ENERGY CONSUMERS AUSTRALIA

The pricing review: Electricity pricing for a consumer-driven future

ECA Submission to the AEMC on the Pricing Review Draft Report

Energy Consumers Australia is the national voice for household and small business energy consumers. We advocate for a fair, affordable, and reliable energy system—one that meets everyone's needs and leaves no one behind on the journey to net zero.

1 Feedback on the Pricing Review draft report

Energy Consumers Australia (ECA) welcomes the opportunity to make a submission to the consultation on the AEMC's Pricing Review draft report. We continue to support the AEMC's ambition to ensure electricity pricing frameworks are effective, fair, and fit for purpose as the energy system becomes more dynamic and decentralised.

As highlighted in our earlier submission, the review should provide solutions to ensure that:

- electricity is affordable for all Australians;
- system costs are recovered fairly, noting that cross-subsidies already exist and could grow; and
- retail services are simple and comparable, in the context of an increasingly complex retail electricity market.

The AEMC's draft report is ambitious in its scope, and we are broadly supportive of and encouraged by the general direction of the reforms. However, we think there is still considerable work to be done in developing, testing and refining the proposals the AEMC has put forward to ensure they will deliver good outcomes for consumers. We have sought to approach the review in a constructive way by providing suggestions on what is needed to make these reforms work and where further evidence and analysis is needed.

On retail pricing, we particularly commend the AEMC on recognising that the 'loyalty tax' is leading to poor outcomes for consumers and considering reforms to directly address this. We think further development of reforms to ensure fairer retail pricing outcomes is worthwhile but highlight that this must be done in a way that does not increase market complexity.

On network tariffs, we recognise that recovering most network costs via consumption tariffs is increasingly not fit for purpose. We support the AEMC's reforms to ensure network tariffs are cost-reflective, efficient and lead to equitable outcomes.

Network tariffs with a meaningfully higher proportion of costs recovered from households via fixed charges would be appropriate and more fit-for-purpose than the status quo. We also agree there are ways to effectively leverage CER flexibility in ways that don't burden others. However, there are important implementation challenges to work through.

We recommend the AEMC undertake further consultation on how networks should set fixed network tariffs and ensures any transition is done in a gradual, measured way. We are certain that the AEMC (and the sector more broadly) can fairly and efficiently allocate fixed network costs while maintaining a strong safety net for vulnerable households.

Further information is provided in our responses to the questions posed by the consultation paper. If you have any questions, please contact Ashley Bradshaw at ashley.b@energyconsumersaustralia.com.au and Adam Collins at adam.collins@energyconsumersaustralia.com.au.

Your sincerely

Dr Brendan French
Chief Executive Officer

2 Responses to Consultation Questions

General comments on retail pricing reforms

ECA welcomes the AEMC's acknowledgement of the need for retail market reforms. It is significant that the AEMC has recognised that the predominant form of competition in this market, in which low-cost acquisition offers are subsidised by longer-term customers paying a 'loyalty tax', is leading to poor outcomes for consumers.

We support further development of potential retail pricing reforms, particularly Recommendation 1 ('same plan, same price') which would directly target loyalty pricing. We think this reform could meaningfully address this issue and contribute to broader qualitative benefits like improved consumer trust and confidence in the energy market. However, the proposal would need to be carefully designed and implemented so that it does not inadvertently add to existing market complexity and consumer confusion.

As well as addressing the loyalty tax, this reform should be explicitly designed with a second objective in mind: to ensure offers are simple and comparable in the context of an increasingly complex retail electricity market. Recent ACCC analysis on the complexity and number of retail offers – more than 145,000 across the NEM – further highlights this need.[1]

We recognise there is a potential for Recommendation 2 (competitive franchise auction) to deliver better price outcomes for standing offer customers and welcome the AEMC's attention on outcomes for these consumers. However, we have highlighted significant practical and implementation issues that would need to be overcome for this reform to succeed and not lead to negative experiences for these customers.

We also note recent reforms to the Default Market Offer (DMO) framework (which ECA has supported) are yet to take effect, so it may be premature to consider reforms that would ultimately displace the default offer framework. Still, it is useful to consider the framework that would provide the best outcomes for standing offer customers in the longer-term. We are open to this being something other than a default offer framework if this would lead to better consumer outcomes but are not yet persuaded the proposal as presented would achieve this. Any move away from this framework would need to consider not just price impacts but the consumer experience and any subjective value consumers might place on having an independently determined and regulated price.

To support this submission – and the further analysis we think is required – ECA asked Finncorn Consulting to develop a short report on assessing the impacts of these proposals (**Attachment 1**). The report provides a robust framework for considering the trade-offs and possible outcomes that might arise from these reforms, and how this should influence the design and implementation of any reforms should they be adopted. We recommend the AEMC consider Finncorn's report and the matters raised in our submission in preparing its final report.

While we welcome that the AEMC has initiated the Pricing Review, the number of concurrent reviews affecting retail pricing highlights the need for better coordination of energy pricing reforms. As well as the Pricing Review, major reforms that would impact energy pricing are being considered as part of:

[1] ACCC, Inquiry into the National Electricity Market - December 2025 Report.

- DCCEEW's review of the Prohibiting Energy Market Misconduct provisions, which includes a range of retail pricing reform proposals
- reforms to the DMO and introduction of the SSO on 1 July 2026
- DCCEEW's Better Energy Customer Experiences reforms, which include consideration of a consumer duty for energy. Research commissioned by ECA highlights the potential for a consumer duty to deliver better consumer outcomes including to ensure fair price and value for energy.[2]

We acknowledge the AEMC has identified some of these interactions but remain concerned that these reforms are being considered in a disjointed way, which may lead to reforms being determined more by process and timing rather than a holistic consideration of all relevant options. We recommend the AEMC engage closely with DCCEEW to ensure appropriate coordination of these reviews.

While we support further development of retail pricing reforms as part of the Pricing Review, we continue to advocate for broader structural reform through the introduction of a consumer duty obliging energy providers to act to deliver good outcomes for consumers. Research commissioned by ECA has highlighted the potential for a consumer duty to address loyalty pricing by requiring retailers to ensure energy plans are suitable for their customers and offer fair price and value, regardless of the age of the contract.[3] We encourage the AEMC to ensure the compatibility of any proposed reforms with a potential consumer duty.

Question 1: Remove retail loyalty tax

AEMC Recommendation 1 - Require energy service providers to charge all customers on the same plan the same price, to address the 'loyalty tax' on customers who don't switch and ensure every customer is always on the best price

> Do you consider recommendation 1 would provide a better outcome for market offer customers? If so, why? If not, why not and are there other approaches that would work better? What further implementation and market impacts would need to be considered?

The 'loyalty tax' needs to be addressed and retail markets made simpler and fairer

ECA strongly agrees that the 'loyalty tax' needs to be addressed. We have raised through several recent AEMC reviews that the current retail market structure – that requires consumers to constantly 'engage' with the market and switch regularly to avoid paying more – is not delivering good consumer outcomes. We do not think this is appropriate in a market for an essential service and welcome that the AEMC seeks to address this.

Since the release of the draft report, the ACCC has published further analysis that confirms that loyalty penalties persist in the retail electricity market and encourages policymakers to continue to protect customers who do not or cannot regularly switch plans.[4]

[2] ECA, Exploring a consumer duty for Australia's energy market | Energy Consumers Australia.

[3] Paterson, Willis and Bourova, Suitability Analysis for a Consumer Duty in Retail Energy Markets: Report #3.2, available at Exploring a consumer duty for Australia's energy market | Energy Consumers Australia.

[4] ACCC, Inquiry into the National Electricity Market - December 2025 Report, 2.

While the analysis indicates loyalty penalties have reduced, it concludes this is driven by rising acquisition prices (rather than falling prices for loyal customers).[5] Customers on older (3+ years) plans still pay on average $221 more than customers on new plans; residential customers could have saved on average $291 by switching to the retailer's best offer, and small business customers could have saved $490.[6]

The ACCC's analysis reveals the extraordinary number of retail plans, particularly legacy plans that support segmentation of customer bases and enable price discrimination, highlighting how market complexity contributes directly to poor pricing outcomes for consumers. The ACCC finds there are 145,500 plans across the NEM, with as many as 26,700 in a single distribution zone. Further, the ACCC found customers would be offered up to 233 plans on Energy Made Easy (EME) when switching.[7] ECA found customers may be presented with more than 300 plans:[8]

Postcode	Number of plans listed on EME (February 2026)
2000	336
4000	312
5000	291

20% of consumers review their energy plan only 'once every few years' and 16% 'less frequently than every 5 years' or never.[9] Many consumers who do not review their energy plan regularly say they 'wouldn't know where to start'. Of consumers who reported not reviewing their energy plan regularly, 51% of consumers reporting two or more vulnerability indicators stated that a main reason was that they 'wouldn't know where to start' – compared to only 22% of consumers not reporting hardship indicators This is despite only 18% for consumers with two or more hardship indicators saying they are satisfied with their current plan.[10]

As we have noted in our earlier submission to the Pricing Review, requiring consumers to switch to get a fair deal imposes time and grudge costs onto consumers, leading to a poor experience of the energy market. Indeed, because the market is so complex, engaging with the market once (for example, when moving into a new property) may make consumers less likely to want to engage with it in future. While we welcome the AEMC's acknowledgement of the need to address the loyalty tax it is important that this is done in a way that reduces, rather than increases, the complexity of the energy retail market.

We support Recommendation 1 being further developed but recommend the AEMC undertake further analysis of the likely impacts of the reform proposal

We support the principle that customers on the same plan should pay the same price. We do not consider there is benefit in consumers paying different prices for an identical service. While we recognise that low-priced acquisition offers depend on this form of price discrimination, this leads to a market

[5] Ibid, 20.
[6] Ibid, 5, 36.
[7] Ibid, 34-35.
[8] Energy Made Easy, accessed 10 February 2026. The following options were selected: 'Electricity', 'Plans for my home', 'I'm moving to a new home', 'None/Not sure/Not in this list', 'Medium', 'All plans'.
[9] ECA, Consumer Energy Report Card data | Energy Consumers Australia.
[10] ECA, Understanding and measuring energy hardship in Australia (July 2025).

where churn dominates retailers' thinking, expenses and focus, to the detriment of service and sustainable pricing.

We generally agree with the AEMC's view that the proposed reform could lead to better outcomes for consumers, but further analysis is needed to clearly assess and understand the consumer impacts of the reform. This has been highlighted by other commentators.[11] A clear understanding of these outcomes, and the trade-offs inherent in the proposed reform, is needed to ensure the proposal is the best option to achieve its intended purpose.

While we recognise the AEMC seeks to use this consultation to elicit information from stakeholders to understand the impacts of the reform, in further developing the proposal the AEMC must itself clearly articulate its hypothesis for how it expects the retail market will work if the proposal is implemented, what the consumer impacts will be, and the evidence supporting this view.

Finncorn's analysis presents a framework for assessing the impacts of the proposal:

- **First order impacts:** what are the impacts on the dispersion of retail prices faced by consumers based on their engagement (and how does this align with a definition of 'equity')?
- **Second order:** what are the impacts on structural costs in retailers?
- **Third order:** what are the impacts on competition and thus retailer profitability / consumer costs?
- **Fourth order:** on what alternate basis would retailers compete under the new framework?

We think this is a useful starting point for considering how the proposal might impact retail pricing, offers and competition – and ultimately the outcomes for consumers. We recommend the AEMC undertake further analysis for the Final Report considering these matters. This would make clearer the extent the proposal might address the 'loyalty tax', and the assumptions trade-offs in doing so.

For example, retailers have raised concerns that the benefits for customers who do engage in the market will be removed.[12] We agree that it is likely that low-priced acquisition offers would be removed from the market or would become less prevalent. What is important though is the trade-offs involved and whether the reform would achieve its objectives and lead to a better and fairer market for consumers overall.

This would require understanding (or at least speculating, with evidence): What would the reform mean for prices for loyal customers paying the highest prices now? What would it mean for average prices? How would it impact consumers experiencing hardship or vulnerability? Would it improve customer perceptions of fairness and trust in the market? How would the range and types of offers in the market be affected?

This should include consideration of actual prices paid by customers, not just offered prices, as 'loyalty' prices for older contracts tend to be 'hidden' and are not reported on Energy Made Easy like generally available offers (this in itself contributes to the prevalence of loyalty pricing strategies).

We would also expect the AEMC to examine how retail costs might be impacted under this proposal and how this would affect retail prices faced by consumers. For example, the Finncorn analysis notes that a second order impact of the reform could be to materially reduce industry-wide retailer costs via lower

[11] See e.g. Dr Ron Ben-David, Pricing reform needs stronger foundations | The Energy.
[12] Australian Energy Council, Implications for Competitive Market in Pricing Review.

customer acquisition and retention costs. This would be a material benefit that would lead to lower average costs for consumers.

Fairness and trust in the market need to be considered; consumers see loyalty pricing as unfair

Beyond quantitative analysis of price impacts, the AEMC should also consider the qualitative benefits that may arise from the proposal, such as improving consumer confidence and perceptions of fairness and trust in the market. We would expect the proposal will positively impact both – though only if it also reduces market complexity and confusion for consumers.

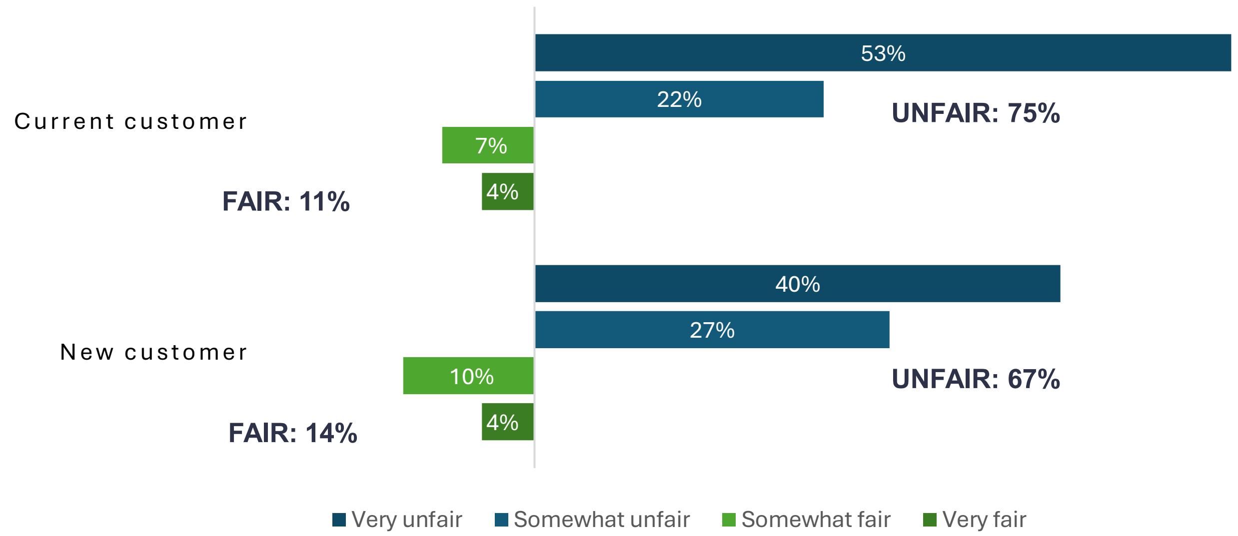
As Finncorn's analysis notes, improved trust could be a meaningful benefit of the reform, even if there are no changes to retail costs and margins and the average prices faced by consumers.

To understand consumers perceptions of the fairness of 'loyalty tax' pricing ECA commissioned a survey of more than 2,000 households. The survey aimed to test whether consumers consider it fair that newer customers are offered cheaper plans for the same service than existing customers on older plans are paying. The survey questions asked this from the perspective of both a 'loyal' customer (i.e. a customer on an older plan) and a switching customer seeking a new energy plan.

Consumers overwhelmingly perceive this as unfair regardless of whether they are an existing customer or a switching customer:

- among current ('loyal') customers, 75% said this was unfair and 11% said this was fair (remaining respondents answered 'neither fair nor unfair')
- among 'new' customers, 67% said this was unfair and 14% said this was fair.

Figure 1 - Fairness of new customers being offered cheaper plan



Source: SEC Newgate on behalf of Energy Consumers Australia, February 2026.

Hypothetical 'current' customers were asked: Imagine you had been with a particular household energy provider (e.g. gas or electricity) for about two years. You discover that a new customer signing up today is offered a cheaper price for the exact same energy plan that you are on. How fair or unfair do you think this is?

Hypothetical 'new' customers were asked: Imagine you are looking for a new household energy provider (e.g. gas or electricity). You find an energy plan with a cheaper price than what the provider charges its long-term customers for the exact same plan. How fair or unfair do you think this is?

The need to consider both quantitative and qualitative costs and benefits has also been a significant feature of Ofgem's considerations in extending the UK's Ban on Acquisition Tariffs (BAT), which the AEMC has commented on in its draft report.[13]

In its 2024 Decision, Ofgem noted that its analysis of BAT had been 'predominantly focused on quantitative, economic impacts' but that it was 'persuaded by arguments that the qualitative benefits of retaining the BAT, including in terms of consumer trust, should be given more weight'.[14] Ofgem noted that:

> 'There is a reasonable concern that perceptions of a market with short-lived acquisition tariffs and end-of-contract price rises could reduce trust, which in turn could have adverse effects on effective competition in the medium term.'

Similar observations could be made of Australia's energy retail market.

Surveys in the UK also show that customers overwhelmingly find acquisition-only pricing unfair, even when they are the beneficiary of these prices (as a switching customer).[15] The BAT has been overwhelmingly supported by consumer groups and retailers in the UK.[16] Ofgem data suggests that since the introduction of the BAT there has been an increase in market innovation, consumer trust, switching rates and intention to switch.[17]

While the AEMC's proposed reform is not identical to the BAT (AEMC suggests its proposal, 'encompasses the benefits of Ofgem's, but differs from this as customers would not need to switch to maintain a competitive price')[18] we consider it could have similar benefits if designed and implemented well.

The reforms should aim to reduce the complexity of the market

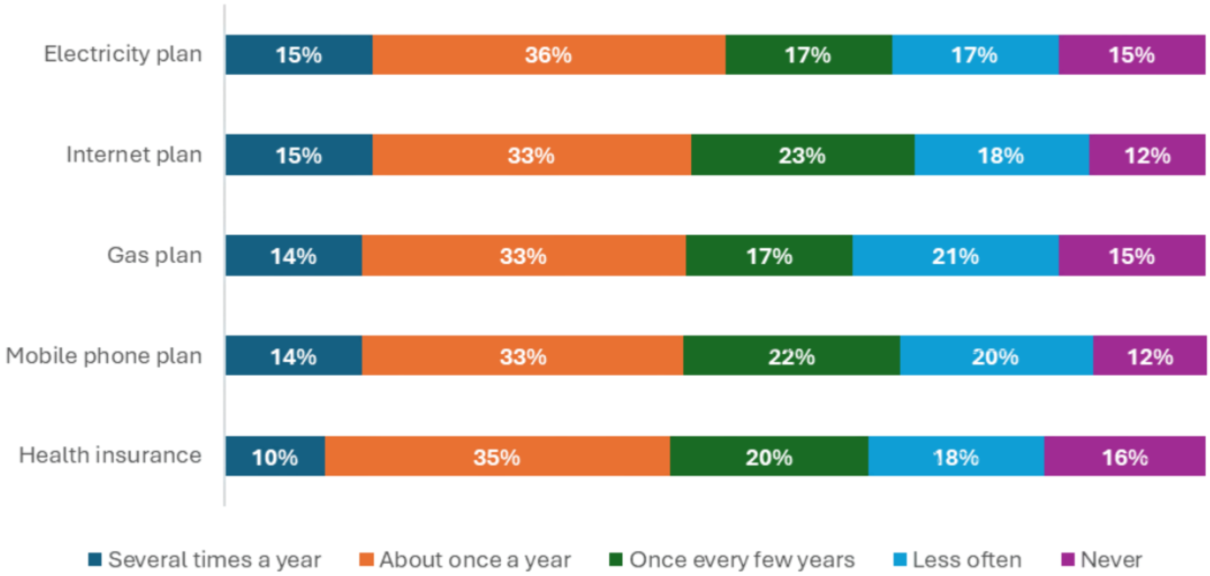
Many consumers find energy offers and contracts complex and confusing. Our Consumer Energy Report Card surveys show that 30% of consumers don't know what type of electricity tariff or plan they have, and 31% of consumers don't know what a tariff is (only 23% 'definitely know' what a tariff is).[19] ACCC data highlights the sheer volume of plans, as well as a 37.7% increase in the number of consumers on complex plans in 2025 alone.[20]

Confusion about energy plans contributes to apprehension about engaging in the energy market. While we expect fairer and more transparent pricing may improve consumer trust and engagement in the market, it is important this is not offset by increased complexity across other non-price dimensions.

As indicated below consumers report significant difficulty understanding energy plans or contracts, and at higher rates than for mobile phone or internet plans.

[13] AEMC, Draft report, 64 (Box 6).
[14] Ofgem, Decision on the Future of the Ban on Acquisition-only Tariffs (BAT), 1.8, 3.2.
[15] Which, How do consumers feel about acquisition-only tariffs? - Which?.
[16] Ofgem research, cited in: Imagine an energy market where loyalty is rewarded | Octopus Energy, 11.
[17] Octopus Energy, Imagine an energy market where loyalty is rewarded | Octopus Energy.
[18] AEMC, Draft report, 64 (Box 6).
[19] ECA, Consumer Energy Report Card data | Energy Consumers Australia
[20] ACCC, ACCC, Inquiry into the National Electricity Market - December 2025 Report, 30.

Figure 2 – How often people say they search for better offers or plans



Source: SEC Newgate on behalf of Energy Consumers Australia, September 2025.

As we noted in our earlier submission, a proliferation of complex products and pricing structures is not indicative of market innovation. Even where products are designed to increase choice for more engaged customers, they should be easy to understand and compare.

We expect the proposal would, at least, reduce the large number of legacy plans that differ from new plans only by being at a different (usually higher) price. However, one concern we have with the AEMC's proposal is that it may incentivise a proliferation of offers with superficial differences or meaningless and potentially costly add-ons or 'perks' that obfuscate prices. While we recognise the AEMC aims for plans to be 'meaningfully different', we have concerns about how this standard would be understood and applied, and some of the examples provided do not appear to meet this standard.

For example, the AEMC suggest plans with insignificant differences in time of use periods would not be meaningfully different. However, the AEMC also states, 'an energy service provider could have multiple plans with different prices at different times, such as a family plan with cheap hours after school, a plan aimed at retirees with cheap daytime hours'.[21]

This suggests that a different time of use window of a few hours might be 'meaningfully different', but a shorter period might not. Where would the line be drawn – would a one-hour difference be 'meaningful'? Two? We appreciate that the point of a principles-based obligation is to not require prescriptive rules, but more clarity is needed to understand how the AEMC expects this will operate.

We are also unsure as to why the draft report indicates that 'minor differences in prices' would not be meaningfully different – we agree with this, but this implies that the AEMC considers that a 'major'

[21] AEMC, Draft report, 66.

difference in prices might be meaningfully different. This is precisely the issue that the proposal is seeking to address, i.e. differently priced energy plans for the exact same service.

A related practical matter the AEMC should consider, and address in its final report, is how sign-up bonuses or similar financial incentives would be treated under the reform. We do not think it would be an effective outcome if acquisition tariff pricing is simply diverted to greater or more common sign-up bonuses.

These issues require further consideration.

Energy plans with bundled non-energy products are not ‘meaningfully different’ and introduce risks to consumers

The draft report also states the proposal would allow plans with ‘added perks, such as Netflix subscriptions, Qantas’.[22] If these are considered ‘meaningfully different’ plans we have concerns that the proposal may lead to a proliferation of offers with arbitrary 'perks’ that do not have any relation to a consumer’s energy needs. These offers might instead obfuscate prices and comparability, contributing to complexity and consumer confusion – a concern that has been previously raised by consumer advocates.[23]

The AEMC should consider whether energy plans bundled with other service are worth the hassle. While they may appear to create valuable offers for consumers, they also include a lot of risk. Bundled contracts can limit consumers’ ability to assess value, compare offers or determine whether a product is fit for purpose, and we consider this has the potential to contribute to consumer harm. Product bundling has attracted significant regulatory scrutiny in other sectors (such as financial services) and its increasing prevalence in the energy sector should be treated with caution. There may also be unique risks arising from the bundling of an essential service with non-essential products or services.

We do not think that simply adding non-energy products and services onto an energy plan should be considered a ‘meaningful difference’ that justifies differential pricing. We do not object in principle with energy plans being offered along with other services (e.g. internet plans) but the costs for the non-energy service or product should not be paid through a customer’s energy bill. What is relevant for consumers to transparently compare plans and prices is the cost of the underlying energy service.

For example, we are aware that some retailers offer Netflix plans where the Netflix service is paid through a higher daily supply charge compared to the equivalent non-Netflix plan. We do not think this should be encouraged (or perhaps even allowed) as the Netflix plan is unrelated to the costs of supplying electricity and should be billed separately.

An outcomes-based obligation – like a consumer duty – could address these risks

While we support the proposal in principle, we recommend that it also explicitly aims to address market complexity and is designed and implemented accordingly. Equally, we recognise that overly prescriptive requirements may have negative impacts. For example, previous retail market reforms in the UK that limited retailers to offering only four tariffs were subsequently removed due to their impacts on competition and innovation and were replaced by enforceable principles rather than detailed rules.[24]

[22] Ibid.
[23] E.g. CHOICE, Energy plans bundled with extras might not add up to a good deal.
[24] Ofgem, Modification of electricity and gas supply licences to remove certain RMR Simpler Tariff Choices rules | Ofgem; Final Decision: Enabling consumers to make informed choices | Ofgem.

As the AEMC is aware, DCCEEW is separately considering introduction of an energy consumer duty. We have commissioned research highlighting the potential of a duty to address loyalty pricing and billing confusion in the retail energy market.[25] This could be achieved in part by specifying consumer outcomes that oblige retailers to ensure energy services are suitable for consumers' needs and offer fair value.[26]

The AEMC should consider an outcomes-based approach, similar to a consumer duty obligation like that being considered through the BECE process. An outcomes-based approach to energy plans could require retailers to ensure they are suitable and offer fair value (that would be compatible with a consumer duty if one we to be introduced). We consider this might act as an appropriate restraint on retailers' ability to offer plans that with arbitrary or low-value differences or perks, even without a 'meaningfully different' requirement.

A design and distribution obligation (similar to Part 7.8A of the Corporations Act) could also form part of such a duty. For example, regulatory guidance on the financial services product design and distribution obligations addresses how they apply in respect of bundled products.[27]

Question 2: Introduce a competitive franchise for the cohort of customers who have not chosen a market offer

AEMC Recommendation 2 - Introduce a competitive franchise for the cohort of customers who have not chosen a market offer, so that all customers are on a competitive plan

> Do you consider recommendation 2 would provide a better outcome for standing offer customers? If so, why? If not, why not and are there other approaches that would work better? What further implementation and market impacts would need to be considered?

We welcome that the AEMC is actively considering how to deliver better outcomes for standing offer customers.

ECA has generally been supportive of the role of default offers but we have also previously raised concerns where they have not been working effectively to protect consumers.[28] We were pleased to see many of these concerns recognised as part of the recent review of the DMO and are broadly supportive of the outcomes of that review.[29] However, we do not discount the possibility of there being other, potentially better, ways to meet the needs of standing offer customers in the longer term. Indeed, the Finncorn report suggests that the best way to assess Recommendation 2 may be as a planned replacement of the DMO and VDO. These are broader policy questions that would need detailed consideration by policymakers and Energy Ministers.

We do think it is a plausible scenario that an auction process could result in better pricing outcomes for standing offer consumers. The Finncorn report highlights the proposal could also improve retail competition (which we think is worthwhile if it leads to better outcomes for consumers) by providing an opportunity for smaller retailers to grow at much lower costs than through organic acquisition costs. As

[25] Paterson, Willis and Bourova, Suitability Analysis for a Consumer Duty in Retail Energy Markets: Report #3.2, available at Exploring a consumer duty for Australia's energy market | Energy Consumers Australia.

[26] Paterson, Willis and Bourova, Models for a Consumer Duty in the Retail Energy Market, available at Exploring a consumer duty for Australia's energy market | Energy Consumers Australia, 3.

[27] Australian Securities and Investments Commission, Regulatory Guide RG 274 Product design and distribution obligations, 41-42.

