportation costs) that the export of energy from a local generator provides to a distribution business, including reduced or avoided transmission costs that would otherwise be passed through to end users.

However, the complexities of determining an appropriate methodology for calculating a realistic value to the grid of local generation; the as yet unanswered question of how this value is best made available to consumers; and the current environment of low LRMC values could all conspire to derail the rule change in either its gestation or its implementation. We therefore consider it is critical for the AEMC to consider current and likely market developments, the problem with the current regulatory regime and the solution in sequence, rather than potentially concluding that if the proposed solution is impractical, ineffective or inefficient, then the problem does not exist. Instead, if the AEMC accepts the problem but concludes that the proposed solution is not adequate or realistic, it may make a more preferable rule.

Scope and objective of the rule change

This issue could be considered as a response to the consultation paper's Q1(3), since TEC does not consider the current assessment framework to be sufficiently broad and future-focused.

The issue is encapsulated in the opening statement in the consultation paper that "The request is to introduce a payment from distribution networks to embedded generators, which reflects any benefits the generators provide to the network." This is in line with the second statement quoted above from the rule change request. However, from TEC's perspective it would be more correct to state that "The request is to introduce a payment from distribution networks to embedded generators which reflects the benefits local generators provide to *consumers*." We are concerned that the rule change process has already become focused on the extent to which local generators can provide services that correspond to the networks' current business model and current regulatory settings, whereas we are proposing a reform that essentially establishes the principle that *consumers should only pay for the extent of the network that they use*. This principle is expressed slightly differently in the rule change request, as follows:

> The transition to a more decentralised electricity system must take into account the interest of all affected parties. For local generators, this means financial recognition of the benefits that their exported energy may provide in managing electricity supply, because this encourages orderly participation.

In the long term, with the likely continued growth of decentralised generation, this may result a downsized grid. In the short term, it will provide a lifeline to networks, by providing them with a revenue source that might otherwise be lost to behind the meter, microgrid and offgrid consumption of local generation. But – consistent with the NEO and the AEMC's assessment framework – the focus should be on consumers, not networks.

There is other evidence of the AEMC's network-centric approach in the consultation paper. For instance, the proposed assessment framework contends that

- [T]he NER should incentivise DNSPs to provide network services at the lowest total cost by using an efficient combination of network and non-network solutions [and]
- [T]he NER should provide DNSPs with incentives to make the right investments in network and non-network solutions at the right times and in the right places.

We would argue, on the contrary, that networks should be regarded as only one source of investment to meet demand, and that these statements would therefore be better recast as follows:

- [T]he NER should incentivise DNSPs *and non-network generators and other energy service providers* to provide network services at the lowest total cost by using an efficient combination of network and non-network solutions [and]
- [T]he NER should provide DNSPs *and non-network generators and other energy service providers* with incentives to make the right investments in network and non-network solutions at the right times and in the right places.

The growth of decentralised energy is central to the current transformation of the electricity sector. This was recognised by the AEMC in its Power of Choice review and reforms, which resulted in "a package of reforms designed to increase the responsiveness of the demand side to evolving market, technological developments and changing consumer interests *over the next 15 to 20 years*" (our emphasis). That is, Power of Choice was a future-oriented exercise, not just a review of the status quo. More recently the

"network evolution" area of focus in the AEMC's 2015 strategic priorities is a recognition of the fact that "Existing functions and roles in energy markets will be performed by new and different technologies in the coming years".

The decentralised energy revolution was also the stimulus for the CSIRO's 2013 Future Grid Forum report, and more recently the ENA/CSIRO Network Transformation Roadmap, the Interim Program Report of which acknowledges that

> Australians are embracing the future of electricity. We are engaging with new electricity services and technologies at record levels, such that Australia is recognised globally as being at the frontier of key aspects of energy transformation… [E]lectricity systems around the world – and especially in Australia – are experiencing a scale of change perhaps not seen since the dawn of electrification. This transformation is ultimately an expression of changing customer aspirations and new levels of empowerment. It is energy 'transformation' in action, similar to what many other industries – from taxis and accommodation, to newspapers and telecommunications – have experienced over the past decade.

It is not coincidental that the above Roadmap was commissioned by the ENA. The energy transformation is creating an enormous challenge to the traditional business model of what was previously a regulated monopoly part of the electricity supply chain, but which is now effectively in direct competition with behind the meter and offgrid products and services.

In some other jurisdictions, the challenge posed by the decentralised energy revolution is well understood. For instance, New York State's "Reforming the Energy Vision" (REV) strategy

> …will lead to regulatory changes that promote more efficient use of energy, deeper penetration of renewable energy resources such as wind and solar, wider deployment of "distributed" energy resources, such as micro grids, roof-top solar and other on-site power supplies, and storage. It will also promote markets to achieve greater use of advanced energy management products to enhance demand elasticity and efficiencies. These changes, in turn, will empower customers by allowing them more choice in how they manage and consume electric energy. [1]

Such initiatives do not begin by asking the advocates of reform to prove precisely how the current rules are ineffective in relation to a particular group (in this case local generators) whose participation in the market has been stymied. They typically begin with a vision of what the market could or should look like in the medium term (in NY's case, 15 years) and how the regulatory regime can be designed to accommodate or even promote it in a flexible, transparent and inclusive manner without jeopardising the holy grail of low prices for consumers.

