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Total Environment Centre's National Electricity Market advocacy

Established in 1972 by pioneers of the Australian environmental movement, Total Environment Centre (TEC) is a veteran of more than 100 successful campaigns. For more than 40 years, we have been working to protect this country's natural and urban environments: 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 since 2004, arguing for greater utilisation of 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

While the AEMC's approach in the Contestability rule changes consultation paper (the consultation paper) is effectively to ask, What is wrong with the current rules? and, How can we fix them?, TEC wishes to take a very different approach. The Key Concepts report from the ENA/CSIRO Network Transformation Roadmap (NTR)¹ envisages a future of zero net emissions by 2050 with incentives for high grid utilisation and lower consumer bills while also accepting that up to 50% of all electricity is generated by customers and with networks paying distributed energy resources (DER) customers over \$2.5 billion per annum for grid support services.

Taking the Key Concepts report as our starting point, we would instead ask the question, What regulatory reforms would be needed to facilitate a future grid with a high uptake of DER? Without a clear focus on the future, there is a high risk that any regulatory reforms arising from this current process will be inadequate to deal with the massive market reforms needed to drive compliance with Australia's Paris climate change commitments. TEC is once again disappointed that the AEMC continues to turn a blind eye to the need for the national electricity rules (NER) to integrate Australia's legally binding international obligations, which are consistent with the long term interest of consumers and the 2004 Australian Energy Market Agreement.

Clearly, major regulatory reforms will be required to facilitate such a massive transformation. The Key Concepts report proposes, inter alia,

By 2027, customer interests are protected by vigorous competition between an active set of commercial players with the opportunity to deliver enhanced customer and commercial value through building and seeking out economies of scope and scale.

A lighter handed framework of economic regulation is applied to a reduced set of services, enabling greater flexibility and innovation while delivering outcomes that - because of an alignment of incentives - benefits consumer and networks interests.

Where common assets underpin the delivery of these services (and universal service obligations), they are efficiently funded through a well-understood, stable regulatory compact.

However, as stated in TEC's Networks + Batteries position paper in regard to calls for less regulation,

This argument tends to be expressed in the form of "Competition = good, regulation = bad", sometimes ignoring the fact that effective regulation can be key to competition. If monopoly businesses want less regulation, they in turn need to be less monopolistic... In other words, if networks want to enter the consumer-side battery market, they need to relinquish control over the means by which consumers connect to the grid.²

Translated into the current rule change process, if networks want less regulation in order to gain more access to the rapidly evolving distributed energy resources (DER) market they may have to wear more competition not only for new products and services, but also for traditional network services. Both the COAG EC and the AEC rule change requests endeavour to facilitate the uptake of DER by limiting the extent of network control of new products and services, but both struggle to find an appropriate mechanism to do so, especially given that the AER currently regulates services

¹ CSIRO and Energy Networks Australia 2016, Electricity Network Transformation Roadmap: Key Concepts Report, i and iv.

² TEC, Networks + batteries: What's best for consumers? Position paper, October 2016, 13-14.

rather than assets, and new technologies like batteries arguably do not provide substantially different services, rather new ways to provide services (such as peak demand management and ancillary services) that already exist.

From the perspective of new entrants into the DER market – particularly prosumers, but also microgrid proponents, energy management system (EMS) and trading platform developers, etc – choice and control are key.³ To maximise these values it is critical to ensure a competitive and dynamic market rather than one controlled by monopolistic networks. To the extent that the service classification regime determines the balance between network control versus competition, it is important to get this balance right. But the current regime is an impediment to the greater uptake of DER, because (a) it limits the extent of competition for services, and (b) its labyrinthine complexity makes it difficult for new entrants to easily understand their current and potential future markets.

There are potentially two ways to reduce the complexity and increase competition: to change the way the AER classifies services, or by requiring or allowing the AER to classify some assets as well as or instead of services.

What is a service?