[28] E.g. ECA, Energy Consumers Australia response to DMO 2025-26 Final Decision | Energy Consumers Australia.

[29] DCCEEW, Default Market Offer - DCCEEW.

the Finncorn analysis highlights though, there are risks to a pro-competitive outcome, primarily arising from the cost advantages of larger retailers but also from the limited capacity for smaller retailers to take on new customers at the scale an auction process would require.

However, there are also very significant practical concerns, and risks of poor consumer outcomes arising from mandatory assignment of consumers to new retailers. The draft report does not provide sufficient detail to understand if or how these might be addressed. On balance, we think it is unlikely these issues would be able to be overcome in the short or medium term without exposing consumers unnecessarily to these risks.

That said, we have sought to take a constructive approach to engaging with this recommendation by highlighting how it could be made to work in a way that would, at least in part, address some of these issues. Again, we recommend the AEMC also consider the issues raised in the Finncorn report.

The proposal should be considered in the context of the existing standing offer framework

Following the DMO review the AER is currently in the process of determining the price for the next DMO to take effect from 1 July 2026, in accordance with updated regulations that are yet to be made. Given this it may be premature to consider a reform that would ultimately be a replacement to the DMO, without observing consumer outcomes under the revised DMO framework.

A further and arguably more significant reform also arising from the review of the DMO is the proposed introduction of the Solar Sharer Offer (SSO) from 1 July 2026. While the draft report contemplates that the auction could include a tariff similar to the SSO,[30] again it is difficult in the short term to consider how an auction could interact with or replace the SSO given it has yet to commence.

In the longer term, while default offers continue to have an important consumer protection role it is reasonable to consider what framework will achieve the best outcomes for standing offer customers. If this reform is further considered we think the longer-term is the more appropriate context to consider it in (we note the AEMC suggests a 2030+ implementation timeframe). Recommendation 1 may also help in this regard: if it improves consumer trust and confidence in engaging in the market it may well reduce reliance on default offers over time, making alternatives more plausible.

There are practical barriers to a fully competitive auction process

The AEMC states its view that the reform will deliver better outcomes for consumers by, ‘channel[ling] competition into offering the standing offer customers the lowest sustainable prices set by the market’.[31]

We agree it is plausible, though not certain, that an outcome could deliver better pricing outcomes for standing offer consumers than default offers, though we would welcome the AEMC undertaking its own analysis or modelling to this effect as part of the final report if it proceeds with this proposal. As Finncorn notes there is also potential for the proposal to improve retail competition, enabling smaller retailers to compete for a highly concentrated consumer cohort (around 90% of standing offer customers are with ‘Big 3’ retailers).

However, the Finncorn report notes the risks to a pro-competitive outcome, primarily arising from advantages of larger retailers in their cost to serve. Vertically integrated retailers or gentailers have a natural wholesale cost advantage over other retailers. Larger retailers also have lower operating costs

[30] AEMC, Draft report, 70.
[31] AEMC, Draft report, 70.

due to economies of scale – the ACCC has identified that 'Big 3' retailers costs to serve are 36% lower than other retailers.[32]

Larger retailers may simply be able to outbid smaller retailers, further entrenching market share. Finncorn notes though this would not necessarily mean worse pricing outcomes for consumers provided competition among the Big 3 was adequate to reveal efficient costs. Finncorn suggests this risk could be mitigated by auction design, for example through:

- Exclusion of dominant bidders – perhaps the top [2] retailers by market share, or any retailer with a market share already exceeding [20%] in the relevant region or DNSP area.
- Pre-qualification based on retailer's capacity to integrate and serve a large cohort (to eliminate the least-capable bidders, including very small / inexperienced retailers).
- Pre-arrangement of a hedge position, to be novated across to the winner.
- Splitting the cohorts – with a guarantee of more than one winner per auction.
- No auction without [4] prequalified bidders.

Finncorn notes there would be a need to balance overtly pro-competitive market design (to encourage healthy long-term competition) at the expense of the cheapest possible price on the day for the standing offer customer (the short-term competitive outcome).

Auction design would also need to mitigate risks to consumers. We agree in particular that pre-qualification (with the regulator requiring financial and operational assurances) would be necessary, as there are significant risks to consumers if a retailer either doesn't effectively manage on-boarding and customer experience,[33] or fails altogether triggering retailer of last resort requirements.

There are currently more than half a million customers on the DMO (and a similar amount on the VDO). Depending on the design of the auction, a winning retailer would need to take on tens or hundreds of thousands of standing offer customers.[34] There are few retailers (i.e. larger ones) who are likely to be able to effectively manage this process at the scale an auction would require. Limiting the cohort of qualified bidders would therefore appear necessary, but this would also limit the competitiveness of an auction by reducing the number of potential bidders.

Mandatory assignment to a new retailer may lead to poor consumer experiences

An auction process that involves consumers being mandatorily transferred to the winning retailer may result in a poor experience for consumers.

Many consumers may find being assigned to an entirely different retailer in itself a confusing experience that takes away their agency. Beyond that, it is likely to create a range of other issues. Say a consumer is told they will be transferring from Retailer 1 to Retailer 2 following an auction:

- **billing** – how will billing preferences and arrangements, such as a consumer's direct debit arrangement with Retailer 1 be handled?
- **hardship and payment difficulties** – if a consumer is enrolled in a hardship program with Retailer 1 will they need to transfer to Retailer 2's program? How would any existing debt a retailer has with Retailer 1 be treated?

[32] ACCC, Inquiry into the National Electricity Market report - December 2024, 59.
[33] See e.g. Greater Western Water billing issues | EWOV for an example of the impacts of widespread billing issues in an essential services context.
[34] For example, a separate auction could be held for each DMO region. Further dividing regions into separate auctions would likely increase administration and monitoring costs.

- **life support** – how will life support registration details be transferred between retailers?
- **concessions** – will concessions information transfer between retailers or will consumers be expected to advise their new retailer of their concessions?
- **customer service and support** – consumers will need to familiarise themselves with Retailer 2's processes. The status of any outstanding issues or disputes with Retailer 1 may be unclear
- **gas bills** – if a consumer also has a gas plan with Retailer 1, moving their electricity plan to Retailer 2 will mean they now have two separate energy retailer relationships to manage which may not meet their preferences.

We expect many of these matters would be highly complex to resolve, requiring changes to the National Energy Laws or Rules. We think these should be addressed in the final report, at least in a preliminary way, if the AEMC proceeds with the proposal.

Additionally, the proposal appears to consider retailers are fundamentally the same and standing offer consumers would be indifferent between retailers except as to price. However, retailers can vary in important ways.

For example, the Rank the Energy Retailer 2025 report highlights significant differences in the quality of hardship responses by different retailers. A retailer taking on a large number of new customers without effective hardship supports in place would present a significant risk to those customers as well as the retailer's existing customers (this may also need to be a pre-qualification condition). Retailers may also vary across a range of other dimensions that may be meaningful to customers, such as general customer service and support.

There would be material costs associated with an auction

We agree with the AEMC's observation that the proposal would entail significant transitional and administrative costs.[35] If the proposal is to be further considered these costs should be clearly outlined.

The proposal would require significant investment from government and regulators, for example to:

- design the auction process
- establish the preconditions for participating in the auction (e.g. financial viability)
- assess retailers' eligibility to participate in the auction
- manage the auction
- monitor and ensure compliance with the auction process and competition laws
- manage post-auction processes.

Retailers would incur costs in establishing compliance with the auction process and eligibility requirements, preparing bids, managing compliance and managing transfer of customers post-auction. Incumbent retailers would also incur costs in transferring customers to the winning retailers. We anticipate retailers would ultimately pass any costs they incur onto consumers.

Costs to governments and retailers may also increase depending on how many separate auctions are run (we anticipate several separate auctions would be needed to mitigate the risks associated with auctioning a large number of customers).

[35] AEMC, Draft report, 71.

International examples may be of limited relevance

The report highlights auctions undertaken in Italy and the US. These auctions differ from the AEMC's proposal in notable ways so may be of limited value in assessing the proposal.

For example, in Italy, the auction was a one-off event as part of a transition from regulated pricing to market offers. After the 3-year transition period ends in 2027 the customers will be moved to a market offer with their current retailer.[36] This means that issues associated with transferring retailer each auction period don't arise as the transfer was a once-off event only. Additionally, the ongoing competition impacts of the auction mechanism don't need to be considered.

Question 3: Periodically review whether regulations are supporting good consumer outcomes in an evolving market

AEMC Recommendation 3: Periodically review whether regulations are supporting good consumer outcomes in an evolving market

- Do you support the AEMC periodically assessing the impact of regulations and interventions on competition?

We support the principle of periodic reviews to assess whether regulatory settings are delivering good consumer outcomes for consumers in a changing energy market. We consider it appropriate as standard practice for the AEMC to review whether rules it has made are delivering the expected outcomes for consumers and are not having unintended consequences.

We do not support framing the review (as suggested in the consultation question) primarily around the impact of regulations 'on competition'. Competition is a means to an end, not the end itself. The primary focus of any review should be whether regulatory settings are delivering good consumer outcomes in practice. Responsibility for determining and reviewing 'good consumer outcomes' also needs to be considered in the context of BECE and the potential development of an energy consumer duty.

While the draft report and Appendix B mention consumer outcomes, the proposed assessment framework in Box 11 largely treats competition as the central lens, relying on indicators such as switching rates, market entry and the range of products and services on offer.[37]

While these measures may provide useful market signals, they are not reliable indicators of good consumer outcomes on their own. In an essential service like energy, higher switching rates, greater product proliferation or increased "innovation" do not necessarily translate into better outcomes for consumers, particularly in a market characterised by complexity, disengagement and uneven capacity to participate. For many consumers, a growing range of products increases decision-making burden rather than value.[38]

Beyond the rules for which the AEMC itself is responsible, the energy consumer framework comprises a range of other energy laws and general competition and consumer protection laws. The appropriate review framework needs to be considered in this wider context, noting other bodies like ACCC, AER,

[36] ARERA, Arera: the gradual protection service; Arera: How long will the gradual protection service be provided? (translated).
[37] AEMC, Draft report, pp 78-79.
[38] Multiple sources including ACCC Retail Electricity Pricing Inquiry p. 269, AER State of the energy market 2025 p.233, ECA submission on Retail Guidelines Review 2025 p.5.

ECMC, DCCEEW and state and territory energy departments also have relevant roles, powers and responsibilities. For example:

- the ACCC has current powers to inquire into the prices, profits and margins in the supply of electricity in the national electricity market (NEM Inquiry); the AER will undertake this going forward
- the draft report suggests that the AEMC could assess the implementation and impact of the BECE reforms. These are a potentially broad suite of reforms that sit within a wider framework, so appropriate responsibility for their monitoring and review should be determined by ECMC.

An appropriate immediate step may be for ECMC to task officials with mapping these roles and responsibilities under energy and general consumer protection legislation and considering the appropriate role and scope for the AEMC's review function, and those of other bodies, within that context.

Question 4: Make it easier for consumers to compare offers

AEMC Recommendation 4: Provide the AER with additional funding to upgrade Energy Made Easy so that consumers can easily compare electricity offers, including new and emerging types.

- What information should be gathered from energy service providers, as the AER considers its review of the retail guidelines?
- Do you have any suggestions regarding potential improvements to Energy Made Easy to facilitate consumers' ability to compare offers?
- How else can consumers be supported to compare offers in the market?

We support improvements and additional funding to Energy Made Easy (EME) but recommend this is done with the explicit aim of moving beyond a simple offer comparison site and delivering a true 'one-stop-shop' for energy information and advice consumers can trust. Our surveys show that while nearly all households are interested in learning more about managing their energy use and costs, there is a lack of trusted information and advice to support consumers and provide them with the certainty they need to make the right decisions for their circumstances.[39]

Our Household Energy Consumer Information Research found that 50% of household energy consumers had not begun looking for information on energy, and among those who had searched, 43% did not find it easy to find the right information.[40] Recent research from DCCEEW also found that consumers are most receptive to energy information when it is provided at key decision points, such as moving house, replacing appliances, or responding to bill increases, rather than through ongoing or proactive engagement.[41]

This evidence underpins our two core points. First, while we support efforts to make it easier for consumers to compare energy retail offers and continued investment in EME, comparison tools alone have inherent limits. Therefore, we encourage the AEMC, along with the AER, to consider how an EME

[39] See e.g. ECA, Australians need a one-stop-shop for trusted energy information | Energy Consumers Australia.

[40] ECA, 2023, Household Energy Consumer Information Research | Energy Consumers Australia,

[41] DCCEEW, 2025, Reimagining how we engage Australians with Consumer Energy Resources information - Insights and Opportunities Report, p.25-26

can be a trusted, independent one-stop shop that supports real consumer decision-making across a growing range of energy choices.

Second, the AEMC should reconsider and challenge the assumption that increasing retail product complexity is inevitable as a market outcome. Although products that target specific consumer segments may be attractive to retailers, complexity increases confusion, disengagement and mistrust rather than improving outcomes for the majority of consumers.

Energy Made Easy must expand beyond plan comparison to a one-stop shop to support consumer decision-making

Our recent CERC shows that only 12% of consumers report having used Energy Made Easy.[42] Those who do tend to be more engaged with the energy system overall in ways including that they already have rooftop solar, and have higher levels of education and energy knowledge, such as knowing their retail tariff or the units used on their electricity bill. They are also more likely to want an active relationship with the energy system.

This could suggest that improvements to EME are likely to benefit consumers who are already better placed to engage. Others rely on alternative comparison tools retailers directly or do not use comparison sites at all. CERC findings indicate that the most commonly cited methods for finding information about energy (such as plans and energy efficiency) are general Google searches (47%), online comparison sites (39%), energy retailers (36%), and recommendations from friends and family (31%). Some consumers also face barriers including digital literacy or limited access that constrain their ability to engage with online comparison tools like EME.

This illustrates the limits of relying on comparison sites alone to support consumer decision-making in an increasingly complex market. EME provides an estimate of likely future costs using the information a consumer provides and, where available, historical data linked to their National Metering Identifier (NMI). However, even personalised estimates remain forecasts and can differ from actual outcomes where households have variable or constrained usage, limited ability to shift demand, or where circumstances change.[43] In addition, the comparison experience can still feel generic because it cannot capture all factors that shape a consumer's real options and costs, including eligibility settings and household constraints.

As energy decisions extend beyond retail pricing to include electrification, energy efficiency, consumer energy resources and other emerging services, consumers are required to navigate a growing web of markets, programs, providers and decisions.[44] Expecting consumers to independently piece this together for what they see as an essential service is unrealistic.

In this context, the EME must continue to improve and expand its functionality to support better consumer outcomes and beyond retail plan comparison. ECA supports the AER's efforts to position EME as the primary source of independent, government-backed consumer energy information and advice. EME has the potential to operate as a trusted one-stop entry point where households and small businesses can understand their options and receive consistent, plain-language guidance across the full range of energy decisions they now face, complementing its existing comparison functionality.

[42] ECA, 2025, Consumer Energy Report Card data | Energy Consumers Australia
[43] How the Energy Made Easy plan search works | Energy Made Easy
[44] ECA, 2025, 2024–25 Pre-Budget submissions - Pre-Budget Submissions - Consult hub, p.6

The AEMC and AER should consider ASIC's MoneySmart initiative as an example of how this transition could be achieved. ASIC was able to successfully transition from a focus on supporting financial literacy and product comparison sites towards a one-stop shop for financial queries. For example, MoneySmart included content designed to help people navigate the system, avoid scams, understand product details, compare offers, understand their rights, and direct people to the ombudsman services. ASIC reports 1 in 2 Australians visited the site in the 2022/23 financial year – significantly more than the 12% of consumers visiting EME.[45]

The AEMC should challenge the assumption that retail product complexity is inevitable

We also encourage the AEMC to challenge the report's assumption that retail products will inevitably become more complex, including suggestions that the market should support a proliferation of highly differentiated and time-specific plans targeted at different consumer cohorts. While such products may offer value to some consumers, feedback from advocates consistently highlights that complexity itself is a major driver of confusion, disengagement and mistrust in the retail market.[46] CERC data shows that 58% of consumers want a basic or low-engagement relationship with the energy system, rather than needing to actively manage usage patterns or conditional pricing to secure fair outcomes. [47] This review presents an important opportunity to push back against complexity at the source for the majority of people who want simplicity, rather than building tools around the problem.

Question 5: Implement reforms such that network tariff design is focused on efficiency

AEMC Recommendation 5: Amend the rules to focus network tariff design on efficiency, supporting a lowest-cost grid and a fairer sharing of costs among consumers

- Do you consider that the proposed reforms would be effective in delivering more efficient network tariffs and better promote the long-term interests of consumers than the existing rules?
- If not, are there different approaches that would work better?

Currently, most electricity distribution network costs are recovered through grid consumption charges. While this approach is familiar and publicly acceptable, it is increasingly not efficient or fit for purpose.

Current network consumption tariffs for households appear commonly set above marginal costs and often designed to change consumer behaviour. This has led to a shift towards daily time-of-use tariff structures. While well-intentioned, this approach relies on several assumptions – notably that retailers would pass on these signals in retail prices and behavioural response will reduce network costs in a big enough way to offset the costs imposed on consumers.

At the same time, the current tariff approach sends the same pricing signals to all customers every day, even though network constraints are highly locational and occur only for limited hours each year. While the current tariff approach may increase the value proposition for consumers with very flexible loads (particularly household batteries and electric vehicles), most of the time, in most of the network, that

[45] ASIC, ASIC's Moneysmart is a trusted source for 1 in 2 adult Australians | ASIC.
[46] E.g.,CHOICE, Justice and Equity Centre.
[47] In our survey, we presented respondents with two types of energy-system relationships and asked which they preferred. The first was a **basic relationship**, focused on receiving a good price and a reliable electricity supply. The second was **an active relationship**, involving choosing between different tariffs, monitoring energy use, managing imports and exports, and selecting clean-energy options.

value proposition is not rooted in the economic reality of the network. Further, these blunt signals can lead to unintended consequences.

As technology increasingly responds autonomously to price signals, there is an opportunity to design sharper, more targeted signals that reflect real network needs. In other words, customers with flexibility can still be encouraged to do so, but in a way that doesn't distort the behaviour of others.

In practice, there are multiple ways to ensure the flexible benefits of batteries, electric vehicle charging and other CER reduce total network costs. One could broadly group these as "pricing" approaches and "engineering" approaches – network tariffs are one approach to "pricing" approaches, though there are dozens of variations on tariffs, as well as other economic "price-based" approaches under which networks could, for example, contract directly with a CER household (or their agent) for services from that specific battery in that specific location. "Engineering" approaches would include existing CER standards, like AS4777 and dynamic operating envelopes, which mandate particular behaviour from CER without compensating the household (and indeed sometimes at a cost to the CER household). Among all of these options for enabling CERs to leverage their flexibility to reduce network costs, postage-stamp type network tariffs are likely the least efficient and effective.

The growing ability of many customers to materially avoid consumption charges means that consumption pricing is likely no longer an equitable or sustainable basis for cost recovery in a high-CER future. Even if customers import less electricity from the grid, they will continue to rely on the network. Moreover, many will reduce imports but increase exports, which still requires use of the network.

Recovering more costs through access charges, while traditionally viewed as regressive, may ultimately provide a more robust and equitable foundation for network revenue. **However, any shift from consumption-based to more fixed charges must be done carefully and ensure vulnerable consumers are not disadvantaged.**

"Fairness" is an inherently contested concept, and stakeholders will hold differing views. That said, we caution anyone arguing that reducing network consumption tariffs and increasing fixed network tariffs is less "fair" than the status quo.

Appendix 1 provides an exploration of the potential impacts of a move from consumption-based network tariffs towards more fixed network tariffs. Our analysis shows that while many vulnerable customers may benefit, others may face immediate detriment. For example:

- Energy-related financial hardship is correlated with high consumption[48] and therefore a shift to higher fixed charges will seemingly benefit many of these households.
- However, many low-income, low-consumption households are likely to experience bill increases.

This highlights that reforms to improve outcomes for many consumers may simultaneously have some unintended consequences. To manage these distributional consequences, the AEMC must articulate how it interprets "fairness" and "equity" and ensure appropriate guardrails are in place to protect consumers for whom higher bills would not be viewed as "fair".

We conclude that it will be challenging (if not impossible) for networks alone to set fixed charges that are universally considered "fair". We maintain our view that there is a need for broader reform to ensure that

[48] See for example ECA, Understanding and measuring energy hardship in Australia (2025) & Nelson, McCracken-Hewson, Sundstrom & Hawthorne, The drivers of energy-related financial hardship in Australia – understanding the role of income, consumption and housing, Energy Policy, Volume 124, 2019.

electricity prices lead to fair outcomes as we continue the transition. For example, even if networks raise fixed charges, there is no guarantee that retailers will pass these on to customers in the way the AEMC expects (as retailers will continue to have discretion over their pricing structures). As such, truly achieving fairness will require a bigger exploration of the appropriate way to allocate fixed network costs from the community.

A central question that can also mitigate these impacts is how networks should set fixed network tariffs. At this stage, we do not have strong recommendations on the “right” approach, as each method carries trade-offs. Instead, we recommend further analysis and consultation to fully understand these options and their impacts. Instead, we recommend further analysis and consultation to fully understand these options and their impacts.

The AEMC should:

- Clearly define “fairness”, “efficiency” and “equity” in the next paper and explain how the reforms achieve those goals.
- Consult further on how networks should set fixed network charges and allocate residual costs.
- Set clear rules on how retailers should or should not pass through network costs.
- Make any shift from network consumption tariffs be gradual.
- Review how networks allocate costs across customer classes (residential, SME and industrial) to ensure these practices support fair outcomes.

The remainder of this chapter has two sections. The first section provides further evidence to support these central recommendations. The second section provides responses to the specific reform options proposed in the report.

Ensuring network tariffs are “fair”

Fairness, equity and efficiency need clearer definitions

The Draft Report argues that higher fixed network tariffs (with a dynamic component) are more equitable, fairer and more efficient.[49] However, these terms are not adequately defined. This limits the ability for stakeholders to interpret the intent and likely impacts of the reforms.

In previous work for ECA, Dragoman Consulting distinguished between *equity* and *fairness* in network cost recovery (see report attached at **Attachment 2**). “Equity” was framed as the appropriate allocation of costs and benefits among consumers based on how they impact the network. In contrast, “fairness” concerned a customer’s ability to pay and broader economic inequalities.[50]

Stakeholders will inevitably have their own interpretations of these terms, which likely means that the AEMC’s proposed reforms will be understood differently across the sector. For this reason, we recommend that the AEMC provide clear and explicit definitions of “fairness”, “equity” and “efficiency” in its final decision. While stakeholders may still disagree, a common set of definitions will improve clarity and reduce misunderstanding.

More consultation is required to determine how fixed network charges should be set

Currently, networks generally apply the same fixed charge to all residential customers. A shift toward materially higher fixed charges naturally raises two central questions: (1) how much of a network’s

[49] AEMC, Draft Report, 2025, p. 38
[50] Dragoman, Network Equity, 2025. Access here.

revenue should be recovered from fixed charges and (2) whether applying the same fixed charge to each customer remains appropriate.

We do not have a firm view on the optimal method for determining and setting fixed charges. However, we do not think it will be publicly acceptable for all residential customers to face the same fixed charge under a significantly more fixed price heavy structure. As noted above, more analysis is needed to assess the impacts and feasibility of different approaches.

We recognise that there will be some adversely affected by a change to higher fixed charges. Of those, some are currently paying an inequitably lower amount and some in low-wealth, low-consumption homes will see bill increases. Notwithstanding the clear need to support the latter, the former should not continue to receive an undue advantage – especially as this cohort may grow quickly, placing an undue burden on others.

International experience can provide some suggested reform pathways to limit unintended impacts. For example, many European countries use some type of capacity charge to recover network charges from households.[51] Dutch network tariffs are exclusively capacity-based for small users.[52] In essence, these tariffs recover costs based on how much energy they could import or export. These approaches aim to ensure that smaller and lower consuming households pay less than larger households.

In contrast, the Californian Public Utilities Commission has adopted fixed charges that vary based on household income.[53] Dragoman Consulting has proposed a similar concept, where fixed network costs would be recovered via council rates, charging homeowners directly with charges in proportion to land value. These two approaches share a common aim – ensure that households with a higher capacity to pay contribute more than others.

All approaches have advantages and disadvantages – in terms of distributional impacts and feasibility. We suggest the AEMC puts forward as many potential options and discusses the pros and cons of each approach.

The AEMC will need to ensure that a shift towards higher fixed network charges remains "fair"

Some have criticised the proposed reforms out of concerns of the impacts on low-income households.[54] As we outline in **Appendix A**, these concerns are valid but requires further nuance.

If the system moves away from consumption-based pricing and towards higher fixed charges, the AEMC will need to advise governments on the distributional risks to ensure adequate safeguards are implemented. Higher fixed charges also provide the opportunity to reconsider how rebates or concessions apply. For example, if there is concern that higher fixed network charges would disadvantage concession customers, then applying financial supports directly to fixed charges would help ensure continued fair access to essential energy services.

[51] A capacity charge sets fixed prices based on the connection capacity.
[52] Eurelectric, The missing piece – Powering the energy transition with efficient network tariffs. Accessed here
[53] See here for more information.
[54] See for example Sydney Morning Herald, The power bill change that will sting low-earners $200 more, 2026. Accessed here.

The AEMC should set clear rules on how retailers should or should not pass through network costs

Consumers ultimately pay retail electricity prices, not network tariffs. While some retailers pass network charges directly through to customers, many do not.[55] Retailers will blend network, wholesale, environmental and retail costs into simplified tariffs and many choose not to reflect underlying network tariffs structures in full.

The AEMC appears to expect that its proposed reforms will result in some residential customers paying more and others paying less than under the status quo. However, this outcome relies on retailers directly passing through the new network cost structures to individual customers.

If retailers do not adjust their prices (or only adjust them partially), the reforms will not deliver the distributional outcomes the AEMC intends. In practice, the effects of tariff reform could be muted, inconsistent across retailers, or overridden entirely by retail pricing strategies.

Given this risk, the AEMC may need to consider whether the National Energy Retail Rules should include greater prescription or guidance on how retailers should (or should not) pass through changing network cost structures. This would provide greater certainty that the pricing impacts assumed in the AEMC's analysis will materialise in practice and be experienced consistently by consumers.

Any shift from away from network consumption prices to fixed prices should be measured

As outlined in **Appendix A**, some customers may experience significant bill increases if consumption charges fall and fixed charges rise. However, as discussed above, the scale of these impacts will depend on:

- how networks set fixed charges, and
- how retailers choose to pass through underlying cost structures.

Regardless of the equity or fairness rationale for the reforms, we recommend a measured, gradual transition. This will allow stakeholders to assess the impacts of changes as they occur and respond to unintended consequences before they become entrenched.

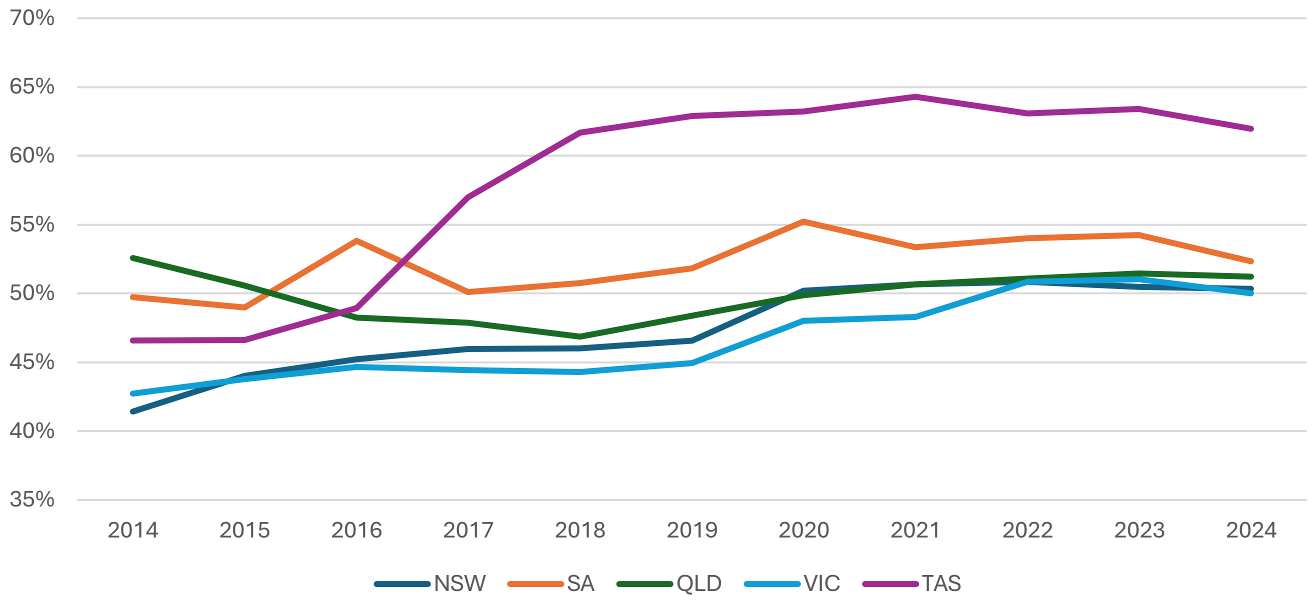
The AEMC should review how networks allocate costs across customers classes

To date, this review has focused on how to "split the pie" amongst households. However, an equally important question is how large that pie should be in the first place.

