

7 October 2022

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Dear Warwick,

### **Battery Tariffs – Network Tariffs for the DER future**

The AEC is the peak industry body for electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. Our members collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to millions of homes and businesses, and are major investors in renewable energy generation. The AEC supports reaching net-zero by 2050 as well as a 55 percent emissions reduction target by 2035 and is part of the Australian Climate Roundtable promoting climate ambition.

#### **Matters to be considered**

The Argyle Consulting and Endgame Economics (Argyle) paper is intended to stimulate discussion on the future direction of network tariffs for batteries, in the context of ongoing tariff reform. We welcome the discussion and consultation opportunity.

There is prior general agreement amongst both stakeholders, both market bodies and market participants, that the price signals reflecting the value of DER to the electricity supply chain will, in most cases, be responded to by third-party aggregators on behalf of DER owners, rather than the DER owners themselves<sup>1</sup> and that the pricing structures that could be used to signal the ways in which DER can reduce costs for networks need not be limited to network tariff reform. Many non-market body stakeholders have expressed consistent support for location specific, posted price signals<sup>2</sup> that could better achieve the outcome of DER being provided in the right place, at the right times and in the right quantities. To achieve this, non-market body stakeholders felt posted price signals were preferable, particularly in the short-to-medium term, due to their relative simplicity.

Given the evolving nature of DER/CER penetration and technology change, an outlook that considers the requirements of the short to medium term and does not bake in costly and complex industry systems seems prudent. The AEC is therefore to some extent frustrated that the overarching emphasis of consultation, and the narrative of market bodies, remains fixated on tariff design and expensive technologies. This does not mean that underlying cost drivers should not be priced, but simply that the range of plausible, deliverable and lower cost alternatives to network tariff design should be being equally considered.

This submission engages in that broader discussion, and considers that:

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<sup>1</sup> *Pricing for the Integration of DER, Project Summary Report* Oakley Greenwood, June 2020 P.16

<sup>2</sup> *Pricing for the Integration of DER, Project Summary Report* Oakley Greenwood, June 2020 P.2

- Standards delivered benefits need to be balanced against the subsequent and incremental reduction in network costs from of implementing a price signal, especially prior to reaching a critical mass of battery's (whether EV or in situ).
- In the earlier stages of battery adoption more simplified locational price signals such as rebates will defer the larger administrative and implementation costs associated with adopting the more complex price signals and compensation methods, and complex and expensive enabling technologies, favoured by market bodies and distribution networks.<sup>3</sup>
- It is appropriate to consider the division of needs between grid scale batteries, VPP's and small generation aggregators, which can be more dynamic and optimise between wholesale and distribution priorities, and the needs of small consumers with batteries.
- Network tariff design and assignment has historically viewed the customer as being obligated to solve the networks problems. Retailers believe that the reverse is the case.

### Standards versus pricing

As noted by Argyle, the ESB proposed the introduction of technical standards for new inverter-based battery storage installations.<sup>4</sup> Proposed ESB requirements include enabling batteries to operate alongside other DERs, including registration, telemetry data collection and management of access control, as well as cyber-security for DER interoperability.

The reasonable question then arises that if the network gets the services that result from the application of technical standards for free (as in the example including access control above), does the network still need to send a price signal? In the AEC's view it depends. There is a need to separate theory from practice.

In their report to ARENA titled *Pricing structures to assist the economically efficient integration of DER*, Oakley Greenwood argue that the existence of standards and their ability to deliver benefits to the electricity system (by potentially reducing the network's costs) does not, in and of itself, mean that the underlying cost driver should not be priced so that the broader market's decisions can reflect that value.<sup>5</sup>

However, Oakley Greenwood then determine that notwithstanding this, the desire to price the underlying cost driver that may be being managed by an existing standard needs to be considered *in light of the administrative costs associated with implementing the price signal, as compared to gross efficiency benefits (which will be a function of the materiality of the economic benefit being priced and the elasticity of demand for DER services)*.<sup>6</sup>

In practice this means that standards delivered benefits needs to be balanced against the subsequent and incremental reduction in network costs from of implementing a price signal. Any price signal will therefore require a critical mass of DER before a benefit can be obtained. It may well be simpler, cheaper and equally effective to limit that price signal to a payment for direct load control.

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<sup>3</sup> A fascination with new technologies frequently leads to overestimating their value and underestimating their weaknesses and this industry has walked this path before. As Ausnet pleaded in its Advanced Metering Infrastructure Transition Charges Application of 2016 (page 82) “...the cutting-edge nature of the systems being installed and integrated has, unsurprisingly in our view, led to circumstances and costs which were not foreseeable at the time in which AMI budgets were determined.” Of course, customers ultimately paid for this *unsurprising* outcome, A clearer focus on outcomes would benefit this consultation and perhaps avoid another, equally unsurprising, cost outcome.