Before considering these options in detail, we need to take issue with the assertion in the consultation paper that the AER's current service classification regime is built around services to consumers:

It is the services provided by DNSPs **to customers** that are classified within distribution service classification. The inputs that a DNSP uses in providing distribution services to customers are not classified. Equivalently, services that are provided **to the DNSP** as inputs to providing services to customers are not classified. For example...

- If a customer owns a storage device and uses it to provide a DNSP with network support, this cannot be classified because the customer is providing the DNSP with a service, not the other way around. Similarly, if a DNSP invests in storage assets and uses them to provide network support, this is not a service that can be classified, because it is an input to network services and not a separate service provided to a customer.⁴

However, we can find no support in the NER for the assertion that “It is the services provided by DNSPs **to customers** that are classified within distribution service classification.” A distribution service is rather unhelpfully defined in the Glossary to the NER as “A service provided by means of, or in connection with, a distribution system”, while services are not separately defined.

Service classifications are the subject of S.6.2 of the NER. But this is Step 2 of the process. As Step 1 of its framework and approach (F&A) process, the AER “must determine whether a service is a ‘distribution service’.” As a note to S.6.2.1 explains, “If the AER decides against classifying a distribution service [i.e., is termed by the AER a ‘non-distribution service’], the service is, subject to Chapter 5A, not regulated under the Rules.” In practice the main services classified as non-distribution in Step 1 include “energy related services” such as arbitraging, and transmission services. (However, this is already problematic. For example, the arbitraging of energy from grid-side batteries to or from the spot market is classified as an “energy related service” and is therefore classified as a Non-distribution service, even though it is dubious to define grid-side arbitraging as a “A service which is *not* provided by means of, or in connection with, a distribution system.”)

In Step 2, the AER classifies distribution services according to whether

- They benefit all customers so that the distributor may attribute costs to all customers (direct control and standard control).
- The user benefiting from the service pays (direct control and alternative control).
- Customers and distributors can negotiate the provision and price of some services (negotiated distribution service).⁵

(Otherwise they are unclassified.) As the COAG Energy Council explains,

In classifying distribution services, the AER must have regard to the ‘form of regulation’ factors in the NEL. These factors provide guidance to the AER in deciding whether a service has the characteristics of a service that should be regulated,

³ See, eg, the report on the residential battery market from KPMG for ECA: [link]

⁴ Consultation paper, 16.

⁵ S.6.2.2 of the NER.

such as barriers to entry, the relative market power of networks and customers, the availability of substitute services, and the information available to networks and customers in coming to agreements.⁶

In practice, the AER currently classifies most metering and connection services as unregulated; some metering and all public lighting and ancillary network services as alternative control (ACS); and network services and augmentations as direct control (DCS). Because networks can choose whether to obtain DCS through capex or opex, the consultation paper emphasises that classifying energy storage, say, as an unregulated or non-distribution service will achieve the opposite of the rule change proponents' intention because it would prevent them from obtaining batteries as opex and would encourage them to add them instead to their capital assets (RABs).

But let us take a step back. In effect, the AER concludes that everything that networks currently or previously do other than metering, connections, public lighting and ancillary services are (a) services to consumers that (b) "has the characteristics of a service that should be regulated". These activities – such as planning, constructing, maintaining and augmenting the network – are therefore all classified as DCS.

This is how the AER currently interprets Section 2F – Form of regulation factors of the National Electricity Law (NEL). It applies S.2F in light of Clause 6.8.1(b)(2)(i) of the NER, "the classification of distribution services". However, C.6.8.1 does not specify how the the AER should classify these services – ie the categories (DCS, ACS, etc.) into which services should be allocated.

We therefore conclude that the absence of any definition of either services or the categories of services in the NEL and the NER, the AER has considerable scope to adopt a different approach; one that may be more amenable to DER. To start off with, we view the category of "network services", which includes network planning, construction, operation, augmentation, etc., as a leftover of all the services not otherwise excluded (public lighting and ancillary, metering and connection services), and therefore does not in any way conform to the AEMC's characterisation of the AER service classification regime as being based on "services provided by DNSPs to customers".