In 2023–24, distribution networks recovered around 51% of standard control services revenue from residential customers. As shown in Figure 3, many networks have increased the proportion of revenue recovered from households over time. It is unclear to us whether this outcome is appropriate or not. This is because the methods networks use to set and allocate costs between customer classes lack transparency.

[55] ECA, Industry perspectives on electricity tariffs and retail pricing, 2022.

Figure 3 – Proportion of network standard control services revenue recovered from households in financial year 2014 to 2024



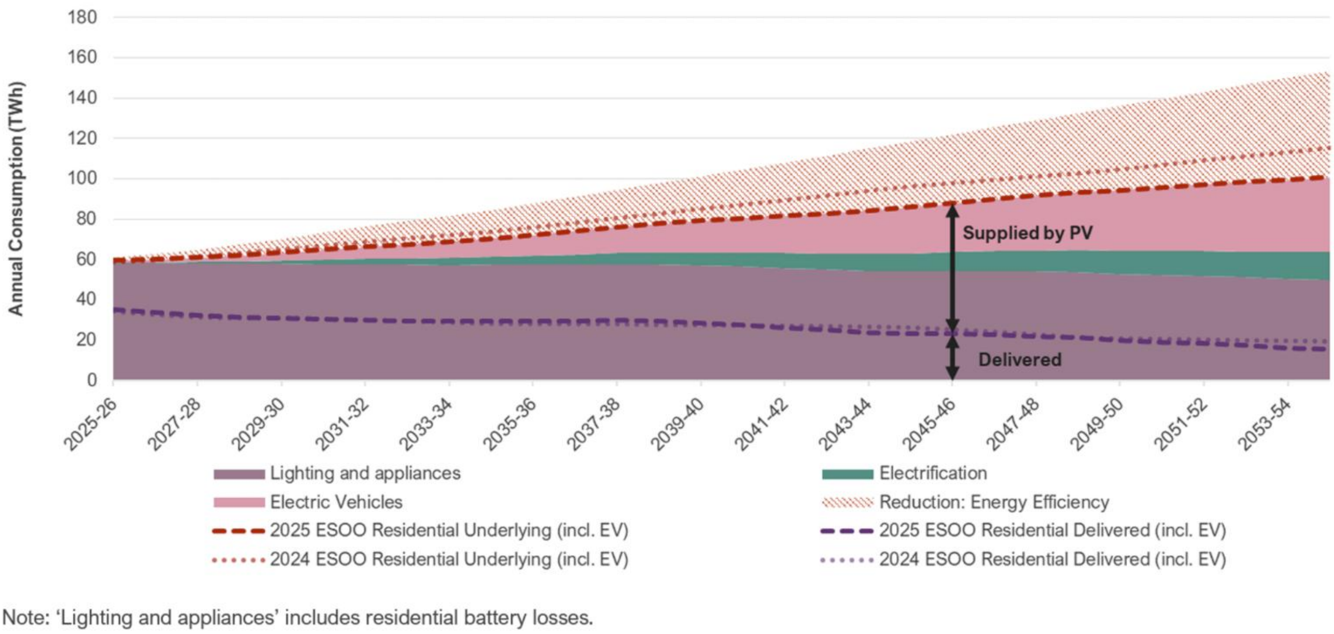
Source: Analysis of distribution network Economic Benchmarking RINs.

This issue will be pertinent considering future trends. Looking forward, the Australian Energy Market Operator's 2025 NEM Electricity Statement of Opportunities forecasts that residential consumption from the transmission system will continue to fall. Under the Step Change scenario, electricity delivered from the transmission system to households is projected to decline by 43% over the next 20 years.[56] This is primarily driven by continued growth in distributed generation, as illustrated in Figure 4.

This reduction in residential consumption raises an important policy question: to what extent should households be expected to fund upcoming transmission investments when they are forecast to consume significantly less energy from the transmission network? Greater scrutiny of the cost allocation frameworks will be necessary to ensure that charges remain efficient and equitable across customer classes.

[56] AEMO, 2025 ESOO, p. 18

Figure 4 - Components of residential consumption forecast, Step Change scenario, 2025-26 to 2054-55



Source: AEMO, 2025 ESOO, p. 18

Feedback on the specific recommendations

We understand that the AEMC has recommended several reforms to deliver 'good' network tariffs:

- Removing the requirement to set tariffs to just reflect long-run marginal cost, but also for short-run marginal cost (e.g. targeted congestion pricing).
- Setting outcome-based objectives for tariff design to clarify the AER and networks should focus on efficiency.
- Changes to the pricing principles to clarify how residual costs should be allocated.
- Removing the requirement for tariffs to not change significantly between periods.

In addition, the AEMC is testing whether any additional obligations, financial rewards or penalties are necessary to help networks design efficient tariffs through the transition.

As we understand the AEMC's intentions of the reforms, fixed charges have a different intent to dynamic charges:

- **Fixed charges** recover each customer's contribution to shared, fixed or residual network costs. These are direct cost allocation mechanisms.
- **Dynamic charges** act more like wholesale market signals—they indicate when and where the network is under stress and seek to allocate supply or demand-response. They are not primarily mechanisms for allocating fixed costs and do not need to be passed through directly to individual customers.

We broadly agree with the proposed reforms, with some caveats, as outlined below.

Any location-based congestion pricing should be introduced carefully

As we understand the proposal, dynamic consumption or export charges would generally be zero, rising only during periods of network congestion. Because congestion is geographically specific, this may result in location-based network pricing.

While this may be efficient from a technical perspective, it raises difficult fairness and equity questions. It would create the potential for many consumers to face price signals they have no ability to respond to. For this reason, we recommend that any location-based congestion pricing be opt-in only (at least initially). This would allow more engaged or CER enabled customers to provide network services without imposing inequitable, unavoidable charges on others.

Simple, stable and standardised approaches to network tariff design remain in the best interests of consumers

Dynamic congestion pricing introduces significant implementation complexity. Retailers vary substantially in capability, and many currently pass through network tariffs directly to consumers.

In practice, simple, standardised, and predictable tariff structures will often deliver better consumer outcomes than theoretically optimal but highly complex alternatives. We encourage the AEMC to continue to prioritise simplicity and transparency in tariff design.

For similar reasons, we also have some concerns with the proposals to allow network tariffs to change frequently.

Retailers may need guidance on how to allocate dynamic network charges

We believe the intention of dynamic network charges is not for them to operate as a major cost-recovery mechanism for individual customers. However, it is reasonable to assume that many customers—particularly those with CER who seek greater returns on their investment (e.g., Project Edith participants)—may opt in to being directly exposed to these charges.

While the AEMC has indicated these dynamic charges are expected to be relatively small, there is a risk that they could become a significant component of total network costs for a *retailer*. In such cases, retailers may need clear guidance on how these costs should be allocated across their customer base. For example, should retailers allocate congestion-related charges:

- only to customers who opt-in to them (e.g. customers with batteries and EVs)
- only customers in areas of congestion
- across all customers proportionally, or
- according to a regulated or standardised methodology?

Providing guidance would reduce ambiguity and support consistent approaches across the market.

We do not support financial rewards or penalties for network tariff design

We believe the AER can ensure that networks design appropriate network tariffs.

Question 6: Ensure that network tariffs are developed and designed for energy service providers

AEMC Recommendation 6: Amend the rules to ensure networks design tariffs for energy service providers, rather than directly for customers, to promote more flexible and innovative retail offers

- Do you consider that removing or amending the customer impact and customer understanding principles, as outlined, would make energy service providers central to network tariff design? If so, why and what would the preferred option be? If not, are there different approaches that would work better?
- Do you consider that the tariff structure statement timing can be amended to reduce energy service provider compliance costs and support energy service provider innovation? If so, why and what would be the preferred option? If not, are there different approaches that would work better?

As we understand it, the AEMC has proposed:

- removing the 'customer impact' and 'customer understanding' principles to make energy services provider consultation more central to network tariff design.
- giving networks more flexibility as to how they set tariffs, notably allowing networks to change tariffs within the period.

We agree strongly with the need for networks to design network tariffs for retailers, not customers. Customers do not pay network tariffs, they pay retail prices. While some retailers pass on network tariff structures to customers, some don't.

We have concerns with some of the potential implications of the proposals. We are also not convinced the proposed reforms will achieve the outcomes AEMC intends. We recommend that the:

- customer impact principle is maintained in the rules.
- AER maintains having a key role in regulating network tariff design.
- AEMC looks to align approaches to network tariff design across networks, where possible.
- AEMC considers implementing guidance in the rules for how retailers should incorporate network tariffs into retail prices.

We explain why below.

Fully removing the customer impact principle does not seem feasible in practice

The AEMC has stated that networks should set fixed charges such that:[57]

- they are not so low that other customers pay more when a customer disconnects, and
- they are not so high that customers are better off disconnecting entirely (stand-alone cost test).

These tests are inherently customer-impact assessments, and it is difficult to see how they can be met if customer impact principles are removed.

[57] AEMC, Draft Report, 2025, p. 92.

We do, however, consider that customer understanding principles could be relaxed for dynamic charges, assuming these are not a major component of bills and are designed for end customers. This may help networks move away from designing tariffs for behaviour change by customers.

Retailers may not translate signals or negotiate tariffs in ways that benefit consumers

We have reservations about:

- expecting retailers to advocate for tariffs that reflect the long-term interests of consumers, and
- expecting retailers to accurately and transparently translate network incentives into retail or service offerings.

Retailers are profit-maximising and risk-minimising entities operating in a market with significant volatility and substantial information asymmetry relative to consumers. Retailers have different business models and desired customers. Many retailers already appear to struggle managing network tariffs and the potential for more complex tariffs could worsen this. There is also a material risk that inconsistent retailer interpretations of tariff structures and inconsistent passthrough approaches will lead to customer confusion.

In essence, while the AEMC appears to intend that the proposal will shift price risk from customers to retailers, the opposite outcome is possible. Retailers may instead seek tariffs that minimise their own exposure to price risk, pushing volatility back onto customers.

As such, we consider there is merit to having some retailer pricing principles, or other principles-based obligations in the rules that guide how retailers incorporate network tariffs into the rules. A consumer duty framework may be an appropriate solution to address these concerns.

Research undertaken by Professor Jeannie Paterson of the University of Melbourne (commissioned by ECA) highlights how a consumer duty could require retailers to deliver suitable products and services to consumers, having regard to their needs, characteristics and objectives.[58] A design and distribution obligation (similar to Part 7.8A of the Corporations Act) could be one way in which retailers are required to meet a product suitability outcome. This would require retailers to actively think about their target market and design and market products accordingly (including how to appropriately translate network tariffs into retail offers that are suitable for consumers), without requiring prescriptive rules that could be gamed by retailers and potentially stifle innovation.

It is unclear how retailers and a network could “work together” to design tariffs in practice

In many jurisdictions, more than twenty retailers operate. It is difficult to see how networks could meaningfully engage with all of them in tariff design. Ultimately, an independent arbitrator - the AER will be needed to set tariffs or adjudicate disagreements.

Question 7: We are considering transitional measures to manage the impacts of reforms, and will outline these in the final report

- Do you consider the proposed transitional supports would manage the transition effectively and fairly? Are there other options that we have not considered?

[58] Paterson, Willis and Bourova, Models for a Consumer Duty in the Energy Retail Market, 3, 9.

- How can the distributional impacts of a move to predominantly fixed charges be assessed and managed so that consumers are transitioned fairly and risks are appropriately managed?

See generally our comments in response to earlier questions.

We recognise and support the AEMC's intention to consider transitional measures as an important part of considering any reform that may significantly change how network costs are recovered from consumers. We also agree that a shift of this kind will create both winners and losers, as outlined in greater detail earlier in this submission. Given this uncertainty, our view is that any transition toward higher fixed charges should occur in a gradual, measured way.

We therefore encourage the AEMC to ensure that any transitional measures are underpinned by a clear and shared understanding of what "targeted support" should mean in practice. We also encourage the AEMC to clearly communicate to Ministers and policymakers the types of households likely to be affected, the nature of the risks they face, and the kinds of supports that may be required to manage those risks during transition.

Our Consumer Energy Report Card research shows that energy hardship is widespread and highly diverse, with nearly one in five households vulnerable to or experiencing hardship, often for very different reasons.[59] Importantly, many households experiencing hardship are not accessing existing support mechanisms, including retailer hardship programs or government assistance. This highlights a key risk that transitional measures cannot be effectively managed through blunt or opt-in approaches alone. Targeted support must be informed by multiple indicators of vulnerability, minimise reliance on consumer awareness or action and be capable of adjustment as impacts become clearer over time.

While the proposed options may reduce implementations risks, they do not in themselves manage the distributional impacts of higher fixed charges on consumers. AEMC should provide this more clearly and consider what consumer-facing transitional measures will be required.

Question 8: An implementation schedule that achieves necessary reform quickly while balancing cost and risk

- Do you consider the reforms could be implemented using current processes outlined above (eg, network reset processes)? Or do you consider that different processes, such as an accelerated implementation approach, would be warranted?
- Are there other considerations that we need to be aware of in implementing these reforms?

See generally our comments in response to earlier questions. As highlighted in this submission we think there is considerable work still to be done in refining the proposals to ensure they will deliver good outcomes for consumers and will be broadly acceptable to stakeholders.

We note the dependency of many of the changes on rule change requests (which require a submission from another party) and law changes (which require the agreement of Ministers). Implementation pathways and timing might therefore be more appropriately considered by Energy Ministers once preferred options have been broadly agreed. We recommend the AEMC prioritise the further analysis and evidence needed to refine and test the proposals and build a degree of consensus around preferred options.

[59] ECA, 2025, Consumer Energy Report Card: Understanding and measuring energy hardship in Australia | Energy Consumers Australia.

Appendix A – Understanding the distributional impacts of a transition away from network consumption tariffs

Overall, it is difficult to understand the true distributional impacts of the proposed reforms. This is for three key reasons:

- It is unclear how networks would set fixed network charges
- It is unclear how the proposed dynamic tariffs would impact bills
- It is unclear how retailers would reflect underlying cost changes in their offers.[60]

An additional issue is how concession and other financial support programs may change to mitigate some impacts.

That said, it can broadly be assumed that the proposed reforms would result in retailers reducing consumption prices, while increasing fixed charges. Such an approach would suggest that:

- High grid consumption households would see a bill reduction.
- Low grid consumption households would see a bill increase.

Below we provide some analysis to highlight variation in residential grid electricity consumption and indicate who these high or low consuming households are. Overall, our analysis suggests it is hard to draw any strong conclusions, given the large variation in residential electricity consumption. That said, we observe that:

- Low-income households do tend to have lower grid consumption and therefore some may see a bill increase.
- Many customers experiencing energy-related financial hardship have high grid consumption and may see a bill decrease.

These findings reiterate that it is difficult for networks to set truly “fair” prices and there will be a need for broader reform to ensure distributional fairness.

There is no “typical electricity consumer”

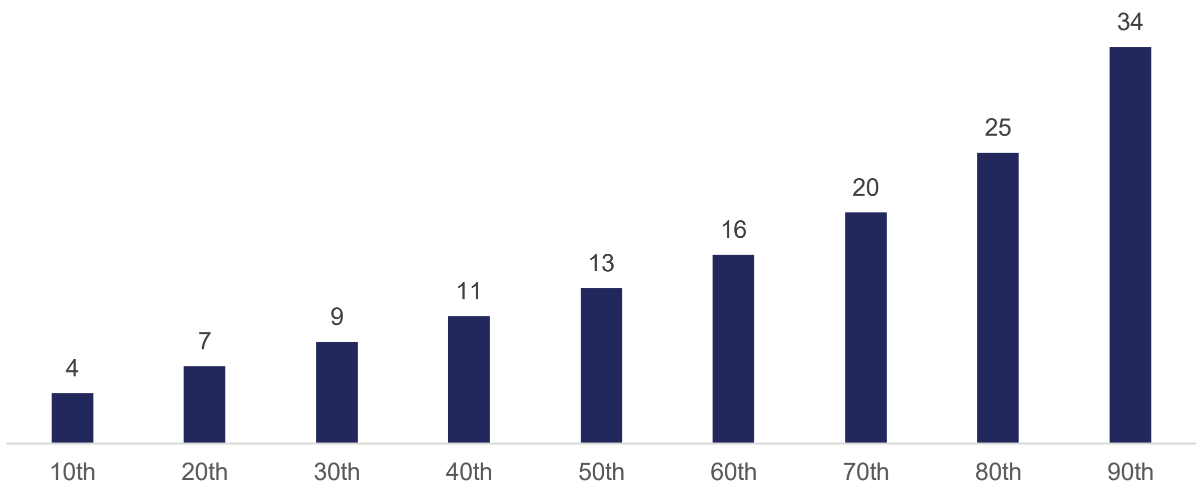
In 2023-24, the median residential electricity customer across the NEM consumed 4,257 kWh of grid electricity a year (around 12 kWh a day, on average). However:

- 25% of customers consumed less than 2,681 kWh over the year (7 kWh a day, on average).
- 25% of customers consumed more than 6,654 kWh over the year (18 kWh a day, on average).

Figure 1 shows residential grid consumption deciles for households in the Energex network to further highlight how diverse households are. Notably, the findings suggest that more than 1% of Energex residential customers consume more than 50 kWh of grid electricity a day, on average. Conversely, more than 1% of Energex households appear to consume under 1 kWh of grid electricity a day on average.

[60] This is an important distinction now that the AEMC intends for networks to price for retailers, not customers directly.

Figure 1 – 10th to 90th percentile average daily grid consumption by households in Energex network

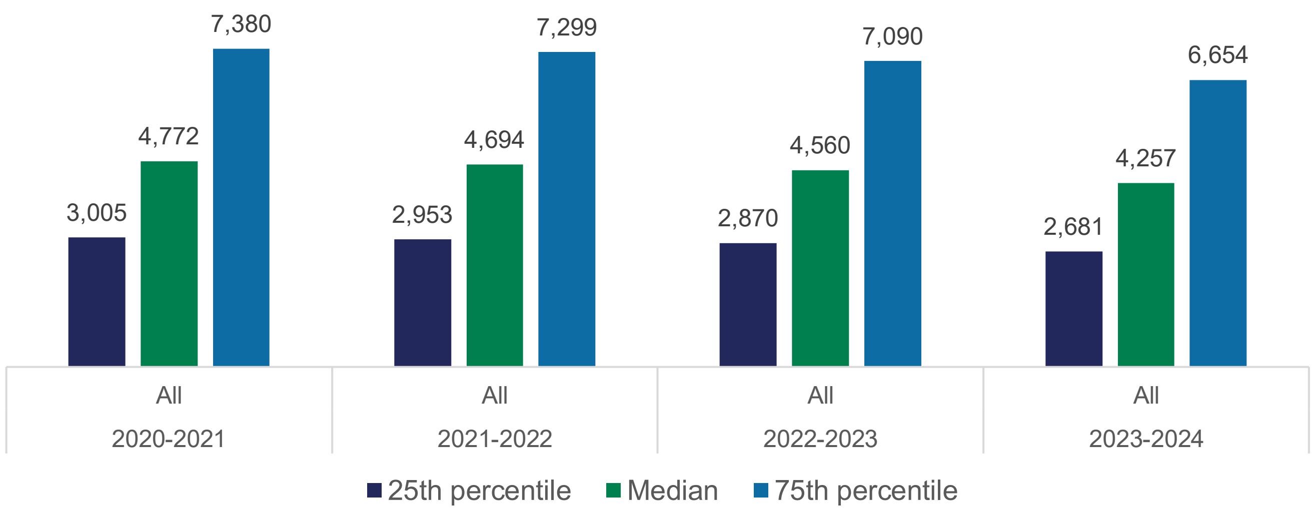


Source: ECA, UQ and EQ Collaboration Grant.

Households are consuming less electricity from the grid than they used to

Figure 2 shows that over the last four years, residential grid electricity consumption has fallen across the median, 25th and 75th percentiles. AER analysis shows that since 2006, average residential grid consumption has fallen 23%.[61]

Figure 2 - 25th percentile, median and 75th percentile annual household electricity consumption in the NEM (kWh)



Source: ACCC, Retail Electricity Pricing Inquiry (2025).

[61] AER, State of the Energy Market 2025, 2025, p. 113-114.

Figure 4 shows that AEMO forecasts this trend is likely to continue. Growth in behind the meter consumption due to electrification of gas and transport will be offset by growth in behind the meter generation, storage, and energy efficiency improvements.

Households with solar don't consume less grid electricity than households without it. Battery customers do though.

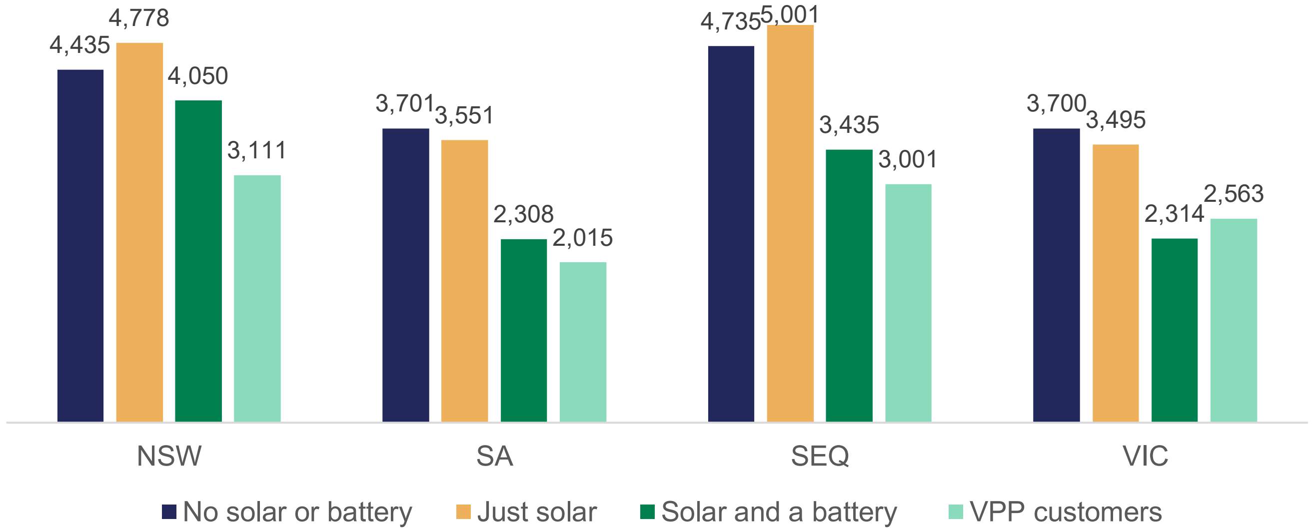
Figure 3 shows median grid electricity consumption by households over the four quarters from 2023 Q3 to 2024 Q2. It breaks households into four groups – households without solar or batteries, households just with solar, and households with solar and batteries, and households enrolled in a VPP.

Figure 3 shows:

- Households with solar tend to consume similar amounts of grid electricity as households without it. This is because households with solar tend to have higher behind the meter consumption as they are larger (e.g. a large proportion of households without solar are apartments).
- Households with batteries do tend to consume around 33% less grid electricity than households with solar – and households without solar.

Data from Figure 3 was collected before the Federal Government's Battery subsidy was announced. Battery adoption has increased materially in the second half of 2025 and installation sizes have also increased.[62] As such, this chart may overstate typical grid consumption levels for battery customers. In saying this, we re-iterate that medians and averages are misleading, and individual circumstances will differ.

Figure 3 - Median grid electricity consumption 2023 Q3 to 2024 Q2 (kWh)



Source: ACCC, Retail Electricity Pricing Inquiry, 2025.

[62] Tristan Edis, Home battery installations will match the scale of Snowy Hydro scheme – in a single year, Renew Economy, 2026.

Energy consumption is correlated with income, but it's complicated.

There are numerous varied, interrelated and complex drivers of household electricity consumption. This includes local climate, household demographics, household behaviour, building stock and the type and number of appliances.[63] A notable driver is the type of heating and cooling used in the home, given that a large driver of electricity consumption is heating and cooling.

Figure 4 shows, using ECA Consumer Energy Report Card data, estimated median monthly energy expenses across households across late 2024 to late 2025. We have broken the results by household income (reported in four bands, with around 25% of the population in each band) and whether the occupants own their home or rent it.

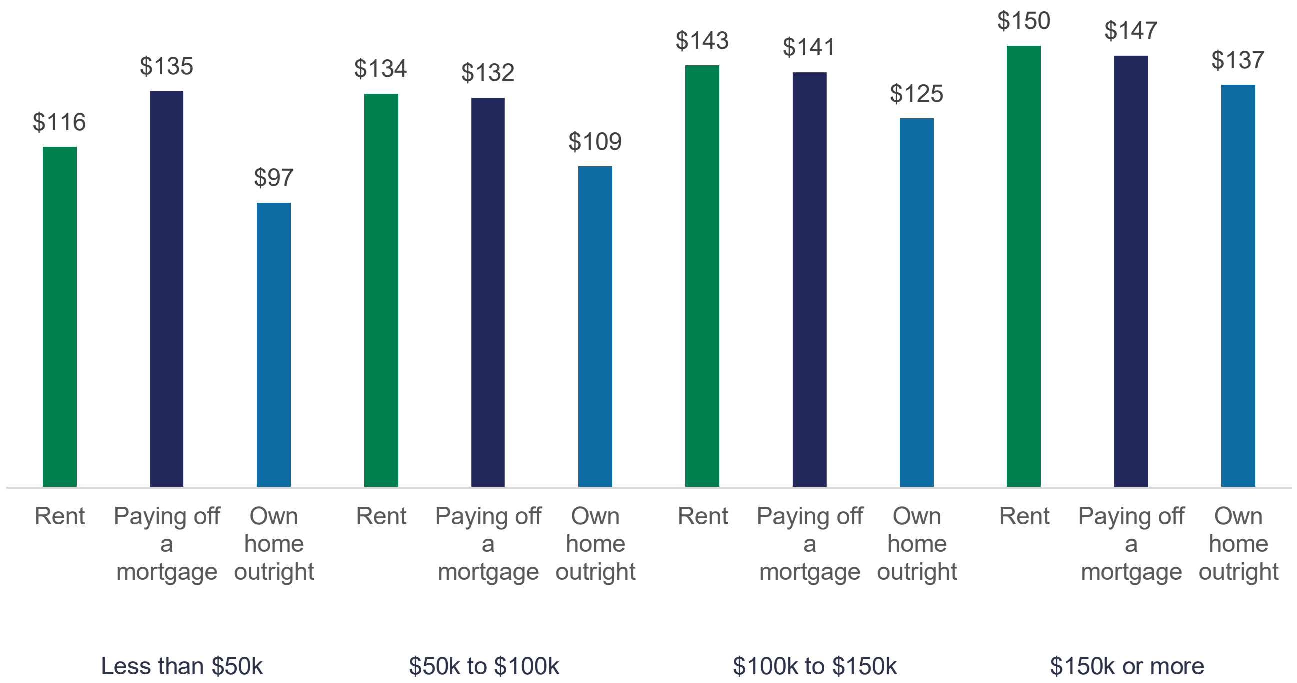
Figure 4 illustrates the positive relationship between income and electricity expenditure. This suggests that as a rule, lower-income households do consume less electricity. However, the results do illustrate that renters of a similar income as homeowner households tend to pay more – highlighting the complexity of household electricity consumption.