In relation to the oft-quoted lack of any criterion for NEM regulation in Australia other than economic efficiency, we would point the AEMC to recent COAG Energy Council communiques and again to its own 2015 strategic priorities, which refer to the need to integrate energy, environmental and social policies. The AEMC need not itself turn a deep shade of green to acknowledge that meeting Australia's 2015 Paris climate summit commitments will require a transformation of the energy sector well before 2030, and well beyond the planned expiry dates of the current RET and Emissions Reduction Fund. Decentralised generation could play an important role in this transformation, but only with the right regulatory levers – which, as we argue below, does not require preferential treatment, rather the removal of historical barriers favouring centralised generation and network monpoloies.

[1] See http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument; also http://blog.rmi.org/blog_2015_08_27_new_york_REV_distributed_platform_breaks_new_ground.

It is therefore critical that this rule change process begins by recognising the context of the evolving energy market and the potential need for major regulatory reforms to respond to it. Otherwise, it will be overly constrained by the networks' existing business model, and the proposed reform will be interpreted mainly through the lens of how local generators can provide network services as they are currently understood. This would be a mistake, since networks are not static entities, and the services they provide should be understood to be increasingly subject to competition.

This narrow focus is reflected in Figure 3.1, Summary of perceived issue, of the consultation paper, which begins with a box stating that "It is too costly for individual small-scale embedded generators to negotiate directly with DNSPs, and they need to offer firm capacity". *This is most definitely not the fundamental "perceived issue"*, which is rather that the main barrier to decentralised energy is the fact that as soon as electricity is exported through a meter, even into the same multi-tenant building, it attracts full network charges.

This undermines the AEMC's recent good work in introducing rules for cost reflective consumption tariffs, which recognise that "prices [should] reflect the efficient costs of providing network services to each consumer". Network costs are typically broken down by voltage level, and on average we estimate that around one quarter are incurred at the LV level, yet consumers pay for 100% of the costs of HV, subtransmission and transmission costs as well. In this sense networks could be said to be making windfall gains from the boom in decentralised energy, although they usually focus only on the costs involved in higher bidirectional flows. This flaw in the NER is undermining the value and effectiveness of cost reflective network tariff reform.

In view of the above, we regard it as critical that the rule change process proceed according to the following logic:

Step 1: In light of the current and likely boom in decentralised energy generation and the non-network options becoming increasingly attractive to decentralised generators and prosumers, acceptance of the fundamental principle that the long term viability of the grid requires that in future consumers should pay network tariffs consistent with the extent of their utilisation of the grid (possibly by location and/or voltage level).

Step 2: Consideration of the best way to implement this principle via a generator credit versus other potential mechanisms.

Step 3: Consideration of means whereby consumers can obtain a financial benefit from generator credits.

Perhaps the best way for the AEMC to respond to Step 1 of our suggested chain of logic above might be for it to model a counterfactual – ie, what would happen should this rule change not proceed or be implemented as intended by the proponents, consistent with recent and likely changes in relation to the growth of decentralised energy generation and storage. We anticipate this would involve modelling a future in which (since there are no generator credits) the following occur:

- The proportion of new grid-connected decentralised generation is less than it would be under the proposed reform.
- An increasing proportion of decentralised generation occurs behind the meter, in microgrids or offgrid.

- Some battery installations occur which are uneconomic, in the sense that their owners could receive a higher return for their generation by exporting to the grid during network peaks, were a generator credit available.

- Legacy grid-connected consumers are forced to pay more unless there is a complementary mechanism for network asset bases to be revalued downwards to reflect lower utilisation.

If step 1 is accepted, the most obvious way for the AEMC to implement it (ie, step 2) would be to acknowledge the logic of (and commission modelling on) introducing cost reflective generation credits to complement cost reflective consumption tariffs. In other words, if it is appropriate for consumers to be given a price signal related to the cost of future investment to meet peak demand, then it is also appropriate for generators to be given a price signal related to the extent to which their supply into the local grid can also help to obviate the need for future. How this credit should be paid for is the next issue to address, but is effecetively a third order one (addressed below). It makes little sense to reform the demand side without also reforming the supply side correspondingly. The LRMC values at different voltage levels supplied by networks to substantiate their demand tariffs provide a corresponding price signal about the benefits to networks in relation to future investment costs of new generation which avoids higher voltage level parts of the grid.

Recommendation 1

The assessment framework should recognise the strategic context of the current and likely future boom in decentralised energy generation and the increasing economic viability of non-network alternatives for decentralised generators and prosumers.

Recommendation 2

The assessment framework should be amended as follows:

1. Reword the existing NEL requirements to read:

- **price** – whether the proposal is likely to decrease or increase the prices paid by consumers for electricity *in the long term*, *in light of current and potential trends in the energy market and public policy imperatives;*

2. Reword the proposed assessment framework to read:

. [T]he NER should incentivise DNSPs *and non-network generators and other energy service providers* to provide network services at the lowest total cost by using an efficient combination of network and non-network solutions [and]

. [T]he NER should provide DNSPs *and non-network generators and other energy service providers* with incentives to make the right investments in network and non-network solutions at the right times and in the right places.