The consultation paper goes on to note that there is already a grey area recognised in relation to metering and connection "services": "the distinction between an input to a distribution service and the distribution service itself can be unclear at times."⁷ We concur, and argue that energy storage could fall into the same category and therefore be capable of being separately classified.

Option 1: A new service classification regime

In our view it is time to reconsider the service classification regime and to come up with a more DER-friendly one. The good news is that this may not require significant rule changes. First of all we need to consider what constitute services consumers need or want and which of these are best provided by monopoly networks, the competitive market, or a combination of both. The service classification regime should begin by identifying the services valued by consumers, such as *access to the grid, metering, a safe and reliable supply, peak load management, energy storage and trading, autonomy/control, and access to renewable energy*. Some of these services could be only or best provided by monopoly distributors, whereas others could be better provided through the competitive market; but unless the process begins with a blank slate review of what constitutes a service, the status quo is likely to prevail and the uptake of DER will be hamstrung. (Here we exclude services associated with self-consumption, including consumer-side batteries, since these do not require a grid connection.)

Service	Inputs	Preferred provider/s	Suggested service classification
Access to grid	Connections	DNSPs, retailers or others	Contestable service
	Metering	DNSPs, retailers or others	Contestable service
Safe and reliable supply	Planning, constructing, maintaining, replacing and augmenting the network	DNSP	Regulated service

⁶ COAG Energy Council, Contestability of energy services rule change request, 12. The Form of regulation factors are S.2F of the NEL.

⁷ Consultation paper, 16.

	Energy storage	DNSPs, retailers or others	Contestable service
	Ancillary services*	DNSPs, retailers or others	Contestable service
Affordable supply	Access to range of retailers + tariffs	Retailers or other traders	NA – not relevant to service classifications
	Peak demand management	DNSPs, retailers or others	Contestable service
	Energy storage	DNSPs, retailers or others	Contestable service
	Saving energy	Retailers or other traders	NA – not relevant to service classifications
Trading platform – ie, sale of electricity into + purchase of it from the grid	Software to access the spot market	Retailers or other traders	Contestable service
Sustainable supply	Access to local + centralised renewable energy generation	DNSPs, retailers or others	NA – not relevant to service classifications
Street lighting	Street lighting	DNSPs, retailers or others	Contestable service
Acces to smart grid services	Smart controls on consumer side + grid side (eg in public lighting)	DNSPs, retailers or others	Contestable service

* Voltage and frequency control and power factor correction

Obviously this typology is not exhaustive or entirely internally consistent; it is intended to start a broader discussion about an alternative approach. Essentially, we propose there be only two classifications: *regulated* and *contestable* services.⁸ Regulated services would comprise what are currently standard control services including planning, designing, constructing, operating and maintaining the network. Contestable services would comprise what are currently alternative control services (such as ancillary network services, public lighting, metering and possibly connections) as well as negotiated and unclassified services. Network extensions and augmentations could arguably fit into either category. Network services would be subject to a revenue cap, while contestable services would be free of revenue or price caps.

In relation to the issue (highlighted in the consultation paper) that, while direct control services can be procured by networks as capex or opex as part of their regulated revenue, the cost of other services cannot be recovered through either capex or opex,⁹ we would argue that it is entirely appropriate – and in tune with the NTR – that networks receive guaranteed revenue for a smaller number of core services or activities for which there is no realistic prospect of effective competition, while they are able to earn additional revenue from non-core services or activities such as investing in grid-side batteries where it is able to compete in the open market, either directly or through ring-fenced entities. Regulated services could, as at present, be provided through either capex or opex. Where an asset such as a grid-side battery provides both regulated services (such as peak load management) and contestable services (such as access to the wholesale market for arbitraging), only the value of the regulated services would be recovered through capex or opex in the AER's revenue determination.

Finally, the treatment of consumer-side DER such as consumer batteries would be most easily dealt with by more clearly defining the extent or limits of distribution networks. In our view this should be the customer's meter or connection point. This would render it impossible for networks to own or operate consumer-side regulated services. It would not prevent them from bidding, either directly or via ring-fenced entities, to provide consumer-side services such as batteries, EMS and direct load control (DLC) appliances. However, it would need to compete to provide these services. These issues will be dealt with in more detail when the AEMC begins public consultations on Western Power's Alternatives to grid supply rule change request.

Option 2: Separately regulating DER

Alternately, the NER could be changed so that the AER to distinguish between

⁸ Here we retain the existing terminology, which would obviously be replaced if our first recommendation is adopted.

⁹ AEMC, Contestability rule changes consultation paper, December 2016, 13-14.

1. Assets and services essential to the operation of the network to provide a safe and reliable power supply, and which are not amenable to competition (poles/wires and substations) and which should be the subject of a revenue or a price cap as periodically determined by the AER (and like existing DCS could be procured as either capex or opex); and
2. All other assets and services, which should be procured as opex only and open to competition.

The problem with this approach, given the AEMC's understandable preference for technology neutral rules, is that determining that batteries, say, can only be procured as opex involves defining a list of opex-only assets rather than services. Also, batteries provide a number of value streams, some of which are specific to the requirements of networks (eg, some ancillary services) and therefore may not easily be opened to competition. It may be possible to use the shared assets and cost allocation regimes to allocate costs and revenues between regulated assets and contestable services, but the question remains: Which assets or services should be the subject of this new rule?

Our best suggestion at this point is, once again, that network businesses should be required, as part of the F&A process at the start of each revenue determination process, to justify the assets they alone should own and operate, rather than the status quo smorgasbord of DCS being rolled over as the default position. All other services and related inputs or assets should be contestable, and the network businesses should be under no illusion that the future will look like the past; although they may compete for the increasing share of contestable services through ring-fenced affiliates.

A longer term solution?

Given that the main reason for the rule change proponents' proposals is to ensure a high level of competition in the DER market and their recognition that the best way to do this is by preventing networks from adding DER such as batteries to their RABs, in the long term it would be appropriate for the AEMC to closely consider whether the NEM should move away from the capex versus opex war that dominates much of the regulatory landscape at present and towards Ofgem's system of "totex" or total expenditure revenue determinations, wherein networks are allocated a certain revenue every regulatory period and can decide whether to spend it on capex or opex – ie, whether they prefer a short term, low risk solution (opex) or a longer term solution (capex) with potentially higher rewards but also risks (in relation to the rate of return and the potential for stranded assets).

Our only initial concern with a move to totex network revenues is that it still gives networks considerable control over assets and services that could potentially be provided by the competitive market. We therefore consider that totex is unlikely to be the only solution to this dilemma. In our view it is probably inevitable that there is a bifurcation into monopoly hardware (assets) and competitive software (services), and that the former constitutes a gradually declining share of energy system, with networks having to enter the latter competitive market via ring-fenced affiliates rather than directly.

Conclusion and recommendations

Whichever of the two options above (or another) is chosen by the AEMC in making a determination on the current rule change requests, the definition of services and the service classification regime are both badly in need of review. We therefore recommend that

1. The AEMC and AER should work with stakeholders on a review of what constitutes a distribution network service.
2. The current service classification regime should be simplified and replaced, preferably with only two categories, Regulated and Contestable Services.
3. In the short term, the AEMC should consider making a rule which requires networks to procure certain assets or services as opex only.
4. In the longer term, the AEMC should consider whether capex and opex may be better balanced by the introduction of periodic "totex" or total expenditure revenue determinations in place of the various existing incentive schemes intended to balance capex and opex.

5. As part of the current rule change processes, the AEMC should commission a study of how the issue of contestability for DER is being handled in other jurisdictions – particularly but not only in those with similar market structures.

We recognise that there are more questions than answers in this submission, and look forward to further engagement with the AEMC and other stakeholders as more specific options for reform are developed. In doing so we encourage the AEMC to consider competition as the default position for regulating DER, and to think very carefully about quarantining only those services which the monopoly network businesses can alone provide – rather than tweaking the status quo, which could entrench the privileged position of networks for decades to come.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Jeff Angel', written in a cursive style.

Jeff Angel
Executive Director