When interpreting these results, we make a couple of key points:

- Averages and medians can be misleading as they do not illustrate the underlying variation in the actual lived experience of individual households.
- Income is different to wealth and ability to pay. For example, renters are more likely to say they are under financial difficulty, than homeowners of a similar income. Higher income households also tend to have more people living in them, and therefore have higher running expenses.[64]
- As energy costs as a proportion of income are much higher for low-income households, lower-income households are more sensitive to electricity consumption prices and are more likely to be cutting back on energy consumption.[65]

[63] Fan, MacGill & Sproul, Statistical analysis of driving factors of residential energy demand in the greater Sydney region, Australia
[64] ECA, Consumer Energy Report Card.
[65] ECA, Consumer knowledge of electricity pricing and responsiveness to price signals, 2025.

Figure 4 - Estimated median monthly electricity expenditure by household income and homeownership



Source: ECA, Consumer Energy Report Card. Note: Data was sourced in October 2024, April 2025 and October 2025.

Energy-related financial hardship is correlated with high grid electricity consumption

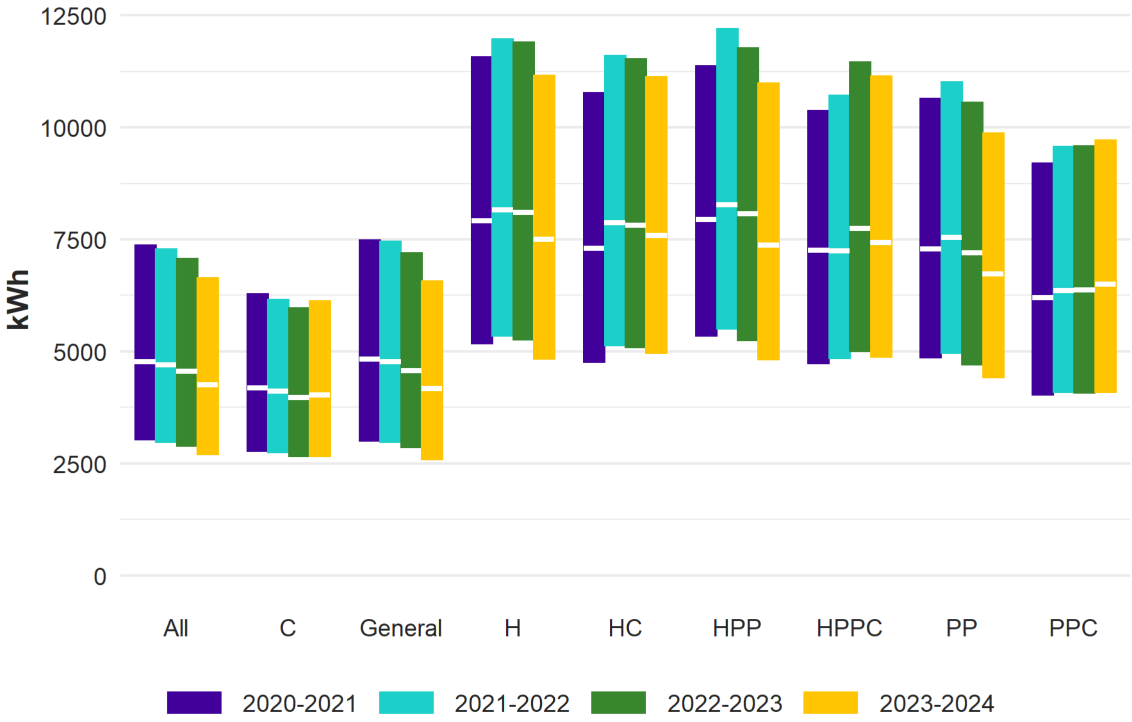
ACCC data finds that customers enrolled in retailer hardship programs or on a payment plan consume more grid electricity than other households. For example, the median hardship customer consumed around 7,500 kWh of electricity in 2023-34. This was around 80% more than the median “general” customer (not on a concession, payment plan, or hardship program).

ECA research estimated that around 1 in 5 households are experiencing or vulnerable to energy hardship. The research also found that these households tend to have higher-than-average energy bills: about half reported energy expenditures in the top quartile of all bills in the sample.[66]

Our results also found that most of these households had low incomes. So while low-income households tend to consume less electricity than others, this high-level trend can mask a form of hidden vulnerability: the combination of low incomes and high electricity expenditure.

[66] ECA, Understanding and measuring energy hardship in Australia, 2025.

Figure 5 – Annual grid consumption by residential customer groups in the NEM



Source: ACCC, Retail Electricity Pricing Inquiry, 2025. Note: C is concession, H is hardship program and PP is payment plan.

The national voice for residential and small business energy consumers

ENERGY CONSUMERS AUSTRALIA

13th February 2026

Adam Collins
Executive Manager, Advocacy & Policy
adam.collins@energyconsumersaustralia.com.au

Finncorn

AEMC Pricing Review – assessing impacts of Recommendations 1 and 2

You asked Finncorn to examine the AEMC's draft report from their Pricing Review, with a particular focus on their Theme 1 – "*Harness competition to improve outcomes for all consumers*".

Under this theme, the AEMC are making two very significant Recommendations which would materially alter retail competition, pricing and consumer experience. We summarise these as:

R1 – 'Same plan, same price, no loyalty tax'

R2 – 'Auction off disengaged customer cohorts'

We have prepared the following paper based on our understanding of the nature of retail competition in electricity markets. In our view, much of the rationale for these recommendations goes back to issues we analysed closely for ECA in 2017, to help inform the ACCC's Retail Electricity Pricing Inquiry[1] and which were adopted by the Victorian Essential Services Commission in its consideration of the benefits (or otherwise) of the competitive retail market at that time.[2]

We provide our brief thoughts on how ECA might consider the consumer impacts of these recommendations, including some suggestions on how the detailed design of these reforms might assist in achieving the objectives the AEMC has stated in theme 1 above.

We understand ECA may choose to incorporate this paper as part of its public submission.

Yours sincerely,

David Heard
Principal, Finncorn Consulting
david.heard@finncorn.com

[1] Still available here: https://energyconsumersaustralia.com.au/our-work/research/state-play-quantifying-competitive-outcomes-retailing-nem

[2] For example: https://www.esc.vic.gov.au/sites/default/files/documents/The-unfortunate-paradox-of-retail-energy-prices-20180625.pdf

AEMC Pricing Review

Finncorn Consulting's assessment of Recommendations 1 and 2 as presented in the Draft Report

Released as a public submission

13th February 2026

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Recommendations should be considered together…

Our reading of the AEMC's materials including the Draft Report suggest to us that the intention here is to reshape (for the better) the nature of retail competition for small customers.

In doing this, we think the two recommendations in isolation would be far less effective than a well-considered version of both being applied.

This is because in many respects, effective retail competition is fragile, and the prima facie impact of R1 would be likely to threaten at least the external metrics that might indicate it exists. By contrast, a well-structured R2 could encourage and strengthen it.

What does good look like?

We regard competition as effective when it reveals the efficient cost to provide energy services to customers, without allowing for systematic excess returns to be earned within the retail industry.

In addition to this, competitive activity itself involves real costs, which are recovered from consumers – so more is not necessarily better.

There is an optimum where competitive pressures deliver the efficient outcome, but not to the point of driving up industry costs for little or no marginal consumer benefit in pricing or any other dimension of the service provided.

… and with an eye on replacing the DMO/VDO

We think the AEMC have an ambitious view that under these recommendations, there will be a reliable and regular indication of the efficient cost to serve cohorts of 'basic' residential customers – via the revealed pricing from auctions held under R2.

If that is the case, this price could form a market-based benchmark that could replace the administratively determined DMO/VDO equivalent. We tend to agree this would be a better outcome, with less distortion and regulatory risk for both retailers and consumers.

R1 – same plan, same price, no loyalty tax

These are some of the questions which we think consumer advocates should ask (and they or the AEMC should answer!) in relation to R1:

- How important is rewarding / encouraging consumer engagement, versus uneven pricing outcomes that tend to result?
- Are more even pricing outcomes regardless of engagement level desirable – is this a dimension of 'equity' that should be pursued through retail regulation?
- If so, is an improvement in equity alone a good enough reason to do this?
- How concerned should consumer stakeholders be about 'output'-style measures of retail competition such as churn, quantity of retailers, and market concentration versus 'outcomes' – such as the average prices consumers face?
- Is R1 likely to reduce or raise industry costs?
- Regardless of the answer to the above, is R1 likely to reduce or raise industry profitability?
- There is a difference because the impacts on competition are relevant here – what would happen?

First order: Smoothing out retailer profits, not slashing them

Prima facie, given there is a differential between back-back / front-book profitability (aka a loyalty tax), narrowing or eliminating that via regulation would be expected to compress the range of gross margin per customer within a given retailer towards a narrower band.

That implies some winners (the disengaged), some losers (the engaged) but as a first-order effect, no net change in retail costs and margins.

This is the starting-point for thinking about R1, and there MIGHT be an argument that even this outcome is better than the status quo IF one or more of the following are true:

- An acceptable definition of 'equity' is that same product should mean same price[3];
- There is no underlying suspicion that retailers are overearning via the status quo;
- It is considered worthwhile merely in order to reduce distrust in retailer offers and thereby increase customer satisfaction / engagement;
- It saves customers the time, effort and existential angst associated with comparing energy plans in search of large savings.

In other words, there is a fairly pessimistic scenario where all R1 does is shift rent from the disengaged to the engaged, but even that could be taken as an improvement.

Second order: Impacting structural costs

Beyond this, it is important to consider the second-order effect as well – what would such a regulatory structure imposed on retail pricing mean for retailer costs?

A reasonable hypothesis is that a large proportion of observed churn is driven by price-based competition, that is in turn funded by the loyalty tax. In this case, R1 would mean lower churn.

Competing is expensive (see our prior work on this via footnote 1).

As a result, industry-wide retailer costs could be materially reduced if there is a general reduction in competitive activity – via lower customer acquisition and retention costs.

In addition to this we might also see chunks of fixed costs come out of the industry, as retailers totally dependent on the loyalty tax as their strategy fail.

Countering this, the regulation itself would introduce material transitional and ongoing compliance costs, both within retailers and the AER, which would be recovered from consumers.

We don't think the transitional costs should be over-emphasised, but it would be important to have a view on the net effect on structural ongoing costs. This would require proponents of R1 to opine on:

1. How much will churn decline?
2. How much operating cost will that remove from retailers?
3. How many retailers will exit?
4. How much fixed cost will that remove from the industry?
5. What are the offsetting new costs?
6. What is the net impact on structural retail electricity industry costs?

Simple!

Third order: Impact on competition and thus profitability / consumer costs

By this stage we would have a view on the <u>efficiency</u> of R1 – and for the sake of the argument let us assume it would be expected to structurally lower the overall industry costs by some meaningful amount.

The extent to which consumers see any benefit passed through as lower prices relies on the <u>effectiveness</u> of retail competition, and this is another question entirely.

What we can observe is that the status quo has provided a mechanism for new-entrant retailers to establish themselves, and for all retailers[4] to compete and (in some cases) grow their customer base.

[3] One might equally argue that 'equity' mean those who shop around, benefit. Others would note the practical impediments of complexity in doing so, for what is an essential service.

[4] See our Appendix for a summary of retailers and their residential customer number trends over the past five years.

Therefore, it seems reasonable to assume under R1 there will be less of this competitive activity (without opining on whether that is good or bad for consumers).

We think it is highly-relevant to observe that smaller retailers are fundamentally higher-cost than large ones[5], largely due to:

- Scale effects of fixed costs
- Benefits of vertical integration for larger gentailers
- Higher hedging costs for smaller, less-creditworthy retailers

This can be papered over by small retailers, if they are prepared to really work the 'loyalty tax' – barely-profitable front-book offers to gain customers, with an expectation that the back-book quickly starts to fund this. R1 kills this strategy. The AEMC's recommendation would likely force smaller retailers to price accurately to their costs (including the need to offer a return to their capital providers – aka a profit).

As a result, some common measures of competition are likely to deteriorate – including churn rates, the number of retailers active in the various markets, and the concentration of the retail energy market.

We may see an apparent shrinkage of the industry down to a smaller number of retailers from the current 56, with each serving (on average) a larger customer base. Depending on the extent of this effect, that may reduce competitive pressure on larger retailers.

Therefore we think it is reasonable to suspect the third-order impact of R1 could be – in a more pessimistic case:

- Less dispersion in customer prices, but similar overall customer revenues
- Higher overall retailer profitability via structurally lower competitive costs AND structurally lower competition to place pressure on margins.

There is a more optimistic view, which becomes related to R2. Competition 'post-R1' could prove to be equally (or hopefully, even more) effective than it was before.

This relies on a view that in fact, the simplistic measures of competition are not really relevant, especially if a cohort of small, inefficient 'Tier 3' retailers tend to set the marginal price at a level that is related to their higher cost base, not that of the larger, more efficient retailers.

On this view, the loss of some small, inefficient retailers who were overly reliant on the pre-R1 loyalty tax strategy is no concern for consumers.

Competition would be no less effective, and lower industry costs resulting from R1 would be passed through.

Fourth order: The replacement of competition… maybe?

What next for retailers and retail competition, after the old loyalty tax playbook is lost?

Retailers will still have the urge to gain customers – might this lead to better competition on other dimensions (as the AEMC clearly hopes)? We can dream up many possibilities – competition driven by:

- Service quality
- Product / tariff design
- Better customer segmentation (as AEMC notes, 'family plan', 'retiree plan', …)
- Co-benefits & perks
- Loyalty schemes

Many things are possible, but it might also be worth considering how much there really is to play for here, before placing too much credit on this potential outcome. Sceptics might ask themselves:

- What are the real gaps and opportunities for customers to be 'delighted' by a relationship with an energy retailer to ensure the light comes on when the switch is flicked?

[5] We analyse and discuss this, and its implications for retail competition, at length in the reference in footnote 1.

- What are the mythical new and better product designs that have eluded the market to date only because retailers have instead been focussed on price?
- Are these really likely to drive the necessary levels of customer engagement and thus maintain adequate competitive pressure on retailers?
- Would this just reintroduce new competitive costs to be recovered from customers, negating any benefit from structurally lowering industry costs?

Another potential outcome is just a quieter, more boring landscape of retail energy offers, with less consumer engagement and less of the traditional version of competition (for better or for worse).

R2 – auction off disengaged customer cohorts

We understand the premise here is that customers who have – via disengagement or other misfortunes – ended up on a Standing Offer tariff ('SO') would gain from being competitively auctioned off, to receive a price level below status-quo SO prices.

And again, the starting-point should be that:

- whatever the 'loser' retailers give up in higher-margin SO customers (a part of the back-book being attacked in R1) they will seek to make up via their pricing to other customers; and
- whatever the 'winner' retailers bid to take on the OS cohort, it will be accommodated within overall pricing and profitability for that retailer's total customer base.

As a result, many first-order impacts are the same: less price dispersion, arguably greater equity, customer trust and satisfaction. But also, less reward for those customers who do or have engaged.

As we did for R1, we have to then ask: Is that it, or are there other benefits or disadvantages?

Interesting opportunity for a growing retailer to get scale

There is a large cohort of SO customers – roughly 9% of all residential customers, or about 920,000 accounts, based on figures from the most recent DMO and VDO processes.[6] They are almost twice as prevalent in Victoria compared with other competitive NEM regions.

We assume (as this is a level of detail not yet revealed by the AEMC) that:

1. Auctions would be held for cohorts of customers at either regional or DNSP level, in which case the biddable item would be a customer base of tens or hundreds of thousands.
2. Auctions would not be a one-and-done event, but repeated (annually?) as new customers fall into this unfortunate situation.

If so, **this process could be very pro-competitive** in our view.

The cohorts would represent a material customer acquisition opportunity that could help a smaller or mid-sized retailer gain material scale and reduce their unit costs, making them a more effective competitor with the 'Big 3', who each have several million customer accounts. This could include encouraging new-entrant competition into some areas of the NEM where competition is severely lacking, including Tasmania, the ACT and north Queensland.

The cost to acquire (via participating in the auction process) would likely be a lot less than the traditional grind of acquiring one-by-one via advertising costs and direct marketing engagement. For example, if an organic acquisition cost is in the order of $200, then it seems clear the administrative cost to participate and acquire 100,000 customers under such an auction would be orders of magnitude less than $20m.

[6] ECA notes there are 475,727 (8.2%) residential and 91,060 (17.6%) small business in DMO regions: Default market offer prices 2025–26: Final determination p 15, and 445,000 households (15 per cent) and 54,000 small businesses (19 per cent) for the VDO: PPR - Request for Comment Paper - 2026-27 Victorian Default Offer - 20251114_0.pdf p 4

Standing Offer customers are relatively docile by definition…

The SO cohort have demonstrated their disengagement with the competitive market already, making them a relatively attractive cohort to acquire – because they are unlikely to churn away of their own volition.

All else equal, this makes them a more valuable customer to acquire.

… but that becomes a two-edged sword!

Unfortunately, the risk is that what is won can be lost, if the customers fall onto another disengaged plan and are simply re-auctioned. This has a couple of implications:

1. If the 'customer life' might be as little as one year, a winning retailer might need to price in cost-recovery for the auction process over a short period, perhaps increasing the tariff level they are prepared to offer.
2. If winning the cohort offers scale and reduces fixed costs per customer, the reverse is also true: losing them a year later could initiate a further loss of competitiveness. This would be particularly acute in cases where the acquiring retailer's customer base is relatively modest compared with the size of the acquired cohort.

Perhaps this suggests both retailers and the AEMC / AER (in designing the process) should be open to a longer life for acquired SO customers with their new retailer, even if they insist on remaining disengaged.

It might also give reason to consider whether the long tail of very small retailers, most susceptible to the second effect above, are likely to take on the risk of sudden but potentially short-lived growth. As we note below, pre-qualification of retailers deemed to have the necessary capacity may be warranted.

What are the risks to a pro-competitive outcome – and how to mitigate?

Our thesis is that the larger retailers have advantages in their cost to serve – and if that is the case, might the result be the Big 3 gentailers simply outbid Tier 2 / Tier 3, further advantaging themselves at the expense of effective competition?

In short: yes, this is a clear risk. Is this actually a bad thing for consumers overall? That is a bit more subtle.

It would be bad if:

(a) competition among the Big 3 was not adequate to reveal the most efficient cost in bidding; and
(b) the effect meaningfully impeded competition outside the Big 3.

It might not be so bad if (a) was false, even if (b) was true. In that event, SO customers would receive the best price available.

This risk could be mitigated via auction design – for example, conditions of an auction might include:

- **Exclusion of dominant bidders** – perhaps the top [2] retailers by market share, or any retailer with a market share already exceeding [20%] in the relevant region or DNSP area.
- **Pre-qualification based on retailer's capacity** to integrate and serve a large cohort (to eliminate the least-capable bidders, including very small / inexperienced retailers).
- **Pre-arrangement of a hedge position**, to be novated across to the winner.
- **Splitting the cohorts** – with a guarantee of more than one winner per auction.
- **No auction without [4] prequalified bidders**.

There are numerous pros and cons that would need to be weighed up, which in many cases would be balancing overtly pro-competitive market design (to encourage healthy long-term competition) at the expense of the cheapest possible price on the day for the SO customer (the short-term competitive outcome).

Stalking horse to kill off the DMO / VDO

While the discussion above should make clear it is far from guaranteed, we do think there is a world where SO auctions might reliably and regularly reveal the efficient cost to serve a 'basic' retail electricity customer.

This seems to us to be the real objective of the DMO / VDO. If that is the case, we think it is very reasonable of the AEMC to wonder whether both are needed.

There are many challenges with the DMO / VDO, especially the process of setting it annually based on assumptions about costs and the future:

- Should it allow for competitive costs, or not – in other words, should it encourage competition, or not?
- Should it be based on the lowest cost to serve, or the median, or a high-cost new-entrant, or…?
- Exactly how wrong will its assumptions on the future wholesale / hedging costs be, and how much damage will that entail for retailers or consumers versus a competitive market outcome?

In fact, perhaps the best way to assess R2 is as:

1. a planned replacement of the DMO / VDO with a competitively-determined alternative – an idea which appears to have a lot of merit to us; AND
2. an offset to some of the damaging impacts R1 is likely to have on retail competition, at least as we know it today.

Customers (and retailers) would have a number of concerns

From a customer perspective there are clearly some concerns to be thought through.

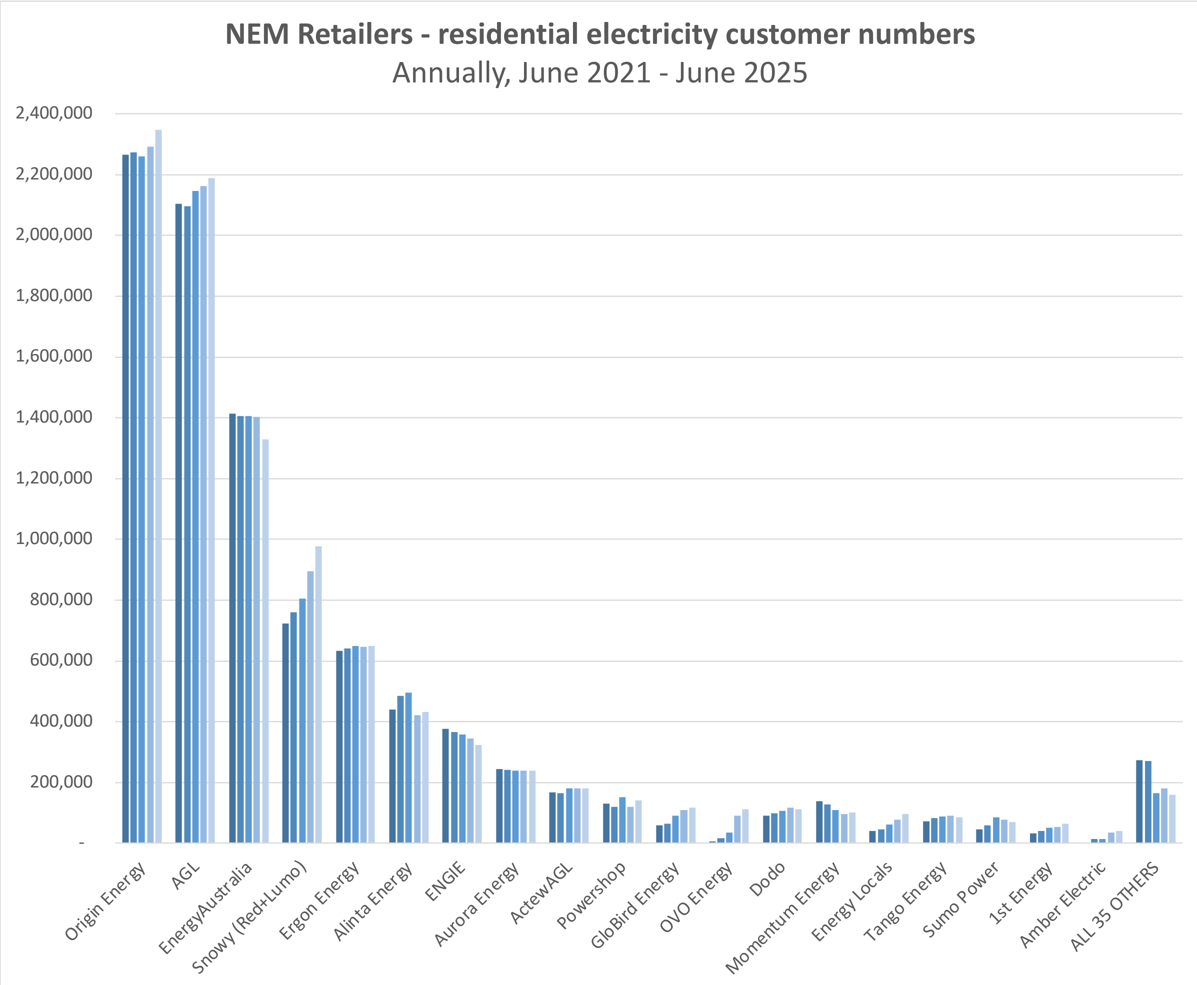
- Is it really OK to change a customer's retailer out from under them?
- What if some customers consciously remain on a retailer's SO for other reasons – not price-sensitive, but valuing other things (brand, carbon intensity of supply, …?)
- Should customers have to opt-in to be auctioned?
- Or if not, can they opt-out?
- What if they are dual fuel or NBN customers of the retailer in question?
- What happens to those customer's debts to their current retailer – do they transfer too? Or does the outgoing retailer send in the debt collector?

There are a lot of trade-offs here for consumer stakeholders to consider. Some could be designed around to become acceptable, but others are pretty fundamental: including a premise that someone else knows what is best for these consumers, and feels strongly enough about it that they are prepared to change their commercial arrangements on their behalf.

Appendix - Retailing structure in the NEM

There are currently 55 retailers serving 9.8m residential customers in the NEM.

- The **three Tier 1 gentailers** – AGL, Origin and EnergyAustralia – account for 60% of the customers, with an average of 1.95m customers each (in fact, EA is substantially smaller at 1.33m)
- There are **eight Tier 2 NEM retailers** if the cutoff is > 100,000 accounts, or about 1% market share. Collectively these hold 24% of the market at an average of 295,000 customers.
  - The largest of these, the Snowy retailers (RED + Lumo) have just over one million accounts and have been growing rapidly towards joining Tier 1.
- There are **three regional specialists** – Aurora in TAS (92% share), Ergon in QLD (29% share overall, dominant outside SE Qld) and ActewAGL in the ACT (72% share). They have between 180,000 and 650,000 accounts so are 'Tier 2' in size.
- The remaining **41 Tier 3 retailers** collectively hold only 538,000 accounts, or 5.5% market share – an average of only 13,000 customers each.



Source: AER and Victorian ESC data, Finncorn analysis. Red and Lumo combined, Ampol Energy to AGL

In this context, the ~920,000 SO customers are a large cohort, much larger than the customer base of most retailers. If (for example) auction processes split these into (perhaps DNSP-defined?) chunks of ~70,000 customers, then there are only 16 retailers NEM-wide for whom that would be less than a doubling in size. If (for competitive reasons) the Tier 1 retailers and regionally-dominant retailers were excluded, this number would fall further.

However, we think this data shows there is still a reasonable cohort of Tier 2 retailers who may offer effective competition while having the capacity to absorb customer portfolios of this size.

Level 41, Suite 2
55 Collins St
Melbourne VIC 3000
Australia

Phone: +61 3 8678 2888
Email: admin@dragomanglobal.com
www.dragomanglobal.com

Dragoman

10 July 2025

Australian Energy Market Commission – via www.aemc.gov.au

Response to AEMC Pricing Review Discussion Paper

Dragoman is an Ottoman word meaning guide or interpreter. We are a boutique advisor in political risk and strategic matters. A key focus area of our work is the public policy and regulatory aspects of the energy and climate transition.

Please find accompanying this letter a public submission for the consideration of the AEMC.

Dragoman was engaged by Energy Consumers Australia to develop this work. We understand that it may be cited or incorporated as supporting material for ECA's submission.

We have been tasked with providing analysis and advice in relation to ECA's objective of improving the equity and fairness of the energy transition for small consumers.

For the purposes of the AEMC Pricing Review, we have focussed on equity and fairness in relation to network costs, and cost recovery processes including (but not limited to) the appropriate design of network tariffs.

We find a variety of areas where there are concerns in this regard, both under the status quo and anticipated as the energy transition progresses.

Of these, perhaps the most material and tractable is the issue between solar PV and battery "haves" versus "have-nots" – and so we examine it carefully and develop some specific recommendations. CER adoption by consumers raises some complex questions about equity and fairness:

- Should the CER "haves" pay more for the network because of the additional benefits they receive from it, rather than less?
- Does CER adoption by some consumers simply lead to material network cost transfers to those without CER (the *prima facie* situation, as we demonstrate)? Or do the system benefits partly or wholly offset this, by providing lower costs to the "have nots"?[1]
- What is the implication for fairness if government-subsided CER investments by the "haves" result in higher comparative network costs for the "have-nots"?

We suggest the AEMC explore these questions as part of further rounds of consultation as the pricing review evolves.

We find many areas of commonality with the AEMC's analysis in the June 2025 Discussion Paper, especially:

1. **Broad network price signals** (e.g. demand charges under postage-stamp tariffs) **are problematic** in regard to whether they are really cost-reflective for the majority of consumers. If not, they are creating deadweight losses.
2. In reality, **most network costs are effectively fixed in the short and long run**, from the perspective of a small electricity consumer and their opportunity to change behaviour in response to price signals.