<sup>4</sup> Argyle Consulting, *Network Tariffs for the DER future*, P.54.

<sup>5</sup> Oakley Greenwood *Pricing structures to assist the economically efficient integration of DER*, Report to ARENA, 2019

<sup>6</sup> Ibid

## Local Use of System

Where such a critical mass exists, locational charges may well improve efficiency. As noted by Argyle, the hosting capacity constraint is non-uniform. Some areas suffer from a higher level of congestion than others, with customers' inverters tripping and their DER installations unable to export or generate at the time of peak export constraint.<sup>7</sup>

Adapting locational charges whether at a retailer or individual customer level is consistent with much of what has already been researched. Oakley Greenwood's report *Pricing for the Integration of Distributed Energy Resources*<sup>8</sup> explored in detail and across a wide range of stakeholders<sup>9</sup> the pricing structures that could be used to signal how DER that is provided in the right place, at the right times and in the right quantities.

Oakley Greenwood found that:<sup>10</sup>

- Stakeholder groups (excluding market bodies) preferred location-specific, as opposed to DB-wide, DER price signals, with a number of members expressing the view that a DB-wide, or postage-stamped, price signal would deliver very few if any economic benefits, given that future network costs will differ significantly by location; and
- These same stakeholders (excluding market bodies) preferred posted price signals, as opposed to “market-driven” outcomes through which DER service providers would offer services into a market (and a dispatch schedule and market-clearing price would be established via that process). Posted price signals, which would include in our view payments for direct load control, were felt to be preferable, *particularly in the short-to-medium term due to their relative simplicity* (emphasis added).

Noting also that stakeholders believed that price signals reflecting the value of DER to the electricity supply chain would, in most cases, be responded to by third-party aggregators on behalf of DER owners, rather than the DER owners themselves.

Oakley Greenwood also explored the form of the price signal – specifically whether the price signal should be a charge, a rebate or a payment, and the various pros and cons which are detailed in their report/s. The AEC believes that there is sufficient basis that in the earlier stages of battery adoption and the various trial approaches that by relying upon more simplified, (though perhaps less cost-reflective) locational price signals such as rebates will defer the larger administrative and implementation costs associated with adopting more complex price signals and compensation methods.

## Grid scale batteries, VPP's and small generation aggregators

In developing an incremental approach to export tariffs we could consider the division of need between grid scale batteries, VPP's and small generation aggregators, which can be more dynamic and optimise between wholesale and distribution priorities, and the needs of small consumers with batteries.

Argyle notes that the conflict between network and wholesale market optimisation needs to be resolved, and suggest this can be achieved network tariffs, supplemented by a network's ability to over-ride or take control of the appliances when network conditions require it.<sup>11</sup> They further note that distributors are positioning themselves for the role of the Distribution System Operator (DSO) to orchestrate flexible response and dynamically control the load and generation behind the meter.

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<sup>7</sup> *Network Tariffs for the DER Future*, Argyle & Endgame, Report to the AER 2022, P.13

<sup>8</sup> <https://oakleygreenwood.com.au/pricing-for-the-integration-of-distributed-energy-resources>

<sup>9</sup> The project was conducted in consultation with electricity retailers, networks, consumer groups, DER providers and market bodies (including the ESB, AEMC, AER and AEMO).

<sup>10</sup> *Pricing for the Integration of DER, Project Summary Report* Oakley Greenwood, June 2020 P. 3

<sup>11</sup> *Network Tariffs for the DER Future*, Argyle & Endgame, Report to the AER 2022, P.16

In its Tariff Reform handbook<sup>12</sup>, the ENA set out a three stage program for reform that moves volumetric pricing to a greater proportion of fixed charges, then introduces demand charges, then introduces voluntary localised options. It also describes payments for direct load control by energy companies. Whilst it is not apparent from Argyle's description what over-ride or take control is, it is presumably required because optimisation cannot in their view be achieved by network tariffs alone.

For small customers, each of the outcomes sought in the ENA handbook, being:

- Minimised cross-subsidies based on customer use of the network;
- Economic incentives for technology adoption based on contribution to avoided network costs;
- Reward to shift consumption off-peak;
- 'Locational' reward to customers to reduce network costs (through demand management or embedded generation), and
- Incentives for new energy markets and services

can be readily achieved by embedded generation incentives and credits. They may also be theoretically achieved by network tariffs, though with small customers this achievement is generally not borne out in historical practice. The AEC believes that all of these three options, incentives as rebates, credits or network tariffs, should be available to retailers (who have to bill them) and who may then package them into customer offers. In the first instance, network tariffs being the most costly and complex to introduce at a locational level, should be out of scope until the concept is proven using rebates or credits. Remembering that the pricing purpose is to provide the signal that DER is provided in the right place, at the right times and in the right quantities.

