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Energy Agency

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ARENA submission to AEMC's consultation paper on Electricity Pricing Review

The Australian Renewable Energy Agency (ARENA) supports the AEMC's review of "Electricity pricing for a consumer-driven future" and notes its importance to consumers, retailers and DNSPs.

We agree with the challenge outlined in chapter 2 of the consultation paper and the future-focused approach proposed in chapter 3.

Where ARENA has more to say is in response to a few of the sections in chapter 4, namely:

- Question 4 – four key elements in a consumer energy future
- Section 4.2.3 – theory can be difficult to implement in the real world
- Section 4.3.2 – what should future network cost recovery look like?
- Section 4.4 – role of DNSPs and retailers in the future.

Four key elements in a consumer energy future (response to question 4)

In response to question 4 about the possible future of the retail market, we have summarised four key elements needed for the future retail market, derived from the lessons learned in ARENA-funded demand flex projects. We see and support a future that includes:

1. a vibrant, competitive retail market where retailers create innovative tariffs to attract customers and customers can find a retail tariff that suits them
2. a wide variety of retail contract options from full market exposure (SRMC network and wholesale market passthrough) to fixed prices to EaaS (subscription) and no-bill options
3. both SRMC and LRMC-based network tariffs available to networks to better reflect the diversity of consumers

4. congestion pricing (SRMC-based network tariffs) to keep power flows with network limits (via DOEs), soak up excess solar and encourage participation by batteries (home or EV).

Is it difficult to price according to costs in the real world? (response to section 4.2.3)

The paper states that it is difficult to implement the theory of cost-effective tariffs in the real world. We agree tariff creation is a complex and difficult issue.

In one sense, we think it is more difficult to justify tariffs that don't reflect costs at the time they are accrued (for instance, applying 10c/kWh network tariff on consumption while the network is switching off). Given that networks' revenue is regulated, if consumption-based tariffs recover more or less than the costs customers can avoid by changing their use of electricity, then some consumers will be winning at others' expense (a cross subsidy is occurring). At face value, the outcome is both inefficient and unfair.

However, we agree with the leading statement with respect to LRMC-based tariff regimes. LRMC pricing is a forward-looking price, accounting for expected demand and future network augmentation to accommodate it. The demand forecasts and future costs are speculative (increasingly so during this uncertain period of transition). Consequently, it is understandable that networks have applied a variety of assumptions that create a variety of (LRMC) cost-reflective tariffs. However, ironically, this variation and the mismatch between immediate and future conditions makes it difficult to argue that LRMC tariffs are cost-reflective.

What should network cost recovery look like in the future? (response to section 4.3.2)

ARENA observations based on knowledge sharing from our projects:

- Consumption-based tariffs create perverse signals and outcomes for consumers when they both generate and consume electricity
- Tariffs that more precisely reflect network costs are less complex from the consumer's perspective
- The existing rules should be changed immediately to allow SRMC-based network tariffs.

Allocating network costs based on consumption (flat tariffs, TOU, demand peak, controlled, critical peak) no longer makes sense when consumers are both generating and consuming electricity (we note some of them make little sense even without generation). They complicate tariffs and are both inefficient and unfair. They create a perception for consumers that they are being overcharged because much of the difference between the export price and retail tariff is caused by a consumption tariff charged by networks. The irony is that the congestion threat occurring or expected by DNSPs is not from increased consumption but from too much export, which consumption tariffs are inadvertently encouraging.

We also observe that some consumers face both SRMC-based prices (wholesale market prices) and LRMC-based prices (network tariffs) at the same time. This creates situations where they face both a cost to export and a cost to consume electricity in the same interval. This doesn't make sense in theory or practice and creates a perverse incentive to do neither (using a

battery for self-consumption or physically wiring shared solar output in apartment complexes to each apartment switchboard).

We note tariffs that more precisely reflect network costs are more complex from a regulatory and technical perspective but the market integration trials (Edge, Edith, Converge, Symphony), some of which ARENA supported, all show congestion pricing is feasible in distribution networks. SRMC-based network tariffs simply reflect marginal losses and congestion and the calculations are well understood. They are in some ways easier to understand from a customer's standpoint as SRMC prices would always reflect relative scarcity at the customer's location in the grid (under a wholesale passthrough tariff) and there could be just one price rather than two (ie separate import and export prices).

Under SRMC pricing, the future cost component of LRMC-based network tariffs is replaced by congestion rents and the (larger) residual is best allocated in a way that minimises changes in generation and consumption in real-time. This might be as simple as a fixed daily charge according to existing customer categories that roughly reflects the size of the connection. In comparison, there is no consumption tariff that does not create complications and perverse incentives when a customer has a battery and/or rooftop solar PV.

Should network tariffs be prescriptive or adaptable? (response to section 4.3.2)

We think the pricing principles should allow for networks to apply SRMC pricing and provide more guidance about how LRMC and SRMC prices should be determined and applied.

The pricing principles in [clause 6.18.5 of the rules](#) require all network prices to be based on LRMC. This prohibits networks from adopting SRMC-based network pricing (aka congestion pricing on the back of dynamic operating envelopes as per the DEIP Market Integration trials), which should be more efficient than LRMC-pricing in export-constrained areas of the network.

Moreover, when export congestion is occurring, networks continue to charge consumers for electricity while free electricity is being curtailed. There are parallels with a situation in New Zealand in December 2019, when Meridian Energy was investigated for spilling water over its Waitaki dam while pricing its generation at over \$100/MWh (10c/kWh). While Meridian Energy argued that it was pricing at LRMC, rather than SRMC, this was not well received by competing retailers and their customers.

LRMC pricing necessarily reflects average conditions over a lengthy period that cannot reflect variation in network and market conditions at any specific moment in time. In the NZ example and the example of solar curtailment in Australia, charging consumers for free electricity that otherwise goes to waste is both inefficient and inequitable.

Can focusing on efficient tariffs lead to outcomes where not all consumers receive the benefit of an efficient system? (response to section 4.3.2)

The short answer is, perhaps, it can. However, the opposite is also true. Network tariffs that do not reflect costs create cross subsidies. If the tariffs are higher/lower than the cost avoided then some are suffering/benefitting at others' expense because networks are regulated and get to cover their reasonable costs (approved by the AER).

Our project experience with respect to the unintended perverse incentives LRMC-based tariffs create suggests more direction is required to reduce these incentives and outcomes, given the very large contribution consumers are expected to make to the transition via electrification (investment in generation, storage, load shifting) in the next couple of decades.

The role of DNSPs and retailers in the future (response to section 4.4)

In our experience, we see no pressing need to make sweeping changes to the role of DNSPs and retailers for the entry of DSOs. As discussed above, we think DNSPs should be open to both SRMC and LRMC tariff-making principles, which would require changes to the (network) pricing principles in the rules. However, they should continue to be asset owners prevented from operating and trading in local, regional and wider markets due to the significant conflicts of interest holding these dual roles creates.

We do not think it is in the best (long term) interest of consumers to require retailers to pass-through network tariffs to their customers undisturbed, or to require retailers to absorb the cost of network tariffs charged to their customers that have been changed without their explicit-informed consent. We feel the extra administrative costs created by this requirement will largely be passed on to consumers, one way or another, for little benefit. In our experience, we have not been able to find a good reason why customers should not be able to choose retail tariffs created and offered by retailers that, to a small or large degree, reduce the variation in cashflows otherwise associated with electricity and network use in the wholesale market and under the rules.

Other ARENA projects that offer insights for the review

We note there are other perspectives and insights from other projects we are supporting (eg community batteries, regional microgrids, electrify 2515 community pilot), available on our [knowledge bank](#), that we would like to discuss with you.

About ARENA

The Australian Renewable Energy Agency (ARENA) was established in 2012 by the Australian Government. ARENA's function and objectives are set out in the *Australian Renewable Energy Agency Act 2011*.

ARENA provides financial assistance to support innovation and the commercialisation of renewable energy and enabling technologies by helping to overcome technical and commercial barriers. A key part of ARENA's role is to collect, store and disseminate knowledge gained from

the projects and activities it supports for use by the wider industry and Australia's energy market institutions.

Please contact Greg Williams, Principal Policy Advisor, at greg.williams@arena.gov.au if you would like to discuss any aspect of ARENA's submission.

Yours sincerely,

A handwritten signature in black ink that reads "Lyndon Collyer". The script is cursive and fluid.

Lyndon Collyer

General Manager (Acting), Project Delivery
Australian Renewable Energy Agency