[1] Well-addressed here: https://www.researchgate.net/publication/299400314_A_Design_Approach_to_Innovation_in_the_Australian_Energy_Industry

3. Complex network tariff design can **impede the development of a broad range of retail tariffs** that may better suit a range of consumers' needs.
4. Given findings that the large majority of system benefits from rooftop PV and batteries accrue in the reduction of wholesale prices, **network pricing should not run counter to wholesale prices signals managed by retailer (or consumers)**.

As a result, we think the AEMC's Pricing Review is an opportunity to rethink network pricing for the evolving grid, and the long-term interests of consumers – whether or not they are willing and able to participate as CER-enabled 'prosumers'.

Our key recommendations are:

- **Basic Access Charge (BAC).** Recover the bulk of network costs via a fixed annual charge per connected household, which maintains the access to import of electricity, but does not include any electricity consumption. This recognises that network access is a basic essential service.
- **Consider alternative channels for recovering the BAC.** Including via councils rather than retailers. This could create a preferential obligation on property owners, rather than electricity consumers, to pay for these costs.
- **Focus concessions on the BAC.** Government has an existing role in ensuring fairness of the energy system for households, including distributionally via means-tested tax and social welfare. The BAC is a simple way to target concessions, ensuring access to electricity is not out of reach.
- **CER tariffs for CER households.** In addition to the BAC, households with rooftop PV, batteries, EV charging or other flexible loads enjoy a greater range of services from their network connection. Secondary CER tariffs should ensure these consumers equitably contribute to network costs, in a way that supports lower overall system costs – via charges and credits similar to emerging two-way tariff structures.
- **Retailer-led tariff design**. When designing CER network tariffs, a primary objective should be alignment of price signals with wholesale. This may mean imperfect network price signals, but better overall price signals for system costs and therefore lower system costs for all consumers.

The BAC+CER Tariffs model we propose has been designed to address the most pressing inequity concern, now and especially in future as CER deployment continues (but not ubiquitously).

It may, if carefully designed and implemented, do little harm in other areas of inequity, and in several cases seems likely improve the situation.

There are various means by which concerns about fairness – such as the impact on smaller or low-consumption households – can be mitigated. Equally, there are other, more equitable levers available to ensure levels of CER adoption meet jurisdictional ambitions, if those exceed what might occur from proper in-market price signals.

Implementation might benefit if the collection of a BAC from was devolved to councils, on a basis similar to council rates, where the onus is on property owners to maintain compliance with the supply of certain essential services – this has several apparent attractions.

Kind regards,

David Heard
Executive Counsellor, Energy

Equity and Fairness in Network Pricing

Dragoman's response to the AEMC's Discussion Paper

Released as a public submission

10 July 2025

Contents

Key Messages and Recommendations

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Energy Consumers Australia's (ECA) Objectives

In undertaking this research and analysis, Dragoman has worked closely with ECA to understand their objectives in contributing to the AEMC Pricing Review.

ECA is seeking to understand **how to recover network costs equitably and fairly in the energy system of the future**.

This work intends to outline what we know about the current state and direction of the system, its costs and the way consumers use it.

Considering this future, it is important to understand what this may mean for the materiality of inequity or unfairness under current approaches – including the risks of new but foreseeable problems emerging.

ECA has tasked us with considering potential solutions that can anticipate and address future harms from inequity or unfairness now, rather than attempting to redress them in the future.

Defining equity and fairness in network cost recovery

This work has required us to carefully consider some definitions.

In the AEMC's work, reference is made to the National Energy Equity Framework.[2] This suggests *"Energy equity exists where all consumers can fairly benefit from the energy system and access and use energy services to live a comfortable, dignified and healthy life."*

For our purposes, we need to go a little deeper – noting that we are talking narrowly about the allocation of network costs, and so our concern needs to be more specifically about whether **network costs and benefits are equitably and fairly shared among small energy consumers**.

We deliberately use two terms - fairness and equity – which can be subtle to define and may contradict each other in some cases. They may also need to be traded off against other objectives, such as complexity for consumers, efficiency of cost recovery, or minimisation of deadweight costs.

However, it is important that fairness and equity remain a primary focus in designing electricity network pricing and network cost recovery arrangements, and the broader social welfare system. This recognises the fact that <u>access to electricity is an essential service for all households</u>. In this paper, we define each term as follows:

Equity

Costs and benefits are allocated appropriately among consumers connected to the network, based on their behaviour and how they interact with the network.

Fairness

Network pricing structures and levels do not (a) unduly add to social and economic inequalities or (b) prevent households accessing basic energy services.

In practice, this means we assess **equity** without regard for a consumer's financial circumstances (e.g. their capacity to pay). Rather, we assess the generic benefits enjoyed from the network, and the costs contributed. We consider **equity** to be a valid objective of the design of pricing network services to consumers.

As a result, we consider **fairness** to be a question of evening the scales among citizens with differing financial resources, which is generally understood to be a role for government via the tax and social welfare system.

[2] See: https://www.energy.gov.au/sites/default/files/2025-06/national-energy-equity-framework.pdf

Defining Consumer Energy Resources and their roles

In this paper we use Consumer Energy Resources (CER) as a generic term to represent assets within a small consumer's household which interact with the network in a manner beyond a passive load.

This effectively means rooftop PV generation, and household Battery Energy Storage Systems (BESS), as well as Electric Vehicles (EV) assets that may charge in response to price signals, or mimic a BESS and discharge to meet household self-consumption. It may also represent large flexible loads (pool pumps, air-conditioning) that some highly-engaged consumers (or their agents) may operate flexibly in response to price signals.

In our view, all CER assets represent consumers investing their time and/or money, to then enjoy additional benefits from their access to the network, over and above the basic service of access to electricity imports. These are often economic, but may also be other benefits such as enhanced reliability under network outages, or the satisfaction of replacing higher-carbon electrons from large-scale thermal capacity.

CER challenges to address

While these CER-enabled consumers have made investments and expect to enjoy benefits as a result, it is also important to note:

- Many CER asset investments by consumers have enjoyed explicit policy support from state and federal jurisdictions.
- The benefits of CER can extend beyond their owners to lower overall system costs – IF operated in alignment with appropriate price signals.[3]

CER investment by consumers is not a straightforward choice. There are substantial barriers faced by many consumers, including the necessary financial resources to invest – to some extent, partial government support for CER deployment is regressive.

Even those with the capacity to invest may face other barriers, especially the ability to install CER if renting, or the impracticality if living in apartment-style housing without a suitable rooftop, and/or with administrative barriers via strata arrangements.

Because of these considerations, CER deployment by some household consumers raises complex questions about equity and fairness which we deal with in some detail in this report

[3] According to Energeia's work for the AEMC, 88% of these system benefits are related to wholesale electricity costs, with network costs a substantial minority at 11%. See: https://www.aemc.gov.au/energeia-finds-cer-flexibility-could-deliver-45b-benefits-2050

Executive Summary

We find a variety of areas where there are concerns about equity and fairness in network cost recovery from residential consumers, both under the status quo and anticipated as the energy transition progresses.

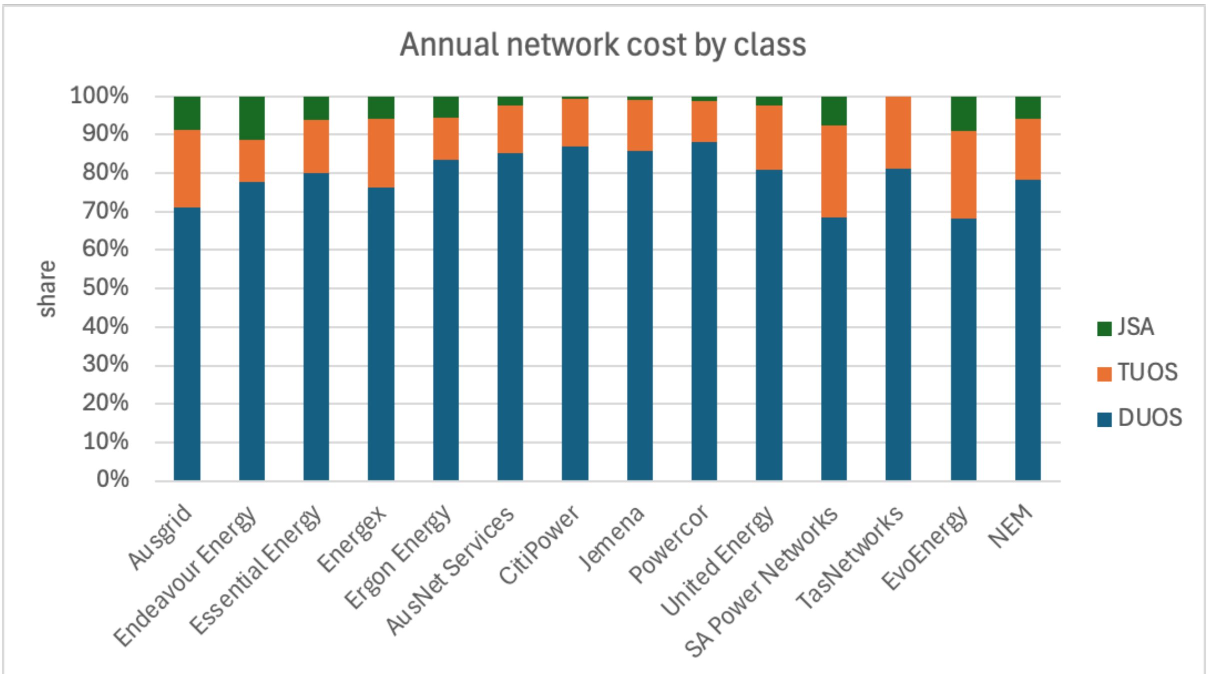
This leads us to our key recommendations.

Network costs are material and forecast to grow

Network charges are substantial contributors to consumer electricity costs – AEMC's Discussion Paper notes they account for roughly 40% of a residential consumer's bill, and AEMC Residential Electricity Price Trends Report indicates these are forecast to grow based on investment required under the energy transition and demand growth.

There are three main components of these costs:

1. **Transmission** networks (aka TUOS)
2. **Distribution** networks (aka DUOS)
3. A variety of **Jurisdictional Scheme Amounts** (JSA) – which are costs related to energy and environmental policies at State or Territory level, such as the ACT's renewable energy offtake costs, and NSW's Electricity Infrastructure Roadmap.



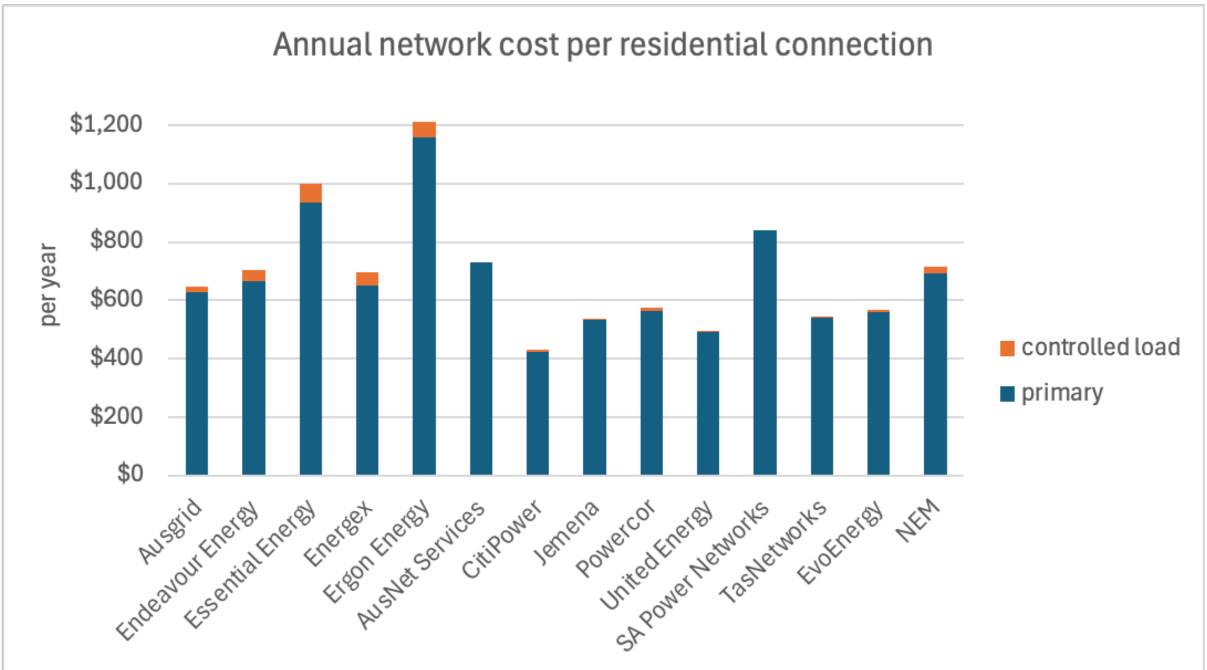
Source: Dragoman analysis of 13 DNSPs SCS pricing models for FY24

While the bulk of current network costs are from the distribution network element, **transmission costs are material** (around 16% on average in the NEM) and **could rise strongly** under the transition of the system envisioned by the Integrated System Plan (ISP).

Certain JSA amounts may also prove to be much more material in the future, as recent schemes mature. As such, we note that a forward-looking pricing review should not ignore how TUOS and JSA amounts are passed through to consumers, merely because they are currently the minority of network costs.

Across the NEM, on average a residential consumer contributes a little over $700 per annum to network cost recovery. This varies widely between the DNSPs (as shown below) which we believe is partially or mainly explained by differences in network geography: Ergon, Essential and SAPN cover very large network areas, with greater physical network assets required as a result, while CitiPower is a compact network in urban Melbourne.

However, within a network area, on average, we find that the cost-recovery per customer is fairly consistent regardless of the type of network tariff applied – flat, or a variety of cost-reflective structures based on time of use and in some cases, peak demand.



Source: Dragoman analysis of 13 DNSPs SCS pricing models for FY24

Network costs are largely fixed, as far as consumers can realistically influence them

We have analysed the disclosures from the 13 DNSPs in the NEM, and we find that whether we examine annual operating expenditures (today's costs), or the nature of capital expenditures (tomorrow's costs), most of the drivers of network expenditure bear little if any relation to consumer behaviour in the short or long run.

Most costs are either based on historical investments made, overheads that consumers cannot impact, growth in network extent that is irrelevant to a consumer once connected, or other drivers such as financing costs.

There is certainly a consumer-influenced element of network costs, related to:

1. The anticipated cost of augmentation if consumers raise the peak demand beyond the current capacity of the network – especially locally.
2. Disturbances to the network that consumers might cause (e.g. via large PV exports), that demand investment to rectify. DNSPs estimate this as part of their tariff-setting processes, and it is clear they are a small minority of overall costs to be recovered.

The balance is so-called 'residual costs' – which are not related in any way to current or future consumer behaviour but nevertheless must be recovered.

Even where forward costs are related to consumer behaviour (such as peak demand requiring augmentation expenditure) the actual impacts are both highly localised (unsuited to price signals delivered very broadly via postage-stamp tariffs), and/or highly uncertain (one major unexpected addition or loss of a load from an area might change the situation, independent of consumers' responses to price signals previously).

The problem with postage-stamp tariffs for distribution network costs

It seems to us there is no point developing and deploying intricate cost-reflective network price signals if in reality, the channel to deliver the price signal to consumers – postage-stamp tariffs – is too broad to be effective.

Looming congestion in a substation in Mount Gambier is not going to be effectively addressed by a peak demand or ToU consumption charge in the SAPN network, that will also be experienced by a consumer in Port Pirie where (we imagine for the sake of the argument) the distribution network is unconstrained for the foreseeable future.

- If the price signal is strong enough for the Mount Gambier consumer to shift their consumption away from the peak, it implies deadweight losses for the consumer in Port Pirie who does the same, curtailing consumption they value (e.g. air-conditioning on a hot afternoon) for no network cost or benefit.
- If the price signal is weakened to preserve the Port Pirie consumer's utility, it will not be strong enough to drive change by the Mount Gambier consumer – and now the deadweight loss is in the additional network costs to relieve that congestion that could (potentially) have been deferred or avoided.

One possible answer to this dilemma – significantly more localised tariffs – may be worth considering in some circumstances, especially if they are incentive-based and opt-in. We have a partial analogy emerging in the community battery space, where investment in a community battery to relieve congestion and/or increase PV hosting capacity (and the interface with local consumers to share costs and benefits) can be very targeted.

However, in general we conclude the answer to this dilemma is greater simplicity (in the form of generally higher fixed charges), rather than further complexity of generally applicable network tariff structures.

Even the National Electricity Rules seem confused on this issue of postage-stamp prices for residential customers:

Rule 6.18.5(f)): *"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 with the method of calculating such cost and the manner in which that method is applied to be determined having regard to: 1. …; 2. …; and 3.* ***the location of retail customers that are assigned to that tariff and the extent to which costs vary between different locations in the distribution network****.*

Rule 6.18.4(a)(2): *"retail customers with a similar connection and usage profile should be treated on an equal basis"*

Rule 6.18.3(d): *"A tariff class must be constituted with regard to: (1) the need to group retail customers together on an economically efficient basis; and (2) the need to avoid unnecessary transaction costs."*

The last of these clearly makes good sense… but the first two appear to be at cross-purposes.

We do not think this is a controversial finding at all – reading DNSPs Tarriff Structure Statements, this point is often emphasised by the networks themselves. So too the AEMC's Discussion Paper calls out the issue clearly.

For example, from Endeavour's TSS Explanatory Statement, p65:

> *"Ideally, the basic export level would vary with respect to:*
>
> - *the geographic area of network in which the connection occurs, i.e., a location specific basic export level; And*
> - *changes over time in the size and number of embedded generators and storage units installed in the area of the network in which the connection occurs.*
>
> *In practice, the application of postage stamp pricing for our two-way tariffs lends itself to uniform basic export level across the network, rather than a location specific basic export level. In addition, we wish to provide our export customers with certainty regarding the costs of installing solar PV assets over the 10-year tariff transition period."*

And p91

> *"Theoretically, it is most efficient for us to recover from our customers the residual costs we incur exclusively from the fixed charge tariff component because these charges are independent of a customer's usage decisions and therefore minimise the distortion to the LRMC-based price signals that promote efficient usage of our network service."*

From Essential's TSS, p12:

> *"Essential Energy calculates LRMC at a voltage level for all customers, with an LRMC estimate for low-voltage, high-voltage, and sub-transmission customers. The LRMC estimate is not specific to location or feeder, but an average for all customers connected at the same voltage level within the same customer class using an AIC approach.*
>
> *Because these costs are all variable over time, the variable components of our distribution network charges are set to at least reflect our LRMC estimates. This is consistent with our tariff classes having tariffs that are averaged across those classes and with our customers' strong preference for postage stamp pricing."*

From Essential's TSS Explanatory Statement, p13

> ***"Issue:*** *postage stamp pricing means there is cross-subsidisation between high and low cost-to-serve customers.*
>
> ***Potential tariff solution:*** *locational tariffs - recognising that our stakeholders are against this proposal consider semi-locational like urban/rural, climatic zones or nodal pricing."*

Current recovery of network costs relies heavily on consumption-based charges

We find that in aggregate over the NEM, most network costs (59%) are currently recovered from residential energy consumers based only on the quantity of electricity imported – either under older-style "anytime" tariffs, or Time of Use (ToU) enabled by modern metering. 29% is recovered from fixed charges, and 12% from hybrid tariff elements that include both demand charge and consumption components.

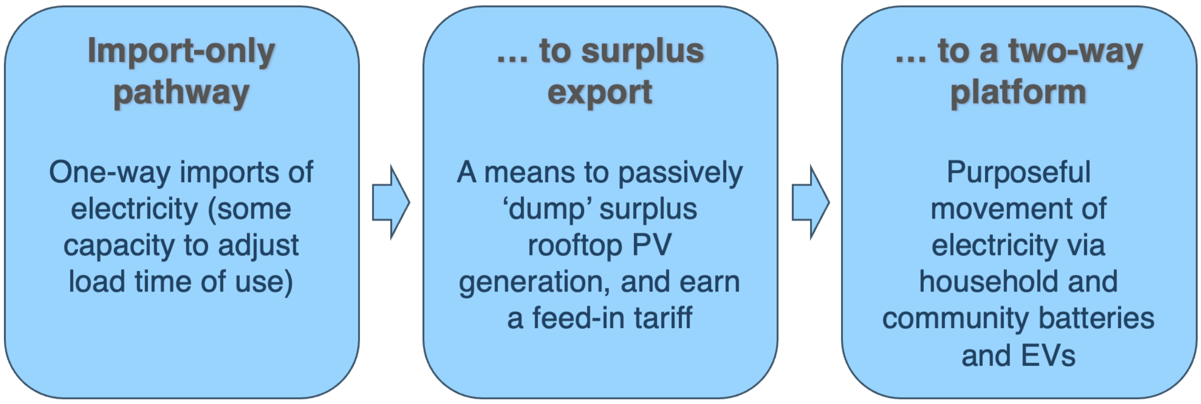
A great deal of work has been undertaken by stakeholders in designing and deploying cost-reflective network tariffs, and the results include both ToU and demand-style pricing. However, the effectiveness of a mandatory transition to these is open to debate – including what a cost-reflective network tariff would really look like given the nature of the costs networks are recovering.

The AEMC's Discussion Paper is notable in how it has clearly challenged the conventional wisdom here (p73):

> *"The current approach to designing network tariffs may have long-run benefits, but at a cost to consumers. Broadcasting long-run cost signals through network tariffs was a sensible decision when made in 2014, anchored as it was within the technological landscape at the time. But the sector, and its technology, have developed since then. The current network tariff framework may therefore not be optimally positioned for the future, as consumers continue to adopt new technologies that enhance opportunities to reduce network costs."*

CER uptake is increasing, and changing the role of the network

The rise of CER – most obviously rooftop PV and batteries today - means consumers' use of networks is evolving towards something much more sophisticated:



About 24% of residential connections are estimated to have rooftop PV today, up from 18% only 5 years ago[4]. For batteries, the figures are around 1.1% now, from 0.3% 5 years ago.

Already in 2023-24, residential rooftop PV supplied 19TWh of electricity, equivalent to 33% of residential underlying demand. The chart overleaf shows the 2024 ISP forecasting this to rise to 31TWh or 46% by 2030, 52% by 2040 and 55% by 2050.

Battery storage is expected to grow tenfold from 2024 to over 6GWh in 2030 – sufficient to store about 1/5th of rooftop PV production by then, 55% by 2040 and 82% by 2050.

Rapid growth in residential storage is now underpinned by the Commonwealth's $2.3bn battery subsidy scheme – which follows from the strong incentives for small-scale PV provided by the Small-scale Renewable Energy Scheme (SRES). The government appears to be pushing on an open door here: when ECA surveyed small consumers in April 2025 (before the announcement of the policy), they found 15% of households with solar PV are currently researching options to add a Battery Energy Storage System (BESS).[5]

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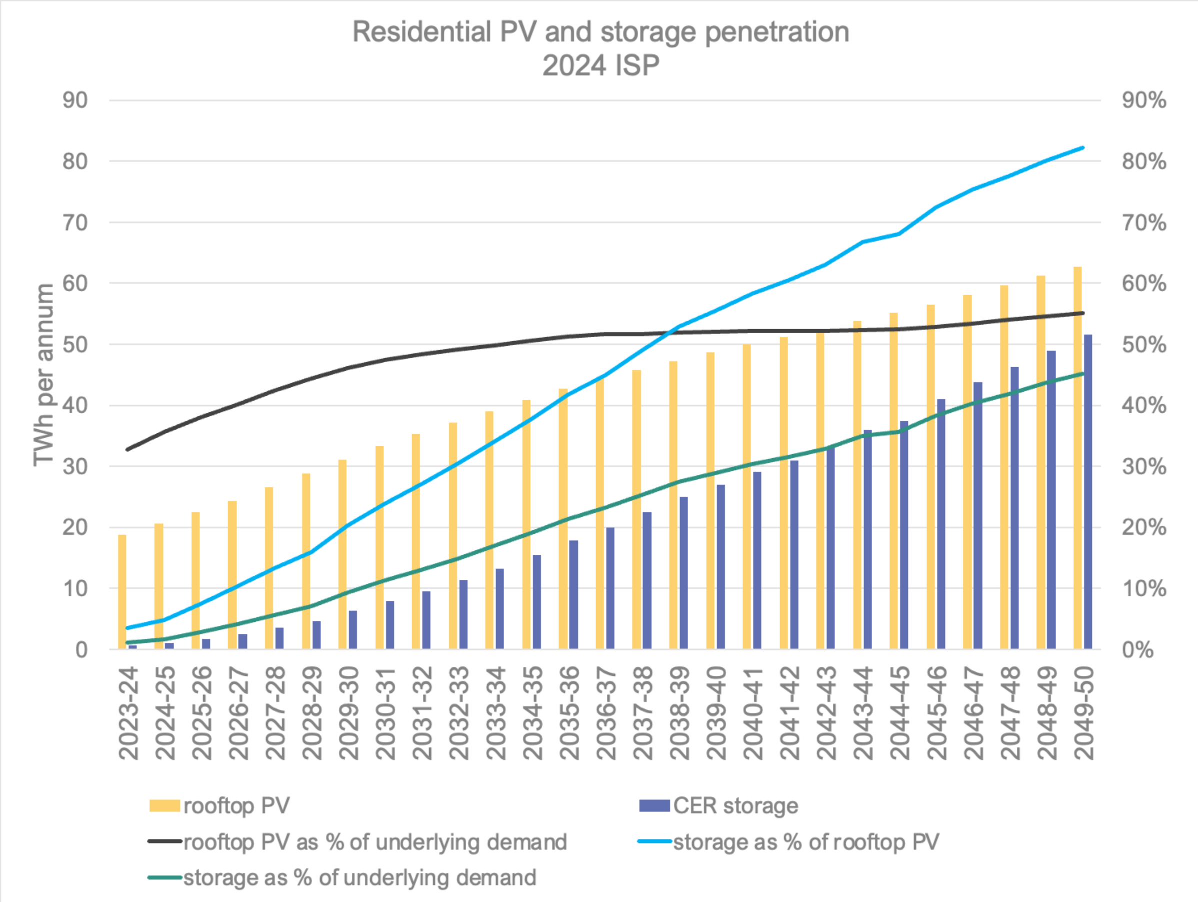
[4] See: https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/metering-data/nem-der-and-interval-metering-dashboard

[5] Source: July 2025 Energy Consumers Australia - Consumer Energy Report Card



Source: Dragoman analysis of 2024 ISP central scenario forecast

With this in mind, the ISP's forecasts of CER penetration should be taken seriously when assessing equity and fairness in network pricing.

When we assess the equity impact of CER "haves" versus "have-nots" we find serious concerns today, which will be greatly exacerbated under these forecasts if clear steps are not taken to reconsider how network costs are recovered – especially given the very significant avoidance of network costs we observe today for battery-enabled households.

Historic network cost recovery models were once somewhat defensible

Before the rise of solar and batteries, it was reasonable to argue that consumption-based pricing was a sensible, fair and reasonably simple way to recover network costs: "use more power, pay more for access to power" would have likely passed the 'pub test'.

On one view this could be progressive – those who use more electricity may have greater capacity for consumption, via larger households and more appliances, an indication of wealth. However, there were always problematic elements to this assumption. Lower-quality housing may be less energy-efficient (and occupants, especially if renters, may have less capacity to improve that situation). If so, consumption-based charging for networks would be regressive.

Either way, this approach evidently overrode consideration about whether consumption was in fact a good proxy for network cost drivers (and as we have noted, most agree it is not).

A reluctance to follow through on this conclusion, as least until now, needs to be examined. We think it is likely because if networks costs were recognised as largely fixed and priced accordingly, then fixed-cost pricing per household might be considered more unfair (i.e. more regressive) than the alternative.

This remains a challenge today. Given we advocate in this paper for exactly this approach, it must be addressed – albeit in doing so, we note our definitional choice which distinguishes between equity (achieved via pricing models) and fairness (ensured via a social welfare overlay and specifically in this case, the appropriate targeting of energy concessions funded by government / taxpayers).

In any event, if the largely consumption-based pricing model was ever fit for purpose in the pre-CER past based on arguments of fairness, it no longer is today (or in future).

The network is an access-based service, not a consumption-based good

With the rise of rooftop solar PV, CER-enabled customers draw less energy from the grid and so contribute less to residual cost recovery based on consumption. As batteries are increasingly added, even ToU or demand-based alternative cost-recovery approaches in network tariffs can be effectively avoided as well.