For grid scale batteries, VPP's and small generation aggregators a more innovative retail product that passes through network rewards and is capable of incorporating two-way pricing could well emerge, but for small customers the incentives from locational pricing in the form of tariffs alone is likely to create a barrier to entry for both small CER generators and retailers, subsequently limiting customer choice. As promoters of customer choice, the AEC prefers that customers can choose from a suite of options from multiple providers with the incentive being with the provider to allocate its costs efficiently and encourage change in consumer behaviour where necessary.

### **Tariff design and assignment**

There is also currently a lack of truly cost reflective network tariffs offered by networks; that is where the actual impacts of customer demand is the reason for setting the network tariff. And there is also little data as to whether these existing attempts at cost reflective network prices applied at the small customer (NMI) level drive sustainable change in consumption patterns that results in either deferred or avoided network augmentation. In this light, one assertion in the Argyle report needs to be called out here. Argyle assess that:

*Historically, retailers have used relatively simple tariffs to signal cost even for complex, time varying components of supply like wholesale market costs. Retailers have also tended to prefer simple price structures for network costs which has led to slow movements in retailers shifting the customers from flat tariffs to Time of Use and more efficient forms of pricing.*

Network tariff design and assignment seems locked in a paradigm that the customer should solve the networks problems when in fact the reverse is the case. Retailers are not the reason we have simplified tariffs; their customers are. Retailers in a competitive market cannot share the monopolist networks view, and they acutely understand that most customers would like to limit their exposure to bill fluctuation. As St. Vincent's observed in their 2014 submission to the Victorian Government on mandated flexible pricing:

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<sup>12</sup> <https://www.energynetworks.com.au/resources/fact-sheets/electricity-network-tariff-reform-handbook-at-a-glance/>

*There appears to be a policy framework that has identified consumers (and their consumption patterns) as the problem, and a policy response that wants other parties (industry or jurisdictional governments) to make consumers change. The problem with an energy policy that focuses on the consumers as the current problem as well as the future solution, is that the problem cannot be fixed without forcing some to be worse off (through the introduction of a mandatory tariff policy). An energy supplier in a competitive market, on the other hand, would want to offer products that consumers actually want, and as long as they are allowed to do so, consumers will not choose the product that makes them worse off, and subsequently, offer a solution.<sup>13</sup>*

We can safely assume that not everyone shares an equal appreciation for the artisanal flair of network pricing managers. Retailers also set wholesale price components to shield customers from volatility so we can be assured it's not just intellectual laziness. However, it is refreshing that at least the customer isn't singled out as the problem this time.

The AEC has not supported the mandatory application of a "prices for devices" approach to either network tariff design, nor to their mandatory reflection in retail tariffs. Network cost reflective tariffs, with the application of tariffs over the entire network, has the practical effect of penalising customers in network locations where there is no challenge, and creates costs for these customers even when they are not contributing to the actual problem as well as not providing them with any commensurate network benefits. Such tariffs are not a new idea and may also lock in poorly designed charges that send the wrong investment signals to customers in other parts of the network, as was historically the case with off peak storage and hot water tariffs.

Batteries, EV's, and solar may create significant inequities and costs between different customer classes, but network tariff assignment is not really a solution. This is especially where, as with EV's, we haven't yet really identified the problem it is that they (tariffs) are expected to solve. And if we are to take inspiration from the great Andy Warhol as suggested in the Argyle Report,<sup>14</sup> we should be mindful that just as painting cans of soup in pop art style didn't change the contents or dining experience of a single actual can of Campbells, rolling a network tariff in glitter doesn't make it any easier for a customer to digest or to respond to.

Any questions about this submission should be addressed to David Markham by email to [david.markham@energycouncil.com.au](mailto:david.markham@energycouncil.com.au) or by telephone on (03) 9205 3107.

Yours sincerely,

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<sup>13</sup> Submission to the Government's Energy White Paper consultation: Green Paper, November 2014  
[https://www.vinnies.org.au/icms\\_docs/204747\\_Submission\\_to\\_the\\_Government\\_s\\_Energy\\_White\\_Paper\\_consultation.pdf](https://www.vinnies.org.au/icms_docs/204747_Submission_to_the_Government_s_Energy_White_Paper_consultation.pdf)

<sup>14</sup> *Network Tariffs for the DER Future*, Argyle & Endgame, Report to the AER 2022, P.38