3. Include the following criterion:

    - The extent to which the underlying costs of supply are reflected in current network tariffs in relation to embedded generation.

Recommendation 3

Should the AEMC find merit in the fundamental principle put forward by the proponents, the assessment framework should include the following, as a first point to precede the "Three issues of particular relevance to applying this assessment framework":

. If the proponents' overarching principle (that consumers should pay for the extent of the network they utilise) has merit, whether their proposed solution to the perceived problem is the optimum one, or whether others may be preferable.

Consumer impacts

This discussion could be considered as a response to the consultation paper's Q5(1)(d) in relation to consumer price impacts.

The consultation paper reveals the AEMC's reasonable interest in the consumer benefits of the proposed reform, and its concern that if credits are paid to local generators, they must be paid for by consumers who may not see the benefits. We agree with the statement in the consultation paper that

> [C]onsumers… must ultimately pay the costs of network and non-network solutions (including embedded generation) through their electricity tariffs. If it is possible to reduce the costs of delivering electricity by incentivising a more efficient mix of network solutions and embedded generation, there is the potential to pass those cost savings on to consumers as lower prices. Conversely, any proposal that increases costs without delivering benefits, will lead to higher electricity charges.

It is important to acknowledge that consumers may derive benefits from local generation other than lower prices. This is implicit in the Power of Choice review, which acknowledges the importance of informed choice as a critical element of the long term interest of consumers alongside any opportunities it may bring to lower their bills. Consumers use their "power of choice" not only to reduce their bills; they may also use it to increase their sense of agency and autonomy, to reduce their dependence on companies they do not like or trust, or to support renewable energy generation as an alternative to highly polluting fossil fuels.

Even in economic terms, though, there are a number of ways that consumers can benefit from local generation credits. In TEC's view there are four main groups of local generators which may benefit from LGNCs:

- Community energy projects.
- Councils with generation on 1 site and load on another.
- Multitenant buildings (apartments, offices & shops) where tenants are separately metered but may buy energy from elsewhere on site (eg, solar on the roof or a co/trigen plant in the basement).
- Precinct scale co-trigen customers.

How each of these types of generation can pass on credits will vary. However, in the short term this is likely to occur as follows:

- By consumers owning (shares in) generators – eg a community wind farm supplying local town where members live, and they get dividends (although under this arrangement consumers needn't be local).

- By generators passing on the value of network credits to consumers by netting off local generation against consumption
    - Where a generator is also an exempt retailer selling energy to consumers in an embedded network (apartment buildings, office buildings or shopping centres where customers are individually metered).
    - Where a generator is also full retailer and it can offer lower retail prices to local customers (eg, as intended by new community retailer Enova Energy).

In the longer term, consumers will derive a financial benefit by not paying for a larger grid than is necessary to serve their needs (which is why the proponents argue that all transmission costs should be avoided for local generation), and by generators not being incentivised to go behind the meter/offgrid/install private wires, accelerating the death spiral and leaving legacy grid-connected customers to pay higher bills.

With the rule change proponents' model, we can't guarantee that all consumers will get a direct short term financial benefit. However, market forces should ensure this over time, because retailers will offer products which connect local generators with consumers (whether via lower prices or better quality – eg, 100% renewable energy for those consumers wanting such products).

We acknowledge that there will be costs: the generator credits must be paid for. In the first regulatory period, a small or negligible quantum of generator credits should need to be paid for by other consumers, since this reform is unlikely to be implemented until 2018 at the earliest, and the likely benefits will only be available to a limited number of local generators who can export during network peak periods. In subsequent regulatory periods, lower augex and repex costs in network revenue proposals resulting from more local generation should more than offset generator credits.

We also acknowledge that the benefits of local generation will be partly offset by higher network costs for high penetrations of decentralised generation in some circumstances, although consumers should be forced to pay for decades for poor past overinvestment in grid assets to distribute centralised generation. Where the costs are greater than the benefits, networks are not required under the rule change request to offer a generator credit. However, the onus should be on networks to prove this. There will also be transaction costs for retailers where a netting off occurs between generators and consumers, but that is not the subject of this rule change, and the competitive market should ensure these are minimal in any case.

It would also be appropriate for the current "roll forward" model for network assets from one regulatory period to another to be reformed so that lower future grid utilisation is reflected in lower asset values. Otherwise the current disconnect between lower demand and steady or increasing asset values would be perpetuated, and critics could point to our reform as imposing a cost to consumers, since lower utilisation of higher voltage levels of the grid would not be reflected lower costs to consumers. TEC and the EUAA are currently working on a rule change request to facilitate a mechanism for periodic asset revaluations which will be submitted to the AEMC by April 2016.

Recommendation 4

The AEMC engage consultants to model the consumer impacts of the proposed reform.

Recommendation 5

The AEMC consider amending the roll forward model of network asset revaluation during regulatory resets to account for lower network utilisation.

Yours sincerely,

Jeff Angel
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