Regardless of lower import usage, there is no evident reduction in networks' cost to serve these CER-enabled consumers – who, like all consumers, need to maintain their basic access to the network.

In fact, from a narrow perspective of the network, they may be creating as many or more costs than they are offsetting if we consider the system security and power quality challenges networks are facing in the integration of PV exports into the distribution network.

Even as imports by CER-enabled consumers are lower, the grid provides these consumers (and their CER investments) not just with power when they do not have solar or battery energy, but also with important and valuable additional services including financial opportunities that are not available to those without CER:

- to benefit from feed-in tariffs for excess PV generation
- to profit from wholesale price arbitrage using a BESS
- to gain from participation in a Virtual Power Plant (VPP).

In addition to these opportunities, CER-enabled consumers benefit from frequency and voltage regulation, and the 'silent co-ordination' that allows then to rely on their CER thanks to its connection to the broader grid.

As a result, it seems plausible there is a major *prima facie* issue of inequity between CER "haves" and "have-nots" in relation to the recovery of network costs – especially if we maintain the use of consumption pricing to recover most network charges.

The "haves" receive greater utility from a network connection (via a broader range of services it enables them to access), yet under current network pricing mechanisms we show they pay much less.

We have examined several areas of inequity – but we think this issue is both the most material, and the most easily addressed – so we devote significant attention to it in this paper.

Left unmanaged, inequity will increase

Looking forward, as CER penetration rises, this inequity seems likely to increase.

We assume network costs – whatever they may be – continue to be recoverable from small consumers as a whole, given their regulated nature.

With more consumers under-contributing to residual network cost recovery, consumption-based pricing will increasingly place the burden on the CER "have-nots".

This is a self-reinforcing impact, as it increases the incentive to install CER and avoid consumption-based costs – further increasing the necessary consumption charges on the lower levels of grid imports. This is the "death spiral" made famous (for energy policy nerds) in 2012 by AGL's economists Paul Simshauser and Tim Nelson.[6]

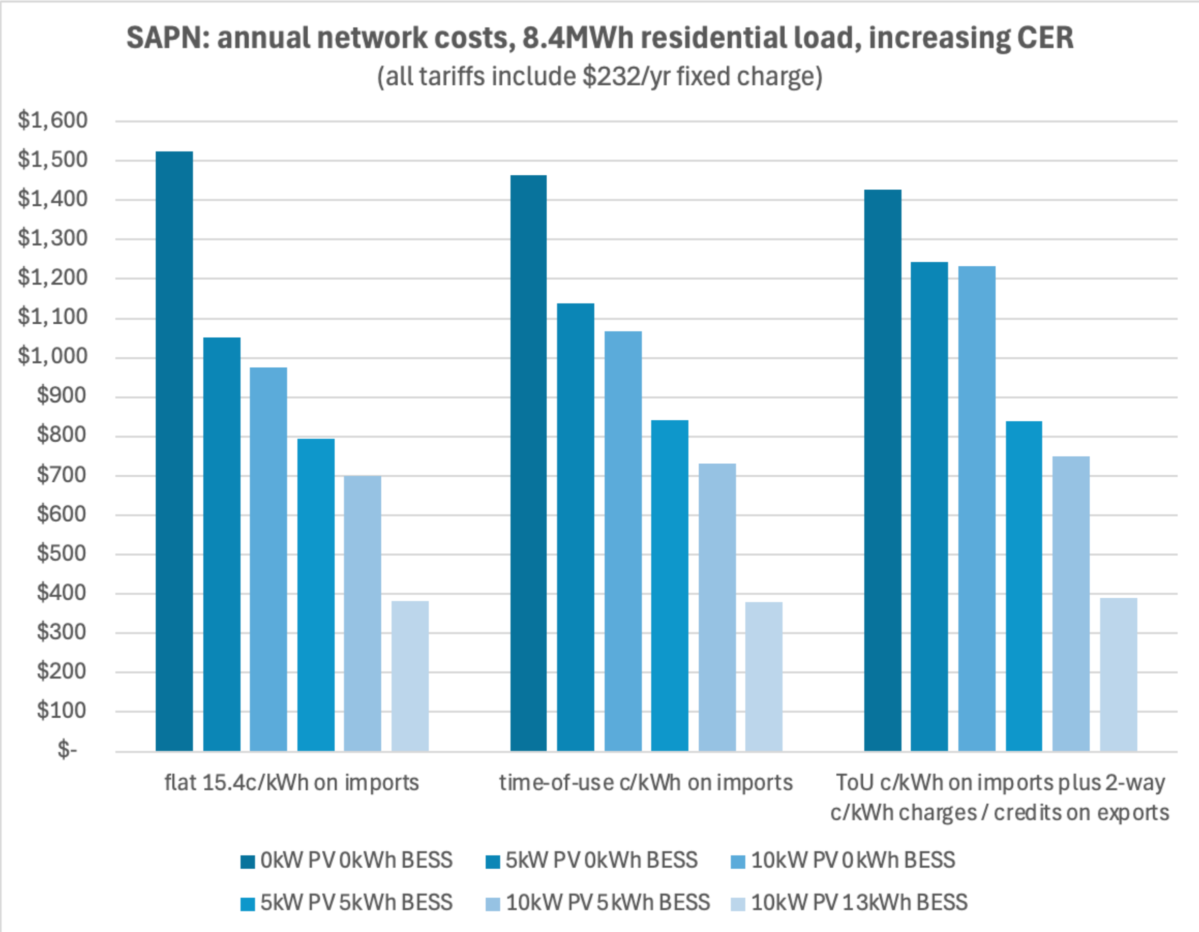
It is important to note we are only considering network tariffs and cost recovery here, prior to any actual imports, exports or consumption occurring.

On top of this all consumers pay for their actual consumption of electricity, via the wholesale cost pass-through from retailers in an overall retail tariff (and in many cases, via their capital investment in rooftop PV). This is the consumption good that complements the access services provided by a network connection, and provides a critical price signal, separate from network tariffs, to encourage efficient energy use and lower system costs.

Tariff evolution is not adequate to mitigate the problem

It is possible that the evolution of network tariffs away from "anytime energy" consumption towards more complex structures is effectively pushing back against this problem.

To test this, we have modelled a range of scenarios for residential consumers, of varying consumption levels, and varying levels of CER investment. We find that current network tariffs are NOT effective in closing this inequity – the following is a typical outcome, based on SA Power Network's tariffs.



Source: Dragoman analysis of SAPN tariffs for various CER cases

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[6] See: https://www.energynetworks.com.au/news/energy-insider/the-death-spiral/

The modelling is fully described in ***Part 8: Testing specific tariff structures versus residential CER cases.***

Here, we can see that as CER investment by the household increases (from left to right in each of the three tariffs analysed), contribution to network cost recovery steadily decreases.

The more recently-developed tariff structures (e.g. SAPN's RSELE "electrify" tariff at right) do sometimes act to narrow this gap in network costs charged to CER "haves" and "have nots", but in general, it remains large – especially when households pair a BESS with their PV.

This arises because households with solar and a battery can optimise use to avoid any type of network consumption tariff.

CER raises major, fundamental questions about equity and fairness

As a result, we have some complex questions about equity and fairness here:

- Should the CER "haves" pay more for the network because of the additional benefits they receive from it, rather than less?
- Does CER adoption by some consumers simply lead to material network cost transfers to those without CER (the prima facie situation, as we demonstrate)? Or do the system benefits partly or wholly offset this, by providing lower costs to the "have nots"?[7]
- What is the implication for fairness if government-subsided CER investments by the "haves" result in higher comparative network costs for the "have-nots"?

What to do?

Addressing the CER Haves versus Have-nots

One approach might be to make ToU charges more extreme, including via the two-way tariff structures[8] we now see emerging – such as large credits for imports during daytime, large charges for exports during daytime, and the reverse in evening peaks.

Among the problems this approach would create are:

- Not all non-CER consumers can shift their load to benefit from such signals – this is not equitable.
- As the AEMC's Discussion Paper has made very clear, there is a substantial risk of conflict between such network price signals, and the more impactful benefits available if instead, consumers are exposed to wholesale prices signals.

Given this, a key suggestion arising from our analysis is to **re-think network pricing as two components**.

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[7] Well-addressed here: https://www.researchgate.net/publication/299400314_A_Design_Approach_to_Innovation_in_the_Australian_Energy_Industry

[8] Directed at CER consumers, typically involve a 'solar soak' period where grid exports are charged, offset by a peak period where grid exports receive a credit – as is the case for the SAPN tariff in the example. For non-CER consumers, the 'solar soak' period can offer very low import charges (or potentially, credits) to encourage shifting of load to the middle of the day when PV exports are often substantial.

Basic Access Charge

Fixed annual cost for a household to have access to grid imports.

+

CER Tariff

Additional network charges & credits associated with the connection and operation of various CER

The **Basic Access Charge** (BAC) would be in effect, a higher daily charge (if recovered via a network / retail tariff at all).

About $2/day per residential connection, on average across the NEM, would recover the full cost of networks for serving residential customers.

All imports of actual electricity consumed would be separately and additionally charged as a retail tariff component (as they are now).

We assume the BAC would be the appropriate basis to recover not just residual DUOS costs, but also TUOS costs that are currently passed through (typically as a consumption charge), and any JSA costs which are examined closely by the AEMC's Pricing Review and judged appropriate to be levied on electricity consumers.

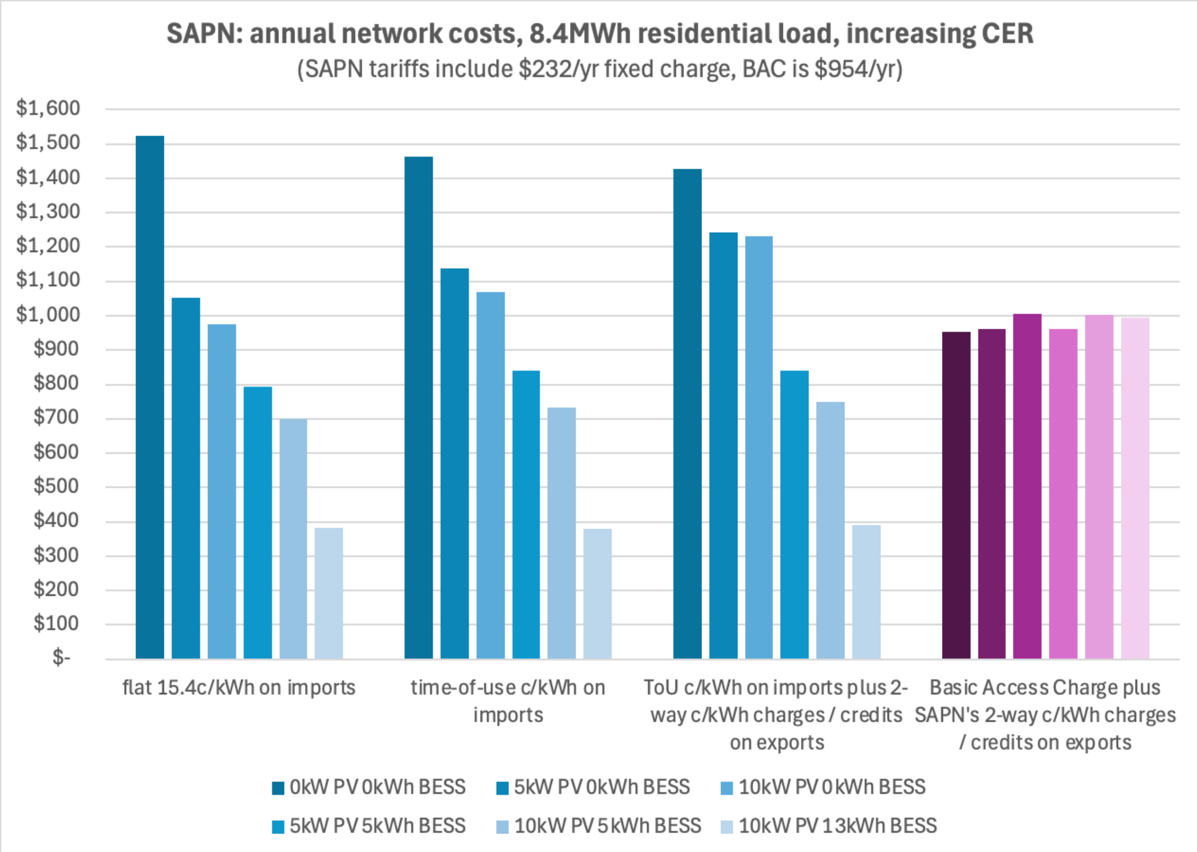
CER Tariffs would only apply to CER-connected households (including on an opt-in basis for consumers who may wish to shift load actively in a similar manner, should the tariff make that attractive).

In aggregate, CER tariffs would be broadly cost-reflective for the network but designed in alignment with retailers' wholesale signals. They may result in a small net positive or negative contribution to overall network cost recovery (depending on whether CER behaviour is judged to net increase of decrease system costs).

As noted, there are strong arguments for simple fixed network pricing for basic access – and this may also allow for better retail tariff design, and / or more appropriate cost recovery channels outside a retail electricity bill – as we discuss in further detail in the body of this paper.

Below we show how this might work.

We replace all the ToU import charges in SAPN's 'electrify' tariff with a fixed charge of $2.70/day (up from $0.64) and then apply the two-way tariff (unchanged) for exports to the CER cases (refer below the new case added at right in the figure below).



Source: Dragoman analysis of SAPN tariffs for various CER cases

The result is broadly similar network cost recovery from all consumers, regardless of their CER investment or otherwise.

- The households with modest PV and BESS investments (5kW PV, or 5kW PV plus a 5kWh BESS) pay a very similar amount to the non-CER household.
- The householders with larger (arguably, oversized) CER investments (10kW PV with 0, 5 or 13kWh BESS) pay a little more (driven by SAPN's charges for exports during the solar soak period in the middle of the day.

While this is just an illustrative example, it is this type of outcome that we believe represents a more equitable recovery of network costs from small consumers.

How should a BAC be collected?

In the body of the report, we note that a BAC – as a fixed annual charge per household – need not be recovered in the traditional manner via electricity bills. Instead, we suggest the BAC "looks like" the type of service charge collected via councils, and might be better recovered via that channel for several reasons:

1. **Locational pricing at LGA level:**[9] Councils represent local government areas, which are typically much smaller than DNSP regions. This may provide a useful mechanism for networks to apply more localised prices, better reflecting actual network fixed costs. It would be a way to step back from postage-stamp tariffs covering very broad and diverse network areas in some DNSPs – and that could lead to more equitable outcomes.

[9] We are presuming the DNSP's network area boundaries and congested areas align reasonably with LGA boundaries.

2. **Consistency with other Council charges:** Rates are accepted as a fixed cost, based on a measure of home value – there is no expectation that ratepayers are charged based on their volume of rubbish collected, or whether they actually use the roads. It seems likely ratepayers might accept the same for a network charge – perhaps with some simple variations based on whether it is an import-only connection, or a two-way connection with PV, or an EV charger.
3. **Onus on the property owner:** Rates are the legal responsibility of the property owner, not a tenant. While this can be adjusted via the terms of a rental contract, there may be some public policy attraction to property owners accepting the cost of maintaining access to the electricity network. Tenants would still pay consumption charges and any non-fixed network charges related to their consumption via retailers.
4. **Relatively efficient:**[10] Councils have existing billing systems for all properties. Networks and councils have existing commercial relationships, including the provision of public lighting by networks to councils.

Impact of a BAC approach on fairness

The most immediate concern with shifting residual network cost recovery towards a single BAC is that it may be considered unfair for a number of consumers, especially lower-income single person households who use little energy, and for whom the BAC would likely cause an increase in overall electricity costs, all else equal.

This is where a distinction between equity (via network pricing) and fairness is essential.

In practice, a key existing method to achieve **fairness** in electricity is via means-tested energy concessions funded by government.

Directing concessions towards relief from consumption-based charges is increasingly problematic, when broad proxies like grid import levels are an increasingly worse indicator of household wealth - especially as wealthier households face fewer barriers to deploy CER.

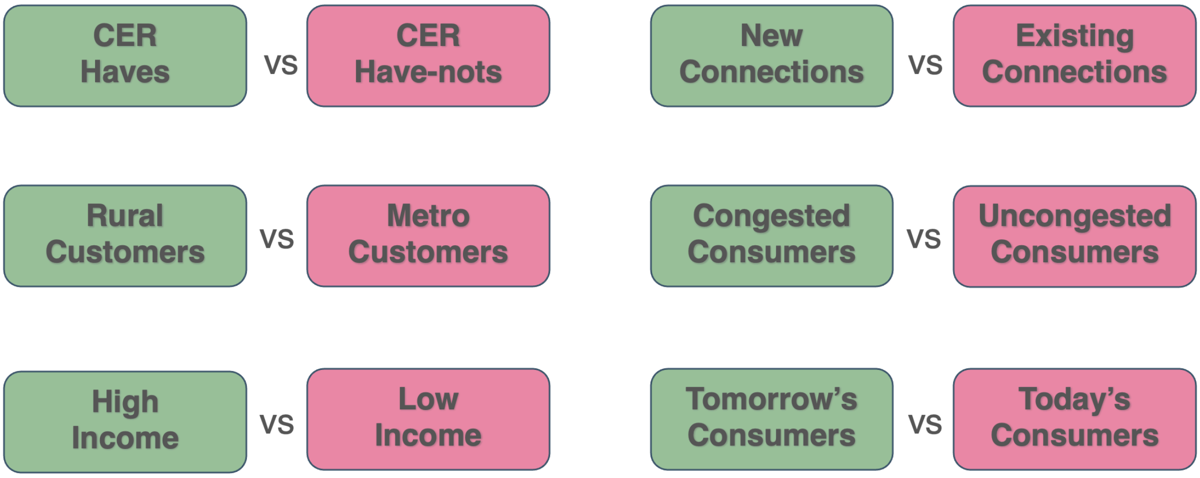
In this case, the introduction of the BAC would make it a natural target for redirecting existing government welfare funding support for energy concessions, and potentially also any future versions of recent ad-hoc policies such as broad electricity bill rebates – ideally on a means-tested basis.

Impact of a BAC approach on other inequity cohorts

Our recommendations focus primarily on one inequity issue, the *CER Haves versus Have-Nots*, as we judge this is both the most material, but also the most amenable to correction via the BAC.

The introduction of a BAC may also indirectly impact other inequity cohorts we have identified in the body of this report – summarised here:

[10] There would be some additional billing and co-ordination costs, since CER-related tariffs would still be recovered through retailers.



Generally, we find that the BAC model could also assist with (or at least, not worsen) other inequity vectors if carefully designed and implemented, as follows.

Cohorts	Possible Impact under BAC + CER Tariffs model
Rural vs Metro	The quantity of network assets per small consumer (and thus an equitable share of residual cost recovery) is larger for consumers in a rural part of a network area, than in a denser urban part. This means there is a cost-to-serve cross subsidy inherent in postage-stamp tariffs used in some network areas which are geographically large and diverse. Recovery via Councils could allow for network residual cost distinction at the LGA level, below the DNSP postage-stamp level. As is the case for means-tested concessions applied to the BAC, a similar approach could be taken by governments to subsidise higher evident BAC costs for rural small consumers (similar to the Uniform Tariff approach taken by Queensland for Ergon vs Energex DNSP areas).
High vs Low Income	BAC would be progressive due to the greater likelihood of higher-income households possessing CER, as more likely to be owner-occupiers and/or living in detached housing with better energy efficiency. But could be regressive in cases where wealthy non-CER households consume more electricity than lower-income equivalents – highlighting the importance of targeted concessions for the BAC.
New vs Existing Connections	Consumers in established areas of a network, whose assets were built at a much lower historical cost and have been largely depreciated, cross-subsidise new consumers joining the network as it extends at today's cost. This is particularly relevant where network areas include long-established residential areas as well as major residential growth. The identification of a BAC would possibly help highlight differences in new-build connection costs per household versus existing, however

	effectively addressing this would require additional policy related to up-front contributions to the network cost of new residential development areas, to ensure the net impact does not raise residual costs for all consumers in the DNSP area.
Congested vs Uncongested	A BAC + CER Tariffs model would deliberately de-emphasise peak demand charges, which are very problematic due to the locality of DNSP congestion relatives to an overall postage-stamp tariff (and the inherent uncertainty about future augmentation needs). This is in favour of price signals to CER exports (and likely EV charging), aligned closely with wholesale price signals, while also targeting cost-minimisation in the network in regard to CER hosting. Properly designed, these should ALSO be broadly aligned with reduction in NET peak demand (i.e. incentivised CER exports during evening peak netting off against nearby peak consumption). Also, with a simpler basic approach, it may allow for more targeted, localised opt-in tariffs for consumers who may wish to be incentivised to shift consumption to alleviate peak imports (rather than seeking to impose such tariffs across all the DNSP area, and all consumers regardless of their capability or willingness to act cost-reflectively).
Tomorrow's vs Today's Consumers	The most pressing version of this inequity is likely to be upstream of the distribution network, related to the cost of new transmission and (in some cases) generation and firming capacity costs that are passed through (the latter, via some cases of JSA). The nature and cost-recovery practices for both TUOS and JSA costs are more relevant than they may seem today – currently minorities of overall network costs, but likely to rise. These transmission assets (such as enhanced regional interconnection and the development of new Renewable Energy Zones) and certain policies are: 1. partly related to overarching decarbonisation policy objectives, not the simple provision of the most efficient electricity system, and 2. likely to be underutilised initially (in the case of transmission) when assets are accumulating onto the Regulated Assets Base but are incomplete or not yet ramped up to full use (i.e. prior to coal closures). The BAC model is not likely to directly impact this, but if TUOS and JSA costs form part of the BAC amount (instead of being 'disguised' as consumption-based charges) it may be easier to identify and establish who should pay. Choices include taxpayers, transmission asset owners, large industrial consumers and landlords before defaulting to small electricity consumers.

Impact of a BAC approach on CER adoption

Clearly, the approach we propose would diminish the economic attractiveness of installing CER. From a consumer's perspective, payback periods would increase – all else equal.

Rather than deriving part of the value from avoided residual network costs – which we establish are fixed and not reduced merely by virtue of less imports occurring – investment would need to be made based on actual reductions in system costs associated with CER being operated efficiently.

Fortunately, these are material (as the Energeia[11] report shows) and includes reduced large-scale generation, reduced call on new transmission infrastructure in future, and reduced firming and storage needs elsewhere in the system.

There are reasonable grounds to consider transitional arrangements for current and recent household investors in CER, which may take the form of partial BAC relief for a period consistent with a typical CER payback period – perhaps ~7 years from purchase.

To the extent CER adoption is to be further encouraged, there are a number of alternative mechanisms which jurisdictions could employ – including:

1. Capital subsidies, as already exist at Commonwealth and several sub-national jurisdictions.
2. A BAC Rebate paid by jurisdictions to CER investors, for a limited period.[12]
3. A continuation of the principle of the SRES, providing CER with a credit for the value of emissions reduction they may represent.[13]

In addition to these out-of-market incentives, if justified by cost-reflectivity, CER tariffs may be set by DNSPs such that CER owners are able to receive a net credit when operating their assets efficiently.

Conclusion – A BAC + CER Tariffs model is worthy of consideration

The BAC+CER Tariffs model we propose has been designed to address the most pressing inequity concern, now and especially in future as CER deployment continues (but not ubiquitously).

It may, if carefully designed and implemented, do little harm in other areas of inequity, and in several cases seems likely improve the situation.

There are various means by which concerns about fairness – such as the impact on smaller or low-consumption households – can be mitigated. Equally, there are other, more equitable levers available to ensure levels of CER adoption meet jurisdictional ambitions, if those exceed what might occur from proper in-market price signals.

Implementation might benefit if the collection of a BAC from was devolved to councils, on a basis similar to council rates, where the onus is on property owners to maintain compliance with the supply of certain essential services – this has several apparent attractions.

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[11] See: https://www.aemc.gov.au/energeia-finds-cer-flexibility-could-deliver-45b-benefits-2050

[12] Hopefully it is obvious this must NOT be recovered as a JSA from network charges that form part of the BAC in the first place!

[13] This becomes challenging when increasingly, rooftop PV may be curtailing utility-scale PV at the margin, not coal or gas. When combined with BESS, there is a much better argument the CER is offsetting thermal firming or storage. In any case, the principle might be that any recognition of emissions reduction value available to large-scale solar PV and BESS, should be similarly recognised for the CER version. That mirrors the join operation of the LRET and the SRES.

Report Structure

In the main body of this report, we support the preceding conclusions and recommendations as follows (click through to access):

Part 1: Evidence Base for networks and their costs

A snapshot of the NEM's 13 DNSPs, and the nature of the costs they recover from consumers.

Part 2: Principles to assess network cost recovery equity & fairness

A dozen principles which frame how we have assessed equity and fairness in this work.

Part 3: How does inequity and unfairness arise?

Five causal factors that can lead to inequity and unfairness.

Part 4: Inequity Cohorts

We divide electricity consumers into six 'A versus B' cohorts where inequity is apparent.

Part 5: Network cost recovery concepts

First ask what costs should be recovered, from who, via which channels, before defaulting to simply examining tariffs.

Part 6: Network tariff design principles

A look at the economic theory that supports our approach.

Part 7: Evidence Base for the status quo in DNSP cost recovery

How are costs actually recovered by DNSP and tariff type now – fixed, volumetric, …?

Part 8: Testing specific tariff structures versus residential CER cases

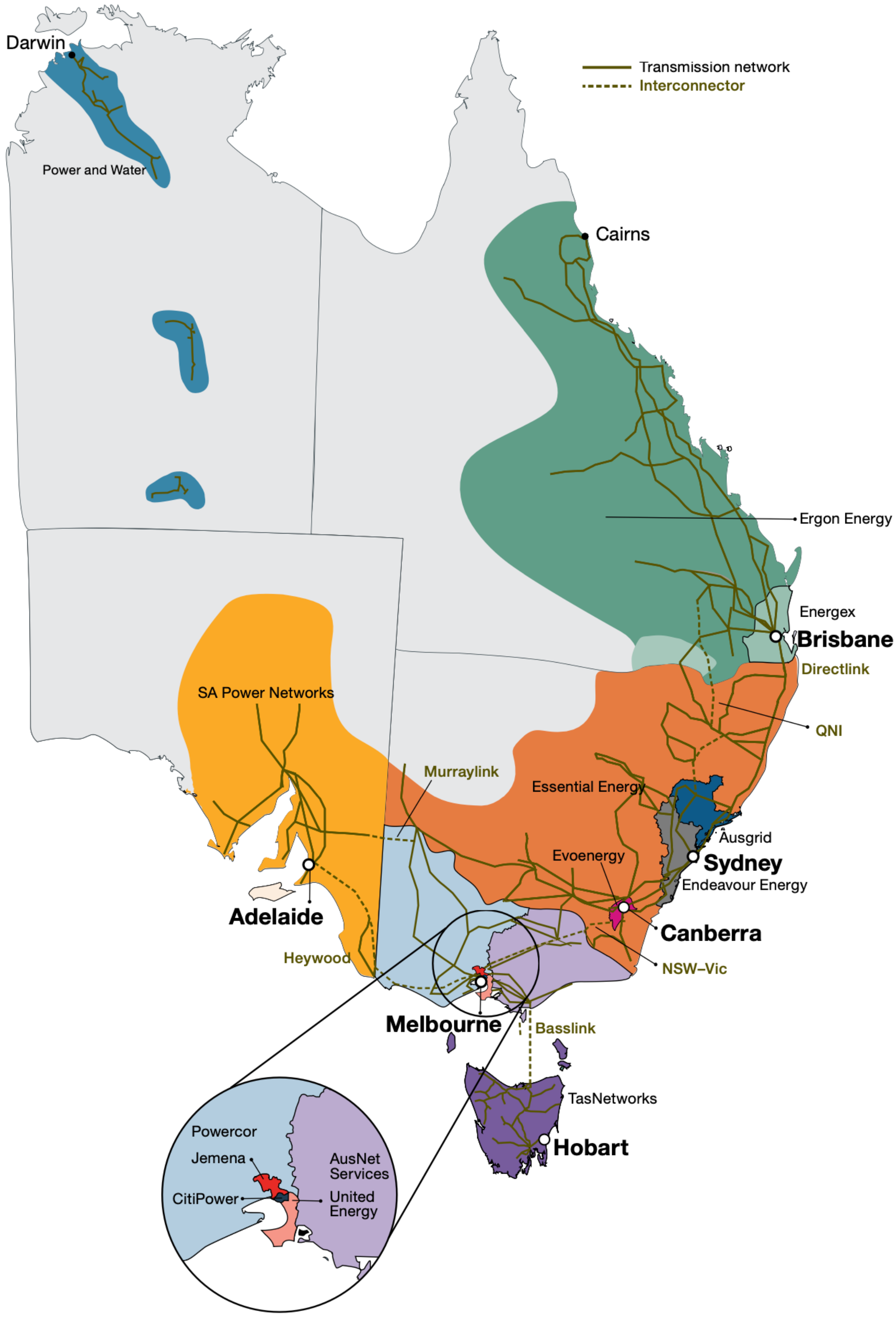
Delving into how specific cases of consumption levels and CER investment impact network cost recovery under currently applying tariffs for four of the DNSPs.

Part 9: An alternative: fixed Basic Access Charge plus CER tariff

Applying the same analysis to a version of our suggested BAC+CER Tariff approach.

Part 1: Evidence Base for networks and their costs

To investigate the nature of network costs and the equity and fairness of their recovery from residential consumers, we have assessed the current public information releases from the 13 Distribution Network Service Providers (DNSPs) operating in the NEM.



Source: Figure 3.1 from AER's State of the Energy Market report 2024

Data sources

The data is taken from:

- 2023-24 Regulatory Information Notices (RINs)
- 2024-25 Standard Control Services pricing models (SCS)
- Various DNSPs Tariff Structure Statements, TSS Explanatory Statements and detailed pricing documents in relation to specific tariffs analysed.

Our approach is a 'snapshot' of the status quo[14]. – we are not undertaking any historical analysis.

Overarching assumptions

We make several large simplifying assumptions in our analysis:

1. The overall cost allocation made by DNSPs between residential customers and larger customers is broadly fair (i.e. we are not contemplating any inequity between residential consumers as a whole with larger consumers).
2. DNSP costs are passed through in full to residential customers (i.e. retailers neither profit nor lose when they package DNSPs tariffs into retail offers, in aggregate) and
3. The DNSPs tariff structure is passed through to residential customers (i.e. the structure of DNSP tariffs to retailers become equivalent parts of the fixed, consumption-based or demand-based charges in the retail tariff).

Objectives of the analysis

In this analysis, we are interested to understand three main things:

1. **DNSP costs:** The nature of the costs DNSPs incur and recover from residential customers, and in particular, to what extent they are driven by customer behaviour.
2. **Cost recovery:** The manner in which costs are recovered in retail tariffs in aggregate, at DNSP level, among their various residential tariffs. This provides a useful average against which more specific outcomes can be compared, as well as revealing some interesting differences between various DNSPs.
3. **Equity implications:** When network tariffs are translated through a representative range of residential consumer situations, what type of divergence do we observe, and how can we interpret this from and equity and fairness perspective?

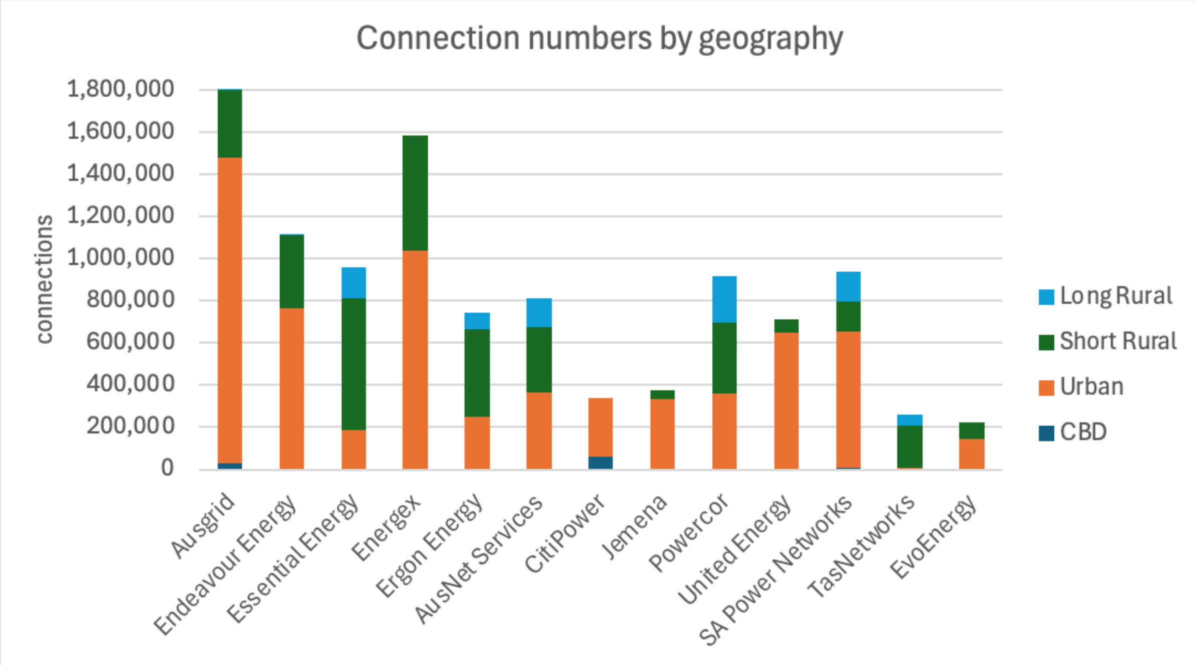
This helps inform our views about appropriate cost recovery mechanisms (such as tariff design), as well as more fundamental questions about who should fund certain costs, and whether the DNSP and retailer is the right channel for them to be recovered.

[14] Deeper analysis could look at longer-term cost trends (e.g. rise and fall of augmentation expenditure) - we address this briefly with reference to the AER's existing analysis. We might also have more explicitly considered likely future pathways for costs, and how recovery may change as tariff assignments evolve, including as smart meter rollout is accelerated. However, we think the direction of CER deployment is clear and we have considered this in our focus on 'CER Haves versus Have-nots'.

Overall data by DNSP

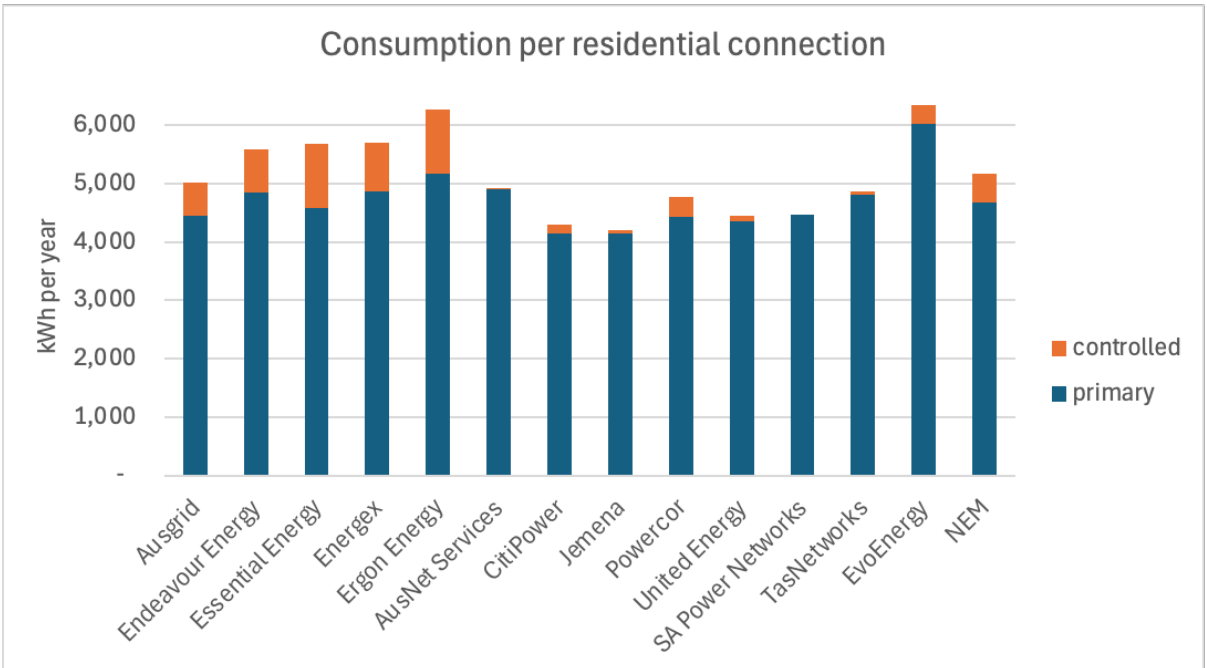
There are 9.9mn residential customer connections among the 13 DNSPs, which range broadly in terms of customer connections (from 0.2m with EvoEnergy in the ACT, to 1.6m with Ausgrid in NSW). DNSPs also serve about another 0.8m non-residential connections in the NEM.

There are broad differences in the physical area served, and the geographic distribution of residential customers – with wide dispersion in the blend of serving urban or rural customers.

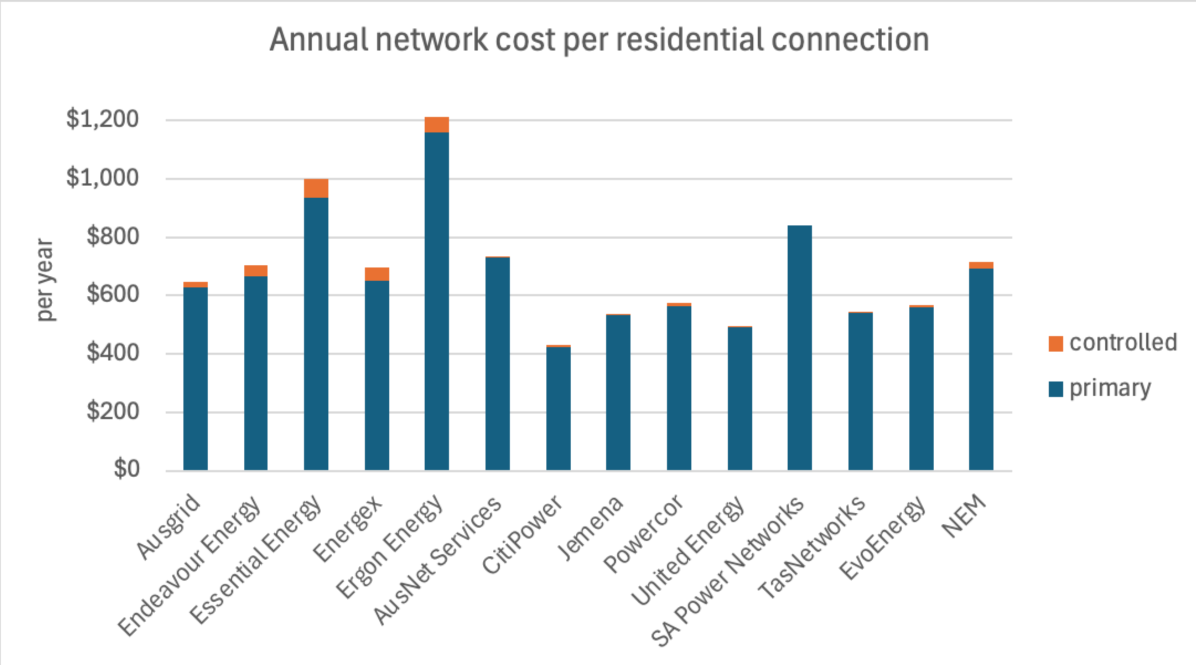


(note: includes non-residential)

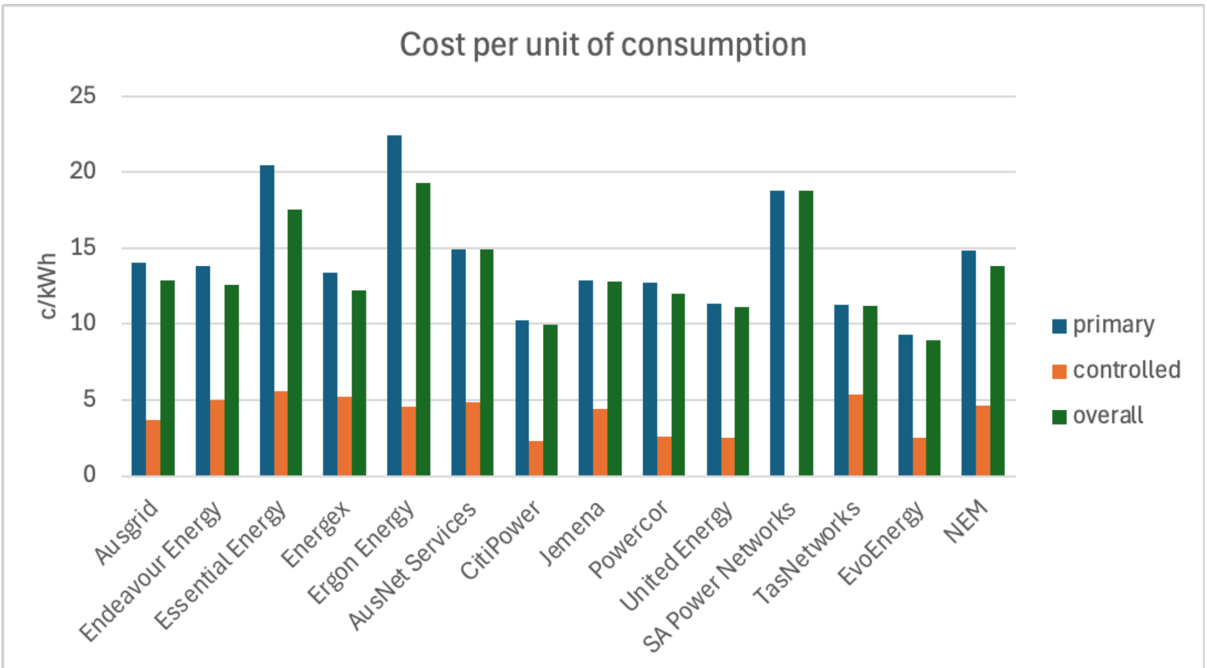
Residential customers have total consumption of 46.2 TWh (plus 5.0 TWh of controlled loads) – an average of 5.2 MWh per residential customer, per year. Between DNSPs, this varies quite widely, from as little as 4.1 MWh in some Victoria networks (where gas use is more prevalent as an alternative) to 6.3 TWh in Ergon (regional Qld) and EvoEnergy (the ACT).



The total cost recovery from these customers is $7.1bn, **an average of $716 per residential customer, per year** ($692 as primary tariff, plus $24 as controlled load tariff). The annual cost per residential customer varies wides between DNSPs, from as little as $429 for CitiPower in Melbourne, to over $1,200 for Ergon – where a state policy overlay equalises overall electricity costs for consumers with the Brisbane distributor, Energex.

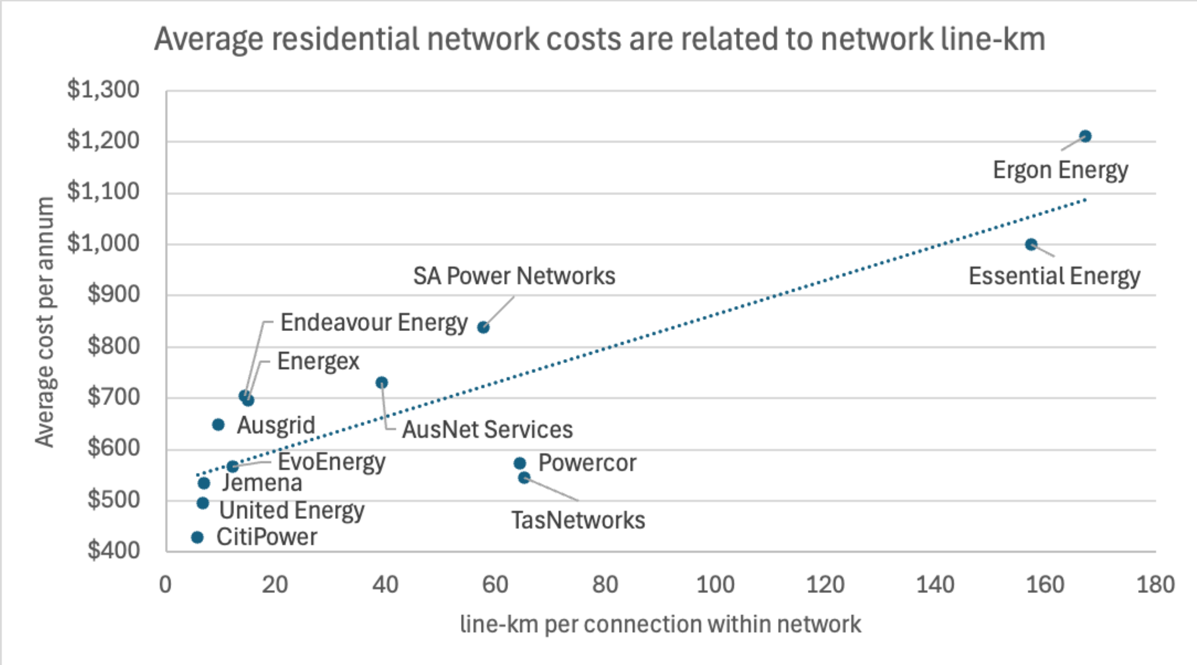


Expressed in volumetric terms, these charges represent an average 14.8 c/kWh for primary tariffs, and 4.6 c/kWh for controlled loads. Again, the range is fairly wide – for primary tariffs, as little as 9.3c/kWh in the EvoEnergy area, over 22 c/kWh for Ergon, with SA Power Networks and Essential also notably high.

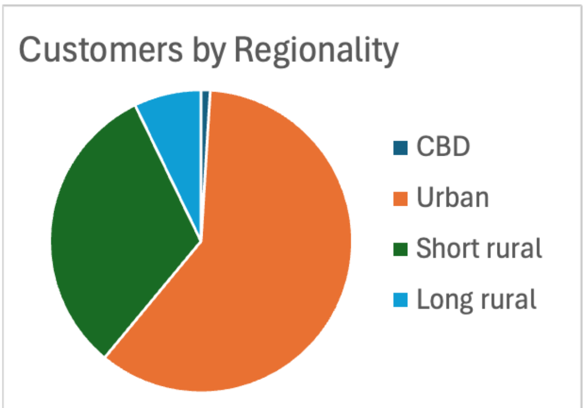


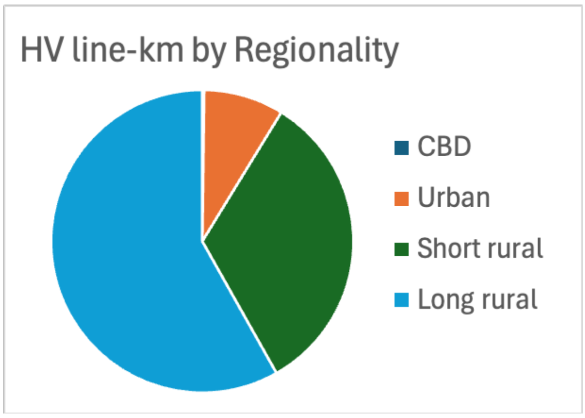
In conclusion, even at the crudest level of analysis it is clear that average residential consumer outcomes vary widely based on which DNSP serves them.

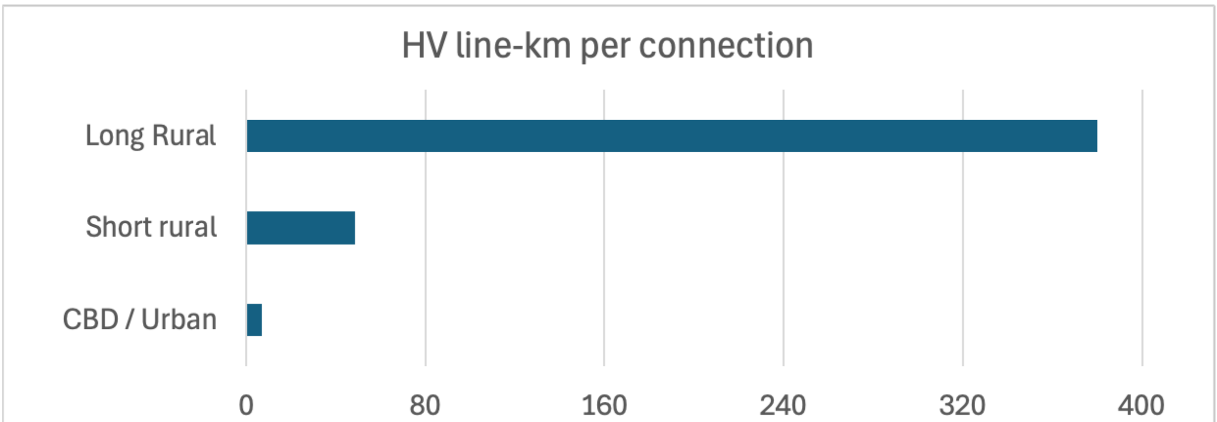
In explaining why this dispersion exists, one easy factor to identify is geography. DNSPs which include very large areas of relatively sparse rural and regional customer connections recover higher average costs than those concentrated more in cities (with smaller areas, and more densely distributed connections). There is physically less network required to serve some residential DNSP customers than others.



Most residential customers are urban. But the vast majority of DNSP network line-km are rural. Some DNSP customers account for much more network investment than others.

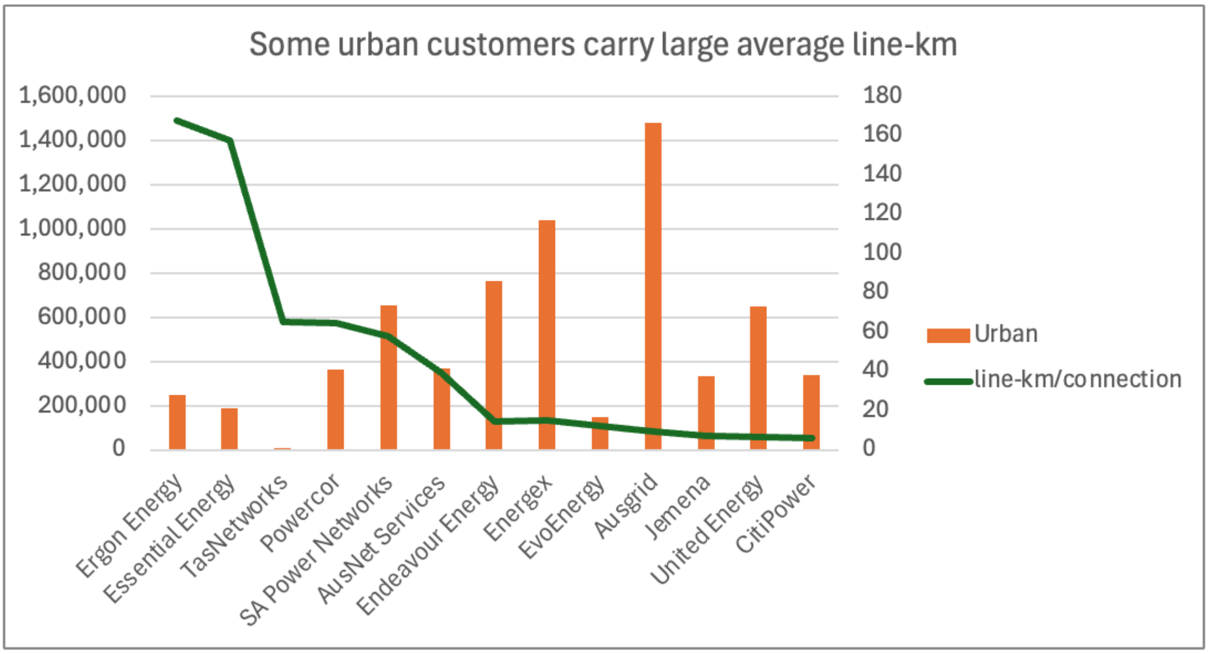






This perhaps is of most concern (on equity grounds) when a DNSP contains both material urban consumers as well as a large rural network service area.

A good example of this concern might be SA Power Networks, encompassing both an entire capital city and 0.7m urban connections, as well as most of the rest of the state of South Australia, with a further 0.3m connections. Not only does SAPN have relatively high average costs per connection compared with other DNSPs, but there is also likely a significant cross-subsidy in place, at the expense of Adelaide households.



But overall, by whatever means, DNSPs in the NEM must currently[15] recover about $716 on average per residential consumer, per year.

The question is how.

[15] Over time, this will be impacted heavily by growth in customer numbers, which better spreads fixed costs and puts downward pressure on the per-customer burden all else equal. However, this is partly or wholly offset by additional capital expenditure in the network exceeding depreciation and growing the regulated asset base, or rises in other costs (for example, the cost of debt and thus the regulated return).

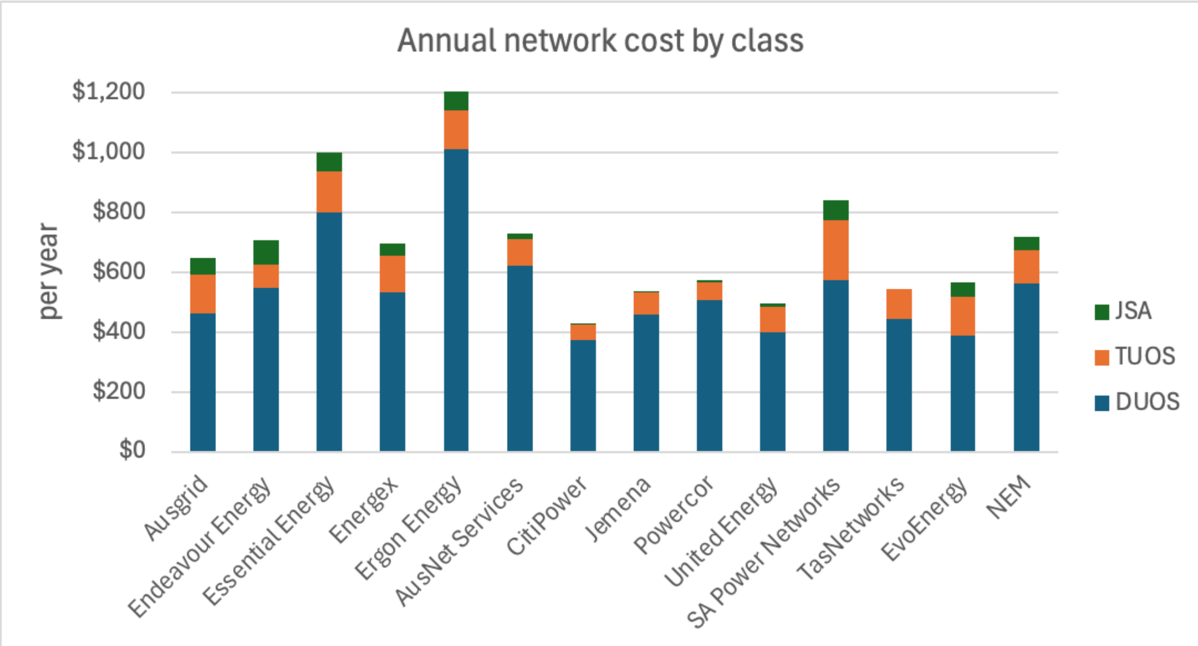
Classes of costs being recovered by DNSPs

In this analysis, we are interested to understand the nature of the costs DNSPs incur and recover from residential customers, and in particular, to what extent they are driven by customer behaviour.

This can in turn help inform our views about appropriate cost recovery mechanisms (such as tariff design), as well as more fundamental questions about who should fund certain costs, and whether the DNSP and retailer is the right channel for them to be recovered.

In broad terms, DNSPs package up and pass through three classes of cost to residential consumers in their tariffs:

1. **Distribution network costs – DUOS**, also referred to here as Standard Control Services (SCS) charges.[16]
2. **Transmission network costs** – **TUOS**, passed through to the DNSPs by the TNSPs.
3. **Jurisdictional Scheme Amounts – JSA**, charges which are created by the host State or Territory jurisdictions and levied on DNSPs to be recovered from customers.



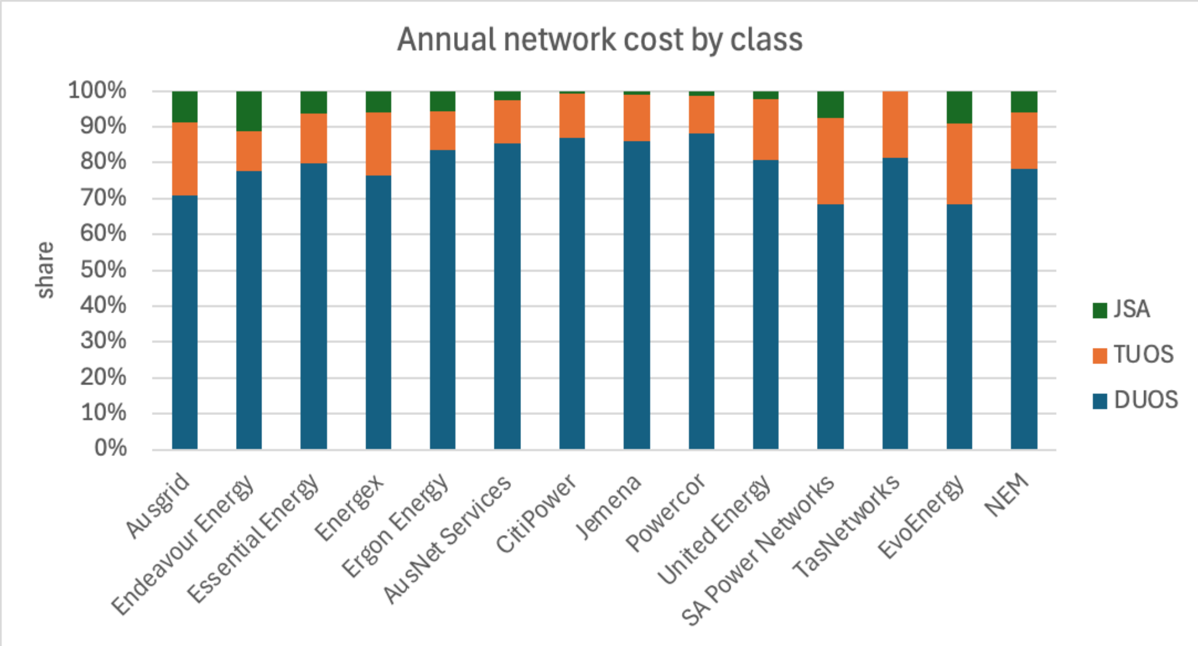
Of the NEM-average $716 of network cost recovery per residential customer annually, **DUOS** is the dominant class of cost, averaging $561 per year, or 78% of the total. **TUOS** is $113 (16%) while **JSA** represents $42 (6%).

- 95% of JSA are recovered from residential customers as a consumption-based element of the charges in a network tariff. There are a couple of exceptions in the United network (where they are part of fixed charges, 3.22c/day in 2024-25) and SA Power Networks (where they are split as 77% volumetric, 23% fixed).
- The situation is similar with TUOS: 92% are recovered volumetrically. Several networks (Energex, Ergon, Jemena and Ausgrid) partially recover TUOS from fixed charges, but a minority – ranging from 27% of TUOS at Ergon to 4% at Jemena.

Recovery of TUOS and JSA contribute to what we show is a heavy overall reliance on consumption-based charging to recover total DNSP costs from residential customers.

[16] SCS is about 90% of DNSP revenue in the NEM. We are not analysing other revenues or costs associated with the other 10% - metering, connections, ancillary services and public lighting. These are either not charged to residential consumers, or charged based on activity.

Among the DNSPs, there are significant differences in the weighting of TUOS – from as little as 11% in several networks, up to 24% in SA Power Networks.



We note that significant additions to transmission RAB could materially impact both the quantity and share of TUOS in residential consumers' bills, as substantial new investment occurs in ISP priority projects, including enhanced regional interconnections and new Renewable Energy Zones.

Looking at Jurisdictional Scheme Amounts more closely

JSA amounts vary widely, from $80 in Endeavour – 11% of the total – to nil in Tas Networks.

JSA amounts could also materially change in future – one example being future costs associated with the provision of revenue support for large quantities of renewable energy and firming capacity under the NSW Electricity Infrastructure Roadmap, a significant jurisdictional scheme in its early stages. The ACT's earlier but similar experience underwriting large-scale renewables is instructive here: that JSA is costing ACT residential customers over 9% of their total network costs in the year to June 2024.

Overleaf, we briefly summarise the range of JSA by jurisdiction. Notable points include:

1. **Premium FiTs add to non-CER householder burden:** Every jurisdiction imposing JSA has all residential customers funding early-adopter rooftop PV households, via premium feed-in tariffs. This is an additional burden on non-CER households who – as we show – are already disproportionately paying for network costs recovery compared with CER-enabled households.
2. **Network costs funding wholesale renewables penetration:** the ACT and NSW are both recovering what are essentially wholesale contracting costs (revenue underwriting for generation capacity) as a "network" cost in residential bills. In fact, this component is highly exposed to wholesale market price risk in future. They are more closely aligned with a retailer's wholesale input and hedging costs.
3. **Other unrelated things:** A number of schemes recover government obligations to fund regulators (ACT, QLD, VIC), or desires to promote decarbonisation broadly (NSW), or to support aging thermal generation capacity they don't want to exit (SA). In the ACT, they simply impose a Utilities Tax… on consumers.

<u>Jurisdictional Scheme Amounts – state policy funding from network customers</u>

JSA are imposed by state / territory jurisdictions on DNSPs as a means to recover costs associated with various policy initiatives.

In **NSW**, these currently comprise:

- **NSW Solar Bonus Scheme,** a PV feed-in tariff for households that installed rooftop PV to end-2016
- **NSW Climate Change Fund** – established to address the impacts of climate change, encourage energy and water saving activities and increase public awareness and acceptance of climate change
- **NSW Electricity Infrastructure Roadmap** – the underwiring scheme for large-scale renewable energy and storage assets

In **Victoria**, JSA amounts fund:

- **Premium Solar Feed-in Tariffs**, similarly to the NSW case
- A recent **Energy Safe Victoria levy**, to support a regulatory body involved with regulating the safety of energy infrastructure.

For **Queensland**:

- **Queensland Solar Bonus Scheme**, another PV feed-in tariff
- Queensland's share of the **AEMC Energy Industry Levy**

In **South Australia**:

- **PV Incentive Scheme**, paying a 44c/kWh feed-in tariff.
- **AGL Designated Services**, a three-year programme for supporting one of AGL's generation units at Torrens Island Power Station.

In the **ACT**, there are the widest range of JSA amounts:

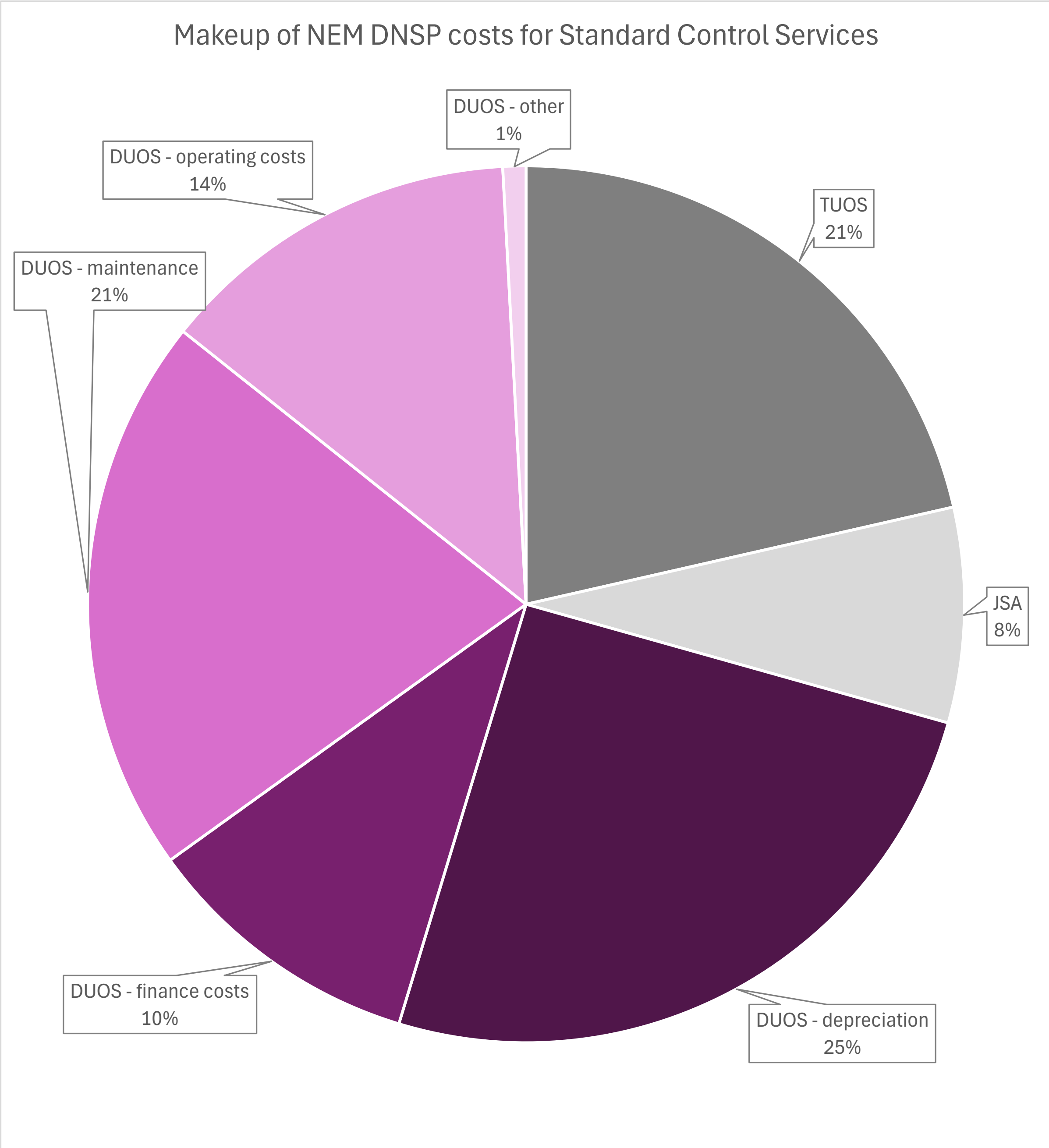
- An **Energy Industry Levy**, similar to that imposed on the QLD networks
- A **Utilities Network Facilities Tax**
- **Small-scale Feed-in Tariffs** for rooftop PV
- **Large-scale Feed-in Tariffs** to support the ACT's procurement of 210MW of large-scale renewables via fixed-price long term contracts, similar to NSW's newer Roadmap.

Tasmania does not currently impose any JSA on electricity consumers.

DNSP operating costs – largely fixed from consumer perspective

Within the dominant DUOS class of overall network costs, we note that the accounting of costs by the DNSPs[17] suggests they are overwhelmingly fixed in nature (in at least the short to medium term) with respect to any consumer-driven activity.

In other words, distribution network operating costs are not driven by either the quantity of electricity consumed (or exported), the time of use (or export), or the peak in demand or export by consumers.



[17] Note that in this figure the numbers are for ALL DNSP SCS costs – there is no breakdown available for residential consumers. As such, the proportion of TUOS and JSA are higher than for residential consumers only, as quoted in the previous section.

Looking at these cost categories, we consider what drives them:

DUOS cost category	Cost drivers
Depreciation	sunk capital base and the depreciation rate
Finance costs	sunk capital base, capital structure and interest rates
Maintenance	activity needed to keep the existing asset base in good condition
Operating costs	likely related to staffing, accommodation, IT, procurement, and other overheads required to run the corporate business

It seems to us that operating costs are NOT materially driven by any behaviour of customers (such as the specifics of usage of their network connection) in the short or medium term.

However, to some extent these will scale up with the size of the network and the number of customers, in relation to maintenance and customer service.

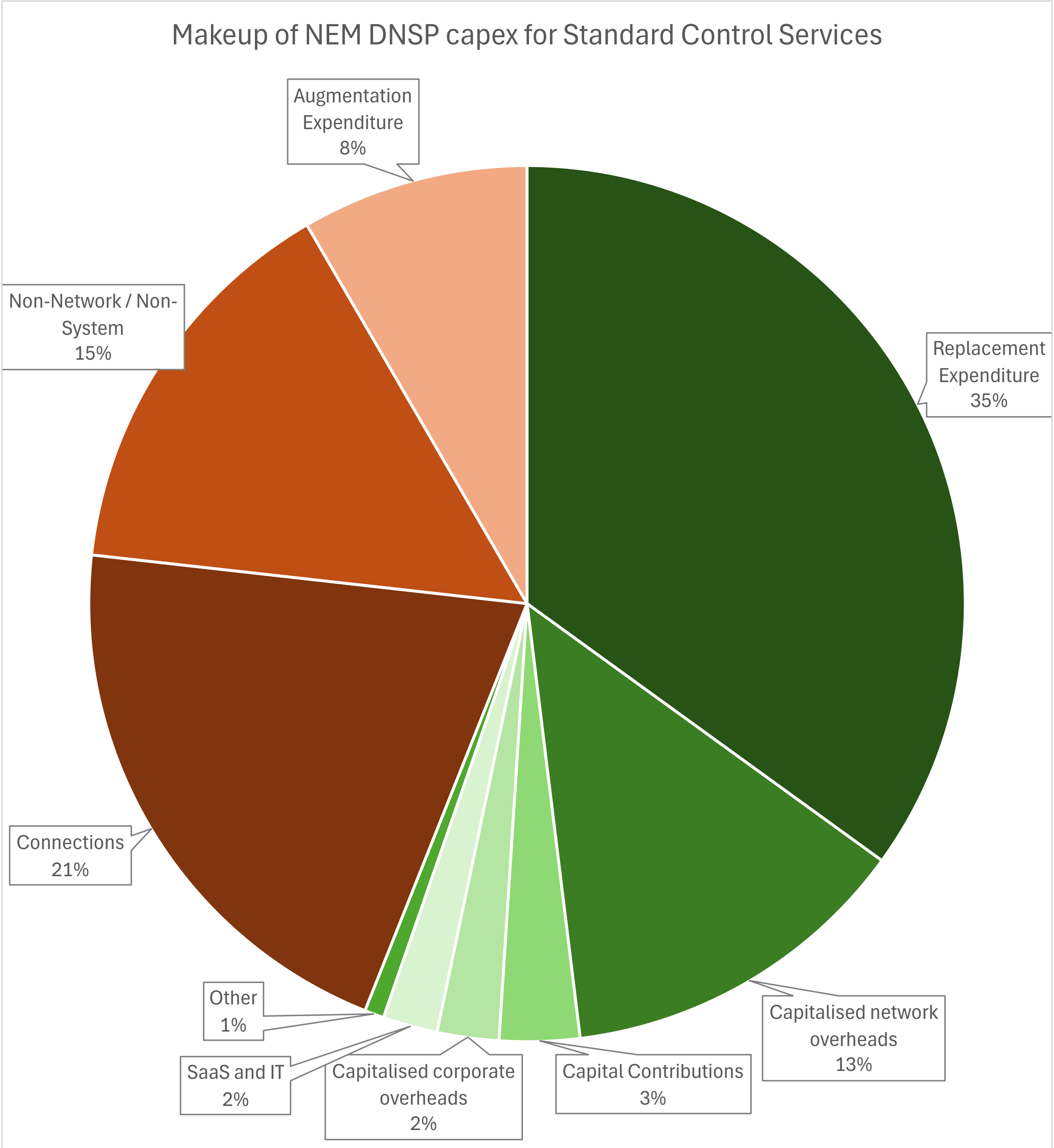
But importantly, we note there is **no behaviour a current customer can take to impact these costs, once connected**.

In summary, it seems reasonable to us to assume that the **current costs of a network are largely fixed and unaffected by the behaviour of residential customers connected to the network.**

DNSP capital expenditure – limited forward-looking costs to address

SCS capital expenditure for the 13 DNSPs in the NEM was $6.6bn in FY24, which is significant compared with total SCS operating costs of $10.8bn. A given year's capex becomes future years' depreciation, finance costs and maintenance needs.

Therefore, in understanding how customer behaviour drives DNSP costs in the future, it is important to look at capex.



Here, we see that the majority of capex (about 56% in our view) is not related to changes in the network at all – these are made up of:

- **Replacement** expenditures of the existing network (e.g. like-for-like, at end of life) – 35% of all capex.
- **Capitalised network and corporate overheads** – a further 15%
- **Capital contributions** (paid by large connecting customers) – 3%
- **Software, IT and other** – 3%

There are substantial categories which likely ARE related to changes in the network, such as:

- **Augmentation** – allowing the network to host greater demand – 8%
- **Connection** – growing the size of the network, with new customers – 21%
- **Non-network / non-system** – likely related to intangible investments to increase network capabilities – 15%

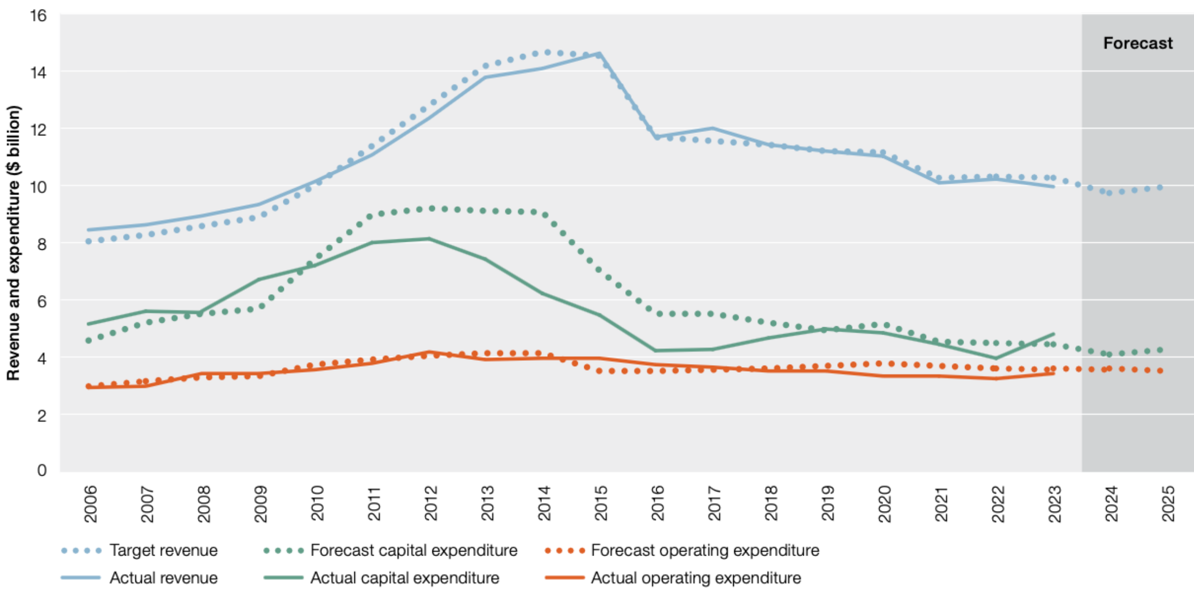
Note that connection costs are unrelated to the behaviour of EXISTING customers.

Augmentation expenditure is clearly very important as it adds capacity to the network – whether for greater peak consumption imports, or PV exports.

It also grows the regulated asset base beyond the depreciation of the current network assets and thus, increased future consumer costs for the long-term as the additional capital is recovered plus a regulated return.

We have shown only a snapshot of 2023/34, but it does not appear to be unrepresentative. The following analysis, all taken from the AER's State of the Energy Market Report 2024, helps put it in context.

Figure 3.9 Revenue and key drivers – electricity distribution networks (aggregate)

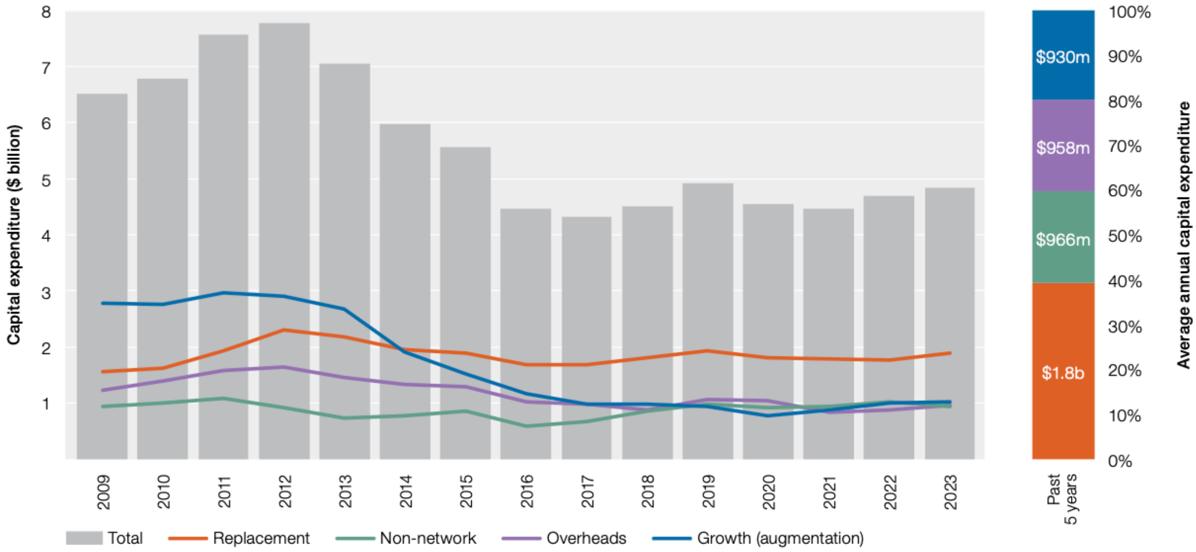


Note: All data are adjusted to June 2023 dollars. The data show outcomes for the reporting period ending in that year (for example, the 2017–18 reporting year is shown as 2018). The exception is the Victorian networks, which until year end 2020 reported on a 1 January to 31 December basis. Target revenue for the Victorian distribution networks for the 2021 year has been derived from the transitional year (1 January to 30 June 2021). To enable reporting on equivalent terms, these values have been doubled. Target revenue is derived from regulatory determinations but adjusted to present it on a comparable basis to actual revenues. The adjustments include rewards and penalties from incentive schemes, cost pass-throughs and other factors that are considered in determining the target revenues used to set prices each year. The exception is the Victorian networks, which until year end 2020 reported on a 1 January to 31 December basis.

Source: Revenue: economic benchmarking RIN responses; capital expenditure: AER modelling, category analysis RIN responses; operating expenditure: AER modelling, economic benchmarking RIN responses.

In the figure above, we see aggregate distribution network capex has been relatively stable since declining from a peak in 2012.

Figure 3.22 Drivers of capital expenditure – electricity distribution networks (aggregate)

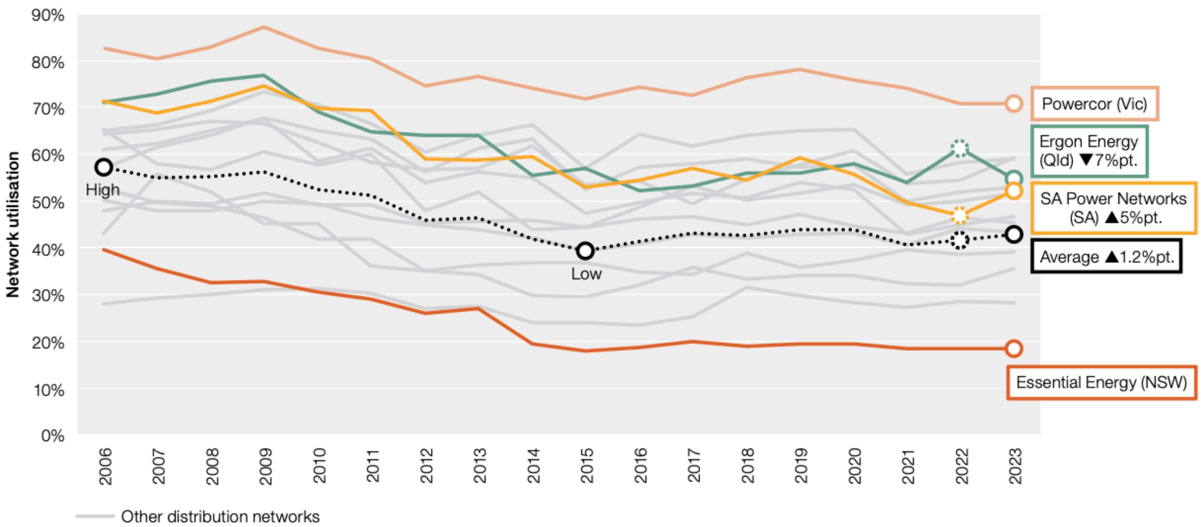


Note: All data are adjusted to June 2023 dollars. The data show outcomes for the reporting period ending in that year (for example, the 2017–18 reporting year is shown as 2018).

Source: Category analysis RIN responses.

Breaking this down, augmentation in particular has stepped down from about $3bn per annum over 2009-13, to about $1bn per annum since 2017.

Figure 3.31 Network utilisation – electricity distribution networks

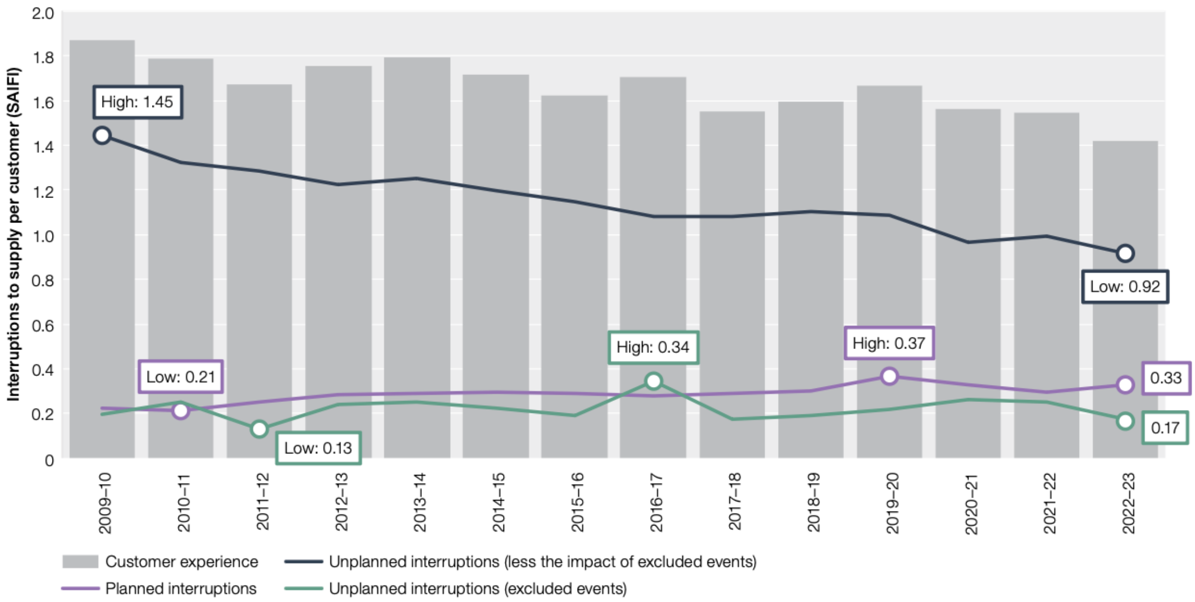


Note: Network utilisation is the non-coincident, summated raw system annual peak demand divided by total zone substation transformer capacity. The changes identified in the labels refer to the relative change in utilisation in percentage points over the previous year.

Source: Economic benchmarking RIN responses.

The flipside of augmentation investment is network utilisation – which we can see here has also declined materially from 2006 to 2015, then remained fairly stable. This indicates relatively low overall pressure on networks compared with the past and so suggests little imminent risk of a rebound in augmentation capex being required.

Figure 3.34 Interruptions to supply (SAIFI) – electricity distribution networks



Note: SAIFI: system average interruption frequency index.
Data in Figure 3.34 shows interruptions to supply that lasted longer than 3 minutes. This is consistent with the definition of a sustained interruption in the AER's current service target performance incentive scheme (STPIS) (version 2.0, November 2018). The previous version of the STPIS (May 2009) defined sustained interruptions as those that lasted longer than one minute. Reporting historical SAIFI using a consistent definition allows for greater comparability over time. As such, the values shown above may not reflect outcomes reported in the past. Years reflect 1 July to 30 June. The unplanned (STPIS excluded events) as shown in Figure 3.34 cannot be directly calculated at a whole of NEM level because the major event day calculation must be made at a network level. For example, 22 November 2022 was classed as a major event (STPIS excluded event) for AusNet Services (Victoria) but did not qualify as a major event day for any of the other 12 distribution network service providers in the NEM. As such, the unