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Response to AEMC draft rule determination[1]

Access, pricing and incentive arrangements for distributed energy resources ERC0311

Dr Ron Ben-David[2,3]

Professorial Fellow, Monash Business School

ron.ben-david@monash.edu

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INTRODUCTION

This submission does not argue for or against network export prices. Instead, this submission highlights how the draft decision has not put in place the foundations for a final decision on network export prices. Unless those foundations are properly established, a decision to proceed with network export prices will doom consumers, networks, retailers and the regulator to a Sisyphean future of endless and futile regulatory processes.

The AEMC's draft decision seeks to respond to three rule change requests. These requests were submitted by SA Power Networks (SAPN), the St Vincent de Paul Society Victoria (SVDP), and Total Environment Centre (TEC) together with the Australian Council of Social Service (ACOSS). The draft decision details the rule change proposals and the concerns that variously motivated them. The proponents' concerns variously include:

- ***Equity*** – concerns that customers (including vulnerable customers) without distributed energy resources (DER) are cross-subsidising customers with DER, and DER owners who export surplus electricity into the grid are not paying their 'fair share' for that service
- ***Recognition*** – concerns the National Energy Rules (NER) fail to recognise network export services despite the increasingly widespread export of electricity generated by households' investment in DER

[1] Australian Energy Market Commission (AEMC), *Access, pricing and incentive arrangements for distributed energy resources, Draft rule determination*, 25 March 2021

[2] The views expressed in this submission are those of the author and not the Faculty or its staff.

[3] Information about the author is provided at the end of this submission.

- ***Curtailment*** – concerns about the inherent capacity of network infrastructure to support reverse power flows without additional investment, leading networks to impose constraints on the quantum of electricity that can be exported into the grid[4]

- ***Efficiency*** – concerns that customers are not facing cost reflective prices when using network services, leading them to make inefficient choices about the use of those services and investments in DER

- ***Innovation*** – concerns that network service providers are unable to offer consumers[5] innovative service and pricing packages that promote and reward efficient use of the electricity network.

This submission addresses these themes in the following five sections. Each section ends with a recommendation (see next page) aimed at promoting greater rigour in rule-making for DER.

- Section 1 discusses the potential cause of inequity. It finds the source of any claimed inequity lies deep within existing regulatory rules and practices. The growing uptake of DER draws attention to the "original sin" which stains the regulatory framework. The proposed rule changes fail to come to terms with that reality.

- Section 2 supports the need to recognise network export services in the National Electricity Rules (NER) but contends the AEMC should also seek to establish explicit consumer rights over access to those services.

- Section 3 emphasises the need for clarity about the nature and materiality of expenditure required to support network export services. Without this level of detail, it is impossible to tell whether the case for export tariffs is real or imaginary.

- Section 4 highlights the claimed benefits of the proposed reforms are sensitive to behavioural assumptions about how customers, retailers and other intermediaries respond to price signals. The final decision should identify the consequences for consumers if export price signals do not operate as assumed.

- Section 5 raises concerns about how network export tariffs (particularly negative export tariffs) will be set under the proposed rule changes. It may be the case that they are indeterminable.

These are not trifling concerns. They attend directly to the community's confidence in the rule-making process. Failure to address these matters because they may require amendments to the National Electricity Law (NEL) – or kicking the can down the road to the AER – will doom the integration of DER to a never ending regulatory cycle of irresolvable claim and counterclaim.

The submission concludes with questions about whether more fundamental reform is required in response to the disequilibrium currently bedevilling the economic regulation of network services in the National Electricity Market.

[4] The TEC- ACOSS rule change request also expressed concern that curtailment of DER-supplied electricity resulted in wasted opportunities for reducing greenhouse gas emissions.

[5] As well as retailers and other third party service providers (eg. aggregators).

RECOMMENDATIONS

Recommendation 1

Before the proceeding to a final decision, the AEMC should recommend that governments amend the National Electricity Law to establish new, binding pricing principles to guide the recovery of sunk network costs and residual revenues.

Recommendation 2

Before proceeding to a final decision, the AEMC should recommend that governments amend the National Electricity Law to explicitly establish:

- **a customer's right to access network export services from their network service provider**

and if not, then:

- **the circumstances in which such rights may be denied, and**
- **a customer's right to challenge the denial of access to network export services by their network service provider.**

Recommendation 3

Before proceeding to a final decision, the AEMC should establish:

- **the scale and immediacy of network congestion preventing DER exports, and**
- **the nature and materiality of the expenditure required to overcome any such congestion.**

Recommendation 4

Before proceeding to a final decision, the AEMC should examine:

- **how the claimed benefits of network export tariffs will be realised in a vertically separated market**
- **the potential consequences if consumers and market participants do not respond to network export price signals as anticipated in the draft decision, and**
- **the types of protections that would be required under these circumstances.**

Recommendation 5

Before proceeding to a final decision on (negative) network export tariffs, the AEMC should:

- **undertake detailed examination into their economic and regulatory plausibility, and**
- **develop principles for inclusion into the National Electricity Law to guide their use and the recovery of these expenditures from consumers.**

1. Reckoning with the original sin of price regulation

Notions of equity are central to the rule change proposals submitted to the AEMC. Concerns about equity similarly pervade the submissions received by the AEMC. Those concerns have also spilled into the public debate following the draft decision. The draft decision captures these concerns with a quote from the TEC/ACOSS proposal:

> "equity issues are arising, especially because people without DER are paying a higher proportion of the costs of the grid that everyone depends upon." (p.130)

The AEMC goes to considerable lengths to ensure stakeholders' concerns about equity are carefully reflected in the draft decision, but concludes these views are mixed when it comes to the role of export tariffs.

> "Some stakeholders agreed costs could be allocated more equitably but are less clear if applying export charges is the best approach to minimise cross-subsidies between DER and non-DER households." (p.197)

Despite giving extensive coverage to stakeholders' views about the role of network export tariffs in addressing concerns about equity, the AEMC appears reticent to share its own views on this matter. There are two notable exceptions, however.

> "Enabling distribution networks to offer two-way pricing for export services…is designed to reward customers for actions that better use the network or improve its operations, and allocate costs **equitably** and efficiently."[6] (p.ii)

> "**Equity** issues and notions of fairness discussed…are not straight-forward and often subjective. All consumers may be better off overall if the AER approves expenditure for DNSP proposed DER-related projects that promote 'net market benefits' – for example, whereby higher network costs are more than offset by lower wholesale market prices. So, increased DER should lower everyone's electricity bills overall." (p.185)

It is unfortunate **the AEMC has not tested stakeholders' claims about equity** and the impacts of DER ownership (self-consumption), electricity exports and exports tariffs. It would be helpful if the AEMC explored how, or whether, these factors bare any relationship to household income or wealth – that is, whether their impacts can be expected to be progressive, regressive or varied.[7]

Instead, the AEMC excuses itself from this responsibility by observing its considerations are limited by the NEO's exclusive focus on efficiency.

> "The Commission is limited in its ability to consider notions of equity and fairness … otherwise than with reference to efficiency." (p.16)

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[6] Where the term "two way" refers to "reward[ing] owners of distributed energy resources for sending power to the grid when it is needed and charging them for sending power when it is busy." (see p.ii)

[7] Also, and as noted by farrierswier (p.34), the extent of any cross-subsidies between customer groups will depend on their respective elasticities of demand. It is not self-evident, however, that these elasticities are a function of income or wealth. It follows, therefore, that improvements in equity cannot be assumed a priori following the introduction of network export tariffs and reductions in consumption tariffs. This too, is an area requiring further exploration by the AEMC.

A few chapters later, the draft decision ties this focus on efficiency to the Network Pricing Principles (NPP) which require:[8]

> "Each tariff must be based on the long run marginal cost of providing the service to which it relates to the retail customers assigned to that tariff" (p.120)

At no point, however, does the draft decision explore how extant regulatory rules and practices are contributing to distributional inequities. This is an important and unfortunate omission which has led the draft decision in the wrong direction. DER hasn't created a new problem for regulated prices. It has exposed an old one.

DER has exposed **the 'original sin' of network price regulation.**

The original sin is reflected in the regulatory disregard shown towards how residual revenues and sunk costs are recovered from consumers through network charges, and the distributional impact these charges have on consumers.[9] This disregard prevails despite residual costs representing around half (or more) of all network revenues recovered from electricity customers. Alternatively stated, the efficiency principles cited throughout the draft decision only attend to around 50 per cent (or less) of the total monies networks recover from electricity customers.

The original sin of price regulation can be summarised by the following observations.

- Basing a tariff on the long run marginal cost (LRMC) of a service is not a law of nature. It is merely an idea that stuck among economists because it seemed to align with notions of efficiency as described by theories of a firm operating in a competitive market.[10]
- The LRMC does not readily translate from the textbook to the so-called "real world" occupied by networks, consumers and regulators. None of the competing methodologies for estimating the LRMC are verifiable.
- As the draft decision notes, the pricing rules include other principles that involve trade-offs in how network tariffs are set (at least in the short term).[11]
- While the rules describe how variable tariffs should be set, they offer no guidance on the recovery of residual revenues beyond requiring that their recovery cannot be pursued in a way that distorts price signals from variable tariffs.[12]

These arrangements have led to two important outcomes for consumers in the NEM.

1. Regulated variable tariffs are, in all probability, also recovering some proportion of networks' sunk costs.
2. A vast fortune in residual revenues is recovered from consumers every year through a fixed charge per property.

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[8] NER 6.18.5(f)

[9] Residual revenue equals the regulatory revenue allowance not recovered through variable charges. That is:
Residual revenue allowance = (Total regulated revenue allowance) – (variable charges x volume supplied)

[10] Self-evidently networks are natural monopolies.

[11] On p.120-122, the draft decision explains how the focus on LRMC (in NER 6.18.5(f)) must be balanced against the impact of tariffs on customers and the understandability of tariffs (6.18.5(h) and 6.18.5(i), respectively).

[12] NER 6.18.5(g)(3)

The smearing of sunk costs is not necessarily inconsistent with the regulatory requirement that tariffs should be based on LRMCs. Likewise, this smearing may not be inconsistent with community standards of 'fairness' which appear to hold that consumers who use more electricity should contribute more to the recovery of sunk costs.[13] However, this smearing also means customers who can avoid variable charges (say, by investing in DER) contribute less than other customers to the recovery of sunk costs.

These arrangements have also led to residual revenues being recovered through fixed charges. These charges are set irrespective of a consumer's income or wealth. In this sense, the recovery of residual revenues is highly regressive (or inequitable). To be clear, no matter how residual revenues are recovered, they will inescapably have distributional impacts. The current approach, however, is amongst the most regressive of all options.[14]

These are the consequences of the original sin of price regulation.

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Under current regulatory pricing principles, it is not surprising that networks can propose, and the AER will accept, Tariff Structure Statements (TSS) that embody variable tariffs that exceed the variable network costs incurred because of users' consumption of network services.

The heated arguments surrounding the proposal to introduce network export tariffs are the direct consequence of the original sin of price regulation. Had the regulator not previously allowed sunk costs to be smeared into variable charges, there would be no issue today with:

- claims of DER owners avoiding their 'fair share' of network costs because they are re importing less electricity (self-consuming)
- claims of DER exporters not contributing their 'fair share' towards network costs when not paying to export their energy into the network, and
- claims of a redistribution of sunk costs onto customers without DER.

DER means it is no longer possible to sustain the pretence that the Revenue and Pricing Principles (RPP) and Network Pricing Principles (NPP) are sufficient.[15]

While the draft decision can claim the NEO's emphasis on efficiency guides how variable network tariffs are set, this does not shelter the AEMC from the responsibility of determining how sunk costs and residual revenues are recovered from consumers. Likewise, the NEO does not shelter the AER from the distributional consequences of its regulatory decisions when accepting networks' Tariff Structure Statements and annual tariff updates.

[13] Arguably, there may be less smearing of sunk costs as networks and regulators move away from simple two-part tariffs (for example, by adopting time of use-, peak-, locational- and demand tariffs). Whether or not this is true does not alter the second element of the original sin – namely, regulatory indifference to how residual revenues are recovered from customers.

[14] Indeed, the inequitable consequences of the fixed charges used to recover residual revenues may far exceed any impacts on equity from DER.

[15] The Network Pricing Principles (NPP) appear in section 6.18.5 of the NER and summarised in section 3.2.4 of the draft decision. The Revenue and Pricing Principles (RPP) are set out in section 7A of the NEL

It may have once been possible to deny the original sin when demand for network services was steadily and reliably increasing and these services were consumed passively, unidirectionally and involuntarily. Today, each of these preconditions is being eroded by DER. The role of equity in determining prices must now be fully acknowledged and addressed.

As already noted, any tariff that seeks to recover sunk costs and residual revenues will have distributional consequences. This means it is not possible to consider export tariffs in isolation of all other network tariffs. Moreover, these distributional impacts mean the setting of tariffs (including export tariffs) is an unavoidably political exercise which requires a politically accountable process to resolve. Judgements about equity and fairness cannot be delegated to monopolistic networks to resolve under non-binding *Export Tariff Guidelines* issued by a regulator – as proposed in the draft decision.[16]

The advent of DER demands a response to the original sin of price regulation. All network tariffs should be subject to a **single, comprehensive, consistent and binding framework** that addresses matters of equity as well as matters of efficiency when recovering sunk costs and residual revenues. (Such principles are also required to address the draft decision's proposal to allow negative export charges – see section 5.)

This comprehensive pricing framework should sit in the NEL rather than in (or under) the NER. Legislation is the appropriate vehicle for reflecting the political nature of the distributional decisions forced by the recovery of sunk costs and residual revenues. By seeking to place these principles in the NEL, the AEMC would encourage a uniform approach across the NEM. Such uniformity should at least be the goal.

Development of this new framework must precede a final decision on network export prices. Failure to do so, will doom regulatory price-setting to a never ending cycle of claim and counter claim. No matter how effective Tariff Structure Statement (TSS) consultation processes have been in the past, they will become eternally mired in debates over fairness and equity when DER exports are included in those deliberations. It will become the AER's melancholy duty to referee these warring claims – a task for which it is eminently unsuited.

Recommendation 1

Before proceeding to a final decision, the AEMC should recommend that governments amend the National Electricity Law to establish new, binding pricing principles to guide the recovery of sunk network costs and residual revenues.

[16] The non-binding nature of the proposed *Export Tariff Guidelines* is outlined on p.140.

2. Recognising exports as a service will not be enough

The proposal in the draft decision to recognise exports as a service is welcomed. The basis for doing so is not well articulated in the draft decision.

Until now, network export services have been made available as a by-product of the provision of load services. The draft decision explains demand for this by-product is now exceeding the inherent limits of the network. (This claim is further discussed in section 3 of this submission.) The draft decision also explains the rules presently prohibit networks from investing to deliver export services as a standalone service.

In these circumstances, customers have only gained access to network export services at their network service provider's discretion. Conversely, networks have been able to deny customers access to export services free of regulatory oversight, while customers have not had recourse to an independent dispute resolution mechanism or a legal right of appeal.

There is no self-evident reason why this discretion should rest with networks given (i) they operate the natural monopoly infrastructure on which owners of DER are totally dependent if they wish to export their electricity; and (ii) the energy transition that lies ahead will probably benefit from investment in DER assets.

Explicitly recognising network export services, as proposed in the draft decision, will improve the operation of the access mechanism that already exists in the rules by allowing networks to include tariffs that fund export services. This mechanism also obliges networks to offer a service to customers on reasonable terms. (As discussed in section 1 and 5 of this submission, much more work is required on how such tariffs would be set.)

What remains unclear, however, is whether the draft decision is proposing that customers get access to this service 'as of right'.

On the one hand, the creation of an unfettered right of access appears to be implied in the draft decision by statements suggesting customers will be given full opportunity to choose the level of service that works best for them.

> "Distribution networks will be incentivised to deliver improved export services and the Commission expects they will offer a range of options so customers can choose what works best for them." (p.iv, para 25)

However, the draft decision also contains statements that appear to suggest a more limited right of access to export services.

> "Changes under the draft rule aim to minimise the risk of networks under-investing in export services and incentivise them to provide export services **to the extent that the overall benefits outweigh the costs**." (p.v, para 28) [highlight added]

The bolded text in this reference implies there may be limits on how much networks will be incentivised to provide export services. In turn, this would suggest that access to these services will remain limited in the future (at least to some extent) if the costs of providing these services outweigh the "overall benefits". Moreover, it is far from obvious how these net economic benefits will be assessed in the regulatory investment framework while the **electricity system**

(and market) remains in a profound state of flux. It is not clear how networks and the regulator can be confident – even on the balance of probabilities – that investments that create benefits in the short- term will prove to have been prudent in the long-term.[17] This problem is revisited in the conclusion to this submission.

There may also be other circumstances in which networks may be unable to accept all the electricity that DER owners wish to export regardless of their willingness to pay for that service – for example, when net system load breaches minimum net demand (including at a regional level).

Many questions come to mind when contemplating such circumstances. For example:

- If, for whatever reason, networks continue to have the discretion to constrain DER exports, what would be the legal basis for the exercise of this discretion; and under what governing principles would networks be required to exercise that discretion?
- How would available export capacity be rationed among DER owners[18] and how will export pricing be integrated with dynamic operating envelopes and ride-through inverter standards?
- In assessing costs and overall benefits, will networks be required to consider procuring storage services to absorb excess supply of exported electricity? If so, how would that expense be recovered and from who?

None of these questions are contemplated in the draft decision. Nor is it clear how such questions *would* be addressed under the proposed rule changes.

It seems the AEMC is proposing to defer to the regulator a final decision on who gets access to an export service, and under what terms. In other words, the regulator will be left to determine customers' rights of access to export services.

> "The draft rules propose a framework for consumers, distribution networks, and the Australian Energy Regulator (AER) to decide the type and level of services – both consumption and export – that they desire and contributes to the transition to a lower-cost electricity system." (p.iv, para 24)

While it is appropriate to amend the NER to recognise exports as a service, it is highly inappropriate to defer the determination of access rights to a regulator which is not directly accountable (or accessible) to consumers.

It is even more alarming that even though the AEMC is proposing the AER develop *Export Tariff Guidelines*, these guidelines would not be binding on the AER or network service providers.[19] This will vest monopoly networks with extensive discretion over access to, and pricing of, export

[17] Most prominently, the draft decision observes on p.185 that, "higher network costs [may be] more than offset by lower wholesale market prices. So, increased DER should lower everyone's electricity bills overall." This argument is also made by parties opposed to the introduction of network export tariffs. While it is currently true that self-consumption and DER exports put downward pressure on wholesale (pool) costs, will the same economics apply indefinitely – for example, as the wholesale market increasingly becomes a market for peaking and intermittent services?

[18] This a discretion already being exercised by networks without any regulatory oversight.

[19] Page 140

services. The rationale for doing so is simply asserted by the AEMC without supporting evidence.

> "It should not be seen by DNSPs as a compliance exercise. This could undermine the potential for engagement to be innovative and responsive to consumer views and preferences." (p.142)

While the draft decision rightly observes that, unlike consumption services, "export services are not regarded as essential services",[20] this observation does not diminish the need for clarity about consumers' right to export services. This need arises because of the market power monopolistic network providers can, and will, exercise over export services.

Recognition in the NER of export services is a necessary, but not sufficient, step to ensure consumers benefit from the proposed rule change. It leaves access to export services within a network operator's discretion to grant or deny. The AEMC should clarify whether consumers have an explicit export access right – and if not, then it must establish the circumstances in which such rights may be denied, as well as a customer's rights to challenge a network's decision to deny access to export services.

Given the fundamental nature of these rights, they should be addressed by governments in the National Electricity Law (NEL) rather than delegated to the regulator or networks.

Recommendation 2

Before proceeding to a final decision, the AEMC should recommend that governments amend the National Electricity Law to explicitly establish:

- **a customer's right to access network export services from their network service provider**

and if not, then:

- **the circumstances in which such rights may be denied, and**
- **a customer's right to challenge the denial of access to network export services by their network service provider.**

[20] Page 49

3. Establishing the facts about required network investment

One of the draft decision's key predicates is the network's inherently limited capacity to provide export services to owners of DER assets. The draft decision observes:

> "[N]etwork assets constructed to supply load have an inherent capacity to support reverse power flow without any additional investment." (p.34, footnote 90)

The draft decision clearly anticipates the need for this investment. For example:

> "Significant new DER-related expenditure is expected in the coming years for DNSPs to provide export services." (p.126)

> "DNSPs may need to invest to support increasing reverse power flows as customers continue connecting DER, especially to manage periods of minimum demand. SAPN said this expenditure would not have otherwise been required…" (p.135)

No further information is provided in the draft decision about the **nature, scale or timing** of this investment. Perhaps not surprisingly then, claims about the inherent limitations of the network have prompted considerable public debate over the true extent of the network investment required to support DER exports.

Since the release of the draft decision, SA Power Networks (SAPN) has announced it will introduce "flexible solar export arrangements".[21] Under these arrangements, DER owners will be able to export up to 10kW provided SAPN retains the option to intermittently lower these export limits to assist it to manage grid stability. Customers who prefer certainty will have the option of a fixed 1.5kW limit which will apply at all times.[22] These new arrangements will apply in constrained parts of the grid. SAPN's media release indicates it expects the flexible export option will see exports curbed from only two per cent of new installations (though this number is expected to grow with the ongoing uptake of solar DER).

The tiny proportion of households who may find their exports curbed under SAPN's flexible solar export arrangements suggests the vast majority of DER exporters in South Australia are facing no network constraints for now. The public discourse following the release of the draft decision also questions the extent of the alleged network constraints in Victoria.

The scale and immediacy of network congestion preventing DER exports is not explored or explained in the draft decision. Likewise, the draft decision does not elaborate on the nature and scale of investment required to overcome any such congestion. For example:

- Would this be capital or operating expenditure?
- Would the expenditure be largely fixed or would it vary with the quantum of exports?
- Does this expenditure exclusively enable additional export services or would it simultaneously provide additional consumption capacity?

[21] https://reneweconomy.com.au/south-australia-to-introduce-flexible-export-option-for-rooftop-solar/
[22] The new arrangements will apply to households installing rooftop solar systems for the first time, or upgrading their existing installations.

- At what geographic (network) scale would this expenditure be required?
- Does such expenditure include procurement of storage services?

These questions are not mere curiosities. The answers crucially inform the types of tariffs networks should be designing, and consumers should be expecting, if the AEMC proceeds with its proposal to enable network export tariffs.

For now, the only certainty is that implementing a regime of export tariffs will require significant effort, risks and costs for networks, the AER, retailers and consumers.

If the introduction of network export tariffs is predicated on the looming spectre of congestion-busting network expenditure, then the AEMC should first confirm the nature and materiality of that investment.

Recommendation 3

Before proceeding to a final decision, the AEMC should establish:

- **the scale and immediacy of network congestion preventing DER exports, and**
- **the nature and materiality of the expenditure required to overcome any such congestion.**

4. Reflecting the behavioural reality of the electricity market

Another central argument that appears in the draft decision in support of export prices is the threat of diminished opportunities for DER owners to export electricity into the grid.

> "Without positive action, distribution network constraints could become a bottleneck to more distributed energy resources connecting to the grid. There will be increasing instances where customers are limited in their level of exports or not be allowed to export at all." (p.v, para 27)

A few paragraphs later, the draft decision indicates this threat is already present.

> "[T]he reality is that rooftop solar owners are already paying a financial penalty from being constrained off the network at times, and this problem will become worse." (p.vi, para 39)

These statements convey the AEMC's concern about quantitative limits on DER exports – thereby laying the groundwork for an alternative approach for rationing constrained network capacity, namely, a pricing mechanism.

> "Pricing is a common regulatory tool to send efficient signals for future expenditure, and reward customers for actions that better utilise existing infrastructure or improve network operations." (p.113)

> "[P]rices can signal the network costs of providing export services and the need for future investments, and efficiently ration network capacity during peak times." (p.126)

The market and system benefits of cost reflective prices are expected to derive from:

> "…customers making informed decisions about the costs that they impose on distribution networks." (p.126)

As a result of these informed decisions, the draft decision anticipates:

> "[price signals] may incentivise customers to make efficient, complementary investments in behind-the-meter appliances – such as batteries, EVs and demand management devices – to maximise the value of their solar PV system investments." (p.129)

This sequence of assumptions about the merits of price signals and consumer responsiveness to those signals is not unusual in the regulation of the NEM which, since the conception of full retail competition, has reckoned on **the boundless rationality of *homo electronicus***.

Experience suggests that consumers' interest, willingness and capacity to respond to price signals (and their support for price rationing) may fall well-short of the regulator community's expectations. For example:

- Over the past year or two, retail energy prices have flattened and even started falling – reflecting the changed dynamics in the wholesale market and lower regulated network costs. The changes in the wholesale market have also seen feed-in tariffs decline in value. The rational consumer response to these declining prices would be an expected reduction in the uptake of DER. No such decline has been observed to date.

- For the past couple of decades, electricity (and gas) consumers in most jurisdiction have faced contestable retail markets. There is ample evidence that only a minority of consumers actively engage with the market – and the evidence indicates very few of these active customers navigate the retail electricity market effectively. That is, even active consumers typically pay far more than they otherwise could pay for their electricity.
- Experience suggests consumers (in fact: citizens) mistrust and/or dislike price rationing mechanisms being applied to services they see as communal or essential in nature. Most notably, this was highlighted during the millennial drought when restrictions were viewed very favourably by the community and polity. Any suggestions of price rationing mechanisms were dismissed outright.

Interestingly, the draft decision also indicates the AEMC's expectation that DER uptake will inevitably continue to grow in the future *despite* quantitative export limits or its proposed network export tariffs. For example:

> "DNSPs may need to invest to support increasing reverse power flows as customers continue connecting DER, especially to manage periods of minimum demand." (p.135)

Even if export tariffs can be set on a perfectly rational basis, experience suggests an economically **rational consumer response is not assured**. It is well within the realms of possibility that many DER owners will withdraw their exports entirely. Some may even consider defecting from the network. The former action will put upward pressure on wholesale prices. Defection will put upward pressure on network prices. Both actions erode the net economic benefits that might be expected from network export tariffs.

Beyond the questions prompted by the above observations about the uncertain impact of network export prices on consumer behaviour, lies an even more profound question about the role of electricity retailers. Retailers stand between networks and their customers. The consequences of this industry arrangement were explored at some length by farrierswier and acknowledged in the draft decision.[23]

> "Farrierswier considered whether retailers pass on network tariff signals or engage with these price signals on their customers' behalf will likely be a key determinant of the outcomes of export pricing reforms. Retailers are not passing on network tariff signals to small customers at any scale yet." (p.229)

Farrierswier found a tiny proportion of retail offers included tariffs that reflected network costs.

> "Retailers offering cost reflective network tariff signals to <4% of small customers (based on AER SA and QLD analysis in 2020)." (Farrierswier, p.viii)

The draft decision acknowledges that such circumstances limit the "potential benefits" to be gained from network export tariffs; and benefits would be further limited by the extent to which consumers were responsive to, or interested in, price signals.

[23] Farrierswier (2021) *Insights Report. Effectiveness of the TSS process and options for implementing export charges* (March)

> "As noted by farrierswier, realising these potential benefits is dependent to an extent on whether retailers actually pass through the network pricing structures in some manner and how responsive customers are to price signals. However, the Commission acknowledges that retailers operate in a competitive environment (albeit highly regulated), and their products will reflect customers preferences." (p126-127)

Having reached something of a **conceptual dead-end**, the draft decision summons the *deus ex machina* of future technology to inject meaning back into its proposed support for network export tariffs.

> "In the future, affordable automated home energy management systems with 'set and forget' technologies are expected to be able to respond to more complex price signals with minimal customer impact … Enabling export pricing and increasing the flexibility of the network pricing principles is a step forward towards this vision." (p.128)

Of course, this is not a testable statement. It may prove to be true. It may not. And even if these technologies emerge, caution should be exercised about their utility and uptake. Experience demonstrates that when consumers lack interest, willingness or capacity to respond to price signals, commercial firms will treat that consumer inertia as a source of rents.[24,25]

Community confidence in network export tariffs will be aided by a clear exposition of their benefits. The final decision should avoid the equivocation of the draft decision. It should provide a clear account of how these benefits will be realised, taking into account the structural separation of networks and retailers (and other third-party service providers such as aggregators). The final decision should outline (or at least foreshadow) the additional regulatory measures required to achieve the expected benefits in a structurally separated industry.

Recommendation 4

Before proceeding to a final decision, the AEMC should examine:

- **how the claimed benefits of network export tariffs will be realised in a vertically separated market**
- **the potential consequences if consumers and market participants do not respond to network export price signals as anticipated in the draft decision, and**
- **the types of protections that would be required under these circumstances.**

[24] The so-called 'loyalty tax' is a well-documented phenomenon. So too is the 'confusopoly' of market offers which lead customers to make poor decisions.

[25] The ability of consumers to make beneficial choices in the two-sided market envisaged by the AEMC (see p.17) cannot be assumed from first principles. A more detailed exploration of two-sided markets lies beyond the scope of this submission.
See Ben-David, R (2020) *Response to consultation on Post-2025 Market Design* (October).
https://energyministers.gov.au/sites/prod.energycouncil/files/publications/documents/Monash%20Business%20School%20response%20to%20P2025%20mark%20design%20consultation%20paper.pdf

5. Dealing with the potential indeterminacy of negative export prices

The draft decision provides little clarity about its proposal to allow negative export tariffs ("export rebates"[26]) – that is, a payment *from* a network provider to an owner of DER. The draft decision envisages such payments may be made to DER owners as an incentive to export their electricity when the network is not congested. This will be achieved by amending clause 6.18.5(a) of the NER:

> "to allow charges in respect of the provision of direct control services to reflect efficient negative costs." (p.126)

The intention behind the decision to allow negative tariffs is:

> "to reward customers for actions that better utilise the network or improve network operations" (p.13)

Going further, the draft decision observes:

> "Adoption of cost reflective tariff designs, including negative prices, may be an alternative or complementary to non-network options to manage network constraints." (p.138)

It is not at all clear from either an equity or an efficiency perspective why a network – and ultimately the AER as the approving authority – would even consider a negative export tariff.

Indeed, negative export tariffs may have a perverse effect on equity and fairness.

While offering a negative export tariff may avoid expenditure on network augmentation, presumably the cost of the export rebate would be recovered from *all* customers (therefore increasing general prices). In contrast, and according to the logic behind introducing export tariffs, the cost of augmentation to support DER exports would be recovered from DER exporters only. In other words, all customers (including non-exporters) will face higher prices to avoid the augmentation costs that exporters would otherwise be paying. All things being equal, **negative export tariffs would appear to result in a peculiar wealth transfer**.

It is also not clear why a network would not prefer to offer some form of negative consumption charge as an incentive to reduce consumption when the network is congested. But most curiously, it is not clear why the AEMC would not simply prefer the network to charge exporters a higher export tariff that reflects the additional costs they are imposing on the network – after all, cost reflectivity is enshrined in the network pricing principles.[27,28]

Unfortunately, the draft decision provides no insight into what future network pricing will look like, and how proposed prices should be assessed by the regulator. It contains broad suggestive statements only. These statements risks creating misplaced expectations among consumers, DER owners, and their respective advocates.

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[26] This term is used on page vi

[27] NER 6.18.5(g)

[28] Presumably a network's simplest and operationally safest option would be to curtail exports through static or dynamic export limits. (Of course, such curtailments may create political risk for networks if they become overly prohibitive.) In which case, it is not clear why the AEMC hasn't considered alternative mechanisms, such as Guaranteed Service Level (GSL) payments to promote efficient investment in export hosting capacity.

It may even be the case that negative network export tariffs are indeterminate when viewed through the NEO's sole lens of efficiency. If so, the AER is ill-equipped to make decisions about how such tariffs will be determined – and therefore, any bundle of tariffs proposed in a TSS.

Perhaps the AEMC has intuited the problem of indeterminacy when it states:

> "The Commission has decided that the Export Tariff Guidelines will not be 'binding' on the AER or DNSPs. It should not be seen by DNSPs as a compliance exercise. This could undermine the potential for engagement to be innovative and responsive to consumer views and preferences." (p.142)

This proposal is possibly the most surprising and alarming element in the draft decision.

The AEMC's dual objectives of promoting innovative pricing options and avoiding a compliance-based approach are admirable. However, the proposed approach will leave regulatory price setting as little more than an exercise in relativism based on whether a network's proposed export tariffs *feel* right to the regulator? Such judgements are hardly in keeping with the statement, "The market objective is an economic concept and should be interpreted as such."[29]

Moreover, where prices *feel* wrong, it would appear the AER will have very limited grounds on which to reject a proposal.[30] Presumably, dissatisfied consumers will have even narrower grounds on which to appeal an AER decision to approve network export tariffs.

To avoid creating unrealistic expectations among DER owners and imposing unreasonable regulatory responsibilities on the AER, the AEMC should fully explore the realistic prospect of negative export prices. It should also develop principles to guide the use of negative export prices as well the recovery such costs would represent for network operators. These principles should account for matters of equity as well as efficiency. Given their potential distributional consequences, these principles should be established in the NEL.

Recommendation 5

Before proceeding to a final decision on (negative) network export tariffs, the AEMC should:

- **undertake detailed examination into their economic and regulatory plausibility, and**
- **develop principles for inclusion into the National Electricity Law to guide their use and the recovery of these expenditures from consumers.**

[29] From the second reading speech for the Bill introducing the national electricity objective (NEO), cited on p.16 of the draft decision.

[30] While the AER may have a limited basis for rejecting a proposal, in the absence of merits review, networks are unlikely to contest a regulatory decision even if the AER stretches the boundaries of its jurisdiction. Moreover, electricity distribution networks have no financial incentive to challenge the AER's decision on tariffs because they are regulated under a revenue cap.

CONCLUSION: *Is it time for a neo-NEO?*

This submission does not advocate for or against network export tariffs, instead, it highlights the further work that needs to be done to assure the community that the implementation of these tariffs is robust and aligned with the interests of consumers. The matters raised in this submission are not trivial. They also draw attention to a much larger concern.

The draft decision observes that "most distribution networks were built when energy only flowed one way" and that those networks are now approaching the limit of their "intrinsic hosting capacity".[31] The matters raised in this submission highlight that perhaps the regulatory framework governing network service providers (and indeed, the NEM) has also reached the outer limits of its 'intrinsic capacity'.[32]

The entire regulatory framework centres on the notion of efficiency. The NEL contains the NEO which seeks to promote efficiency for the long-term interests of consumers. It also contains the Revenue Pricing Principles (RPP) which pursue efficient prices based on the long-run marginal cost of delivering services. The Network Pricing Principles (NPP) in the NER are expressed in similar terms, and the AER's regulatory investment tests (RIT) applies a market-wide *net economic benefit* test that "encourages efficient outcomes in the longer term by supporting efficient market development and performance."[33]

The NEO, RPP, NPP and RIT were all designed and adopted at a time when the electricity system was largely in steady-state. In this environment, inputs and outputs were known with reasonable certainty. All that remained, therefore, was the challenge of managing the conversion of those inputs to outputs at the lowest sustainable cost to society – namely, the promotion of efficiency as an 'end' in itself.

Today, there is no reasonable certainty about the inputs (technologies) and outputs (consumer preferences) in the electricity system of the future. The circumstances that led to the three rule change requests and the draft decision – as well as the matters raised by this submission – are sufficient testament to the pervasiveness of that uncertainty.

There is something incongruous about a regulatory system designed to manage marginal improvements in a highly certain environment, now being used to manage fundamental reconfiguration in a highly uncertain environment. The NEO, RPP, NPP and RIT are all predicated on an identifiable long-term outcome. If that outcome is now shrouded in ambiguity, then it is not clear how these regulatory devices can be used to guide regulatory decision-making.

Path dependency and stranded assets are the great risks for regulators, consumers and networks in this environment. Applying an out-of-date regulatory framework to guide regulatory decisions risks seeing networks and consumers (and third parties) making investments that could potentially foreclose on future equilibria that may have been more

[31] For example, see p.iii

[32] The draft decision provides no detailed analysis of this question, although it reaches the somewhat qualified and unconvincing conclusion, "The Commission considers the pricing framework is generally fit-for-purpose to support the introduction of export pricing." (p.126)

[33] AER, *Fact Sheet. Improving guidance to support cost benefit analysis in network investment* (December 2018) https://www.aer.gov.au/system/files/AER%20-%20Fact%20Sheet%20-%20Final%20RIT%20application%20guidelines%20-%2014%20December%202018.pdf

beneficial and efficient with the benefit of hindsight. Unfortunately, it may take years or decades for the electricity market to return to a steady state.

It may be within the AEMC's legal remit to make its proposed decision in response to the three rule change requests. That remit, however, does not address the normative question about whether the AEMC *should* proceed to a final decision given the ill-fitting framework within which it is seeking to make that decision.

The three rule change requests have highlighted the inadequacy of the regulatory framework (beginning the NEO) and its predication on steady state. It would seem these rule change requests have precipitated the need for a fundamental rethink and response to the disequilibrium bedevilling the economic regulation of network service in the National Electricity Market.

About the author

Dr Ron Ben-David joined the Monash Business School (Faculty of Business and Economics) in partnership with the Monash Sustainable Development Institute, as a Professorial Fellow in March 2020. This followed ten years as the full-time chair of Victoria's economic regulator, the Essential Services Commission. His earlier career involved senior positions in the Department of Premier and Cabinet (Vic) and Treasury and Finance (Vic). In 2007-08, he led the secretariat for the national Garnuat Climate Change Review. Ron is known for his deep commitment to reforms that deliver fairer outcomes for consumers. He has written and presented on a wide range of topics. He holds a B.Sc (Optometry), B.Comm (Hons), PhD (economics) and is a graduate of the Australian Institute of Company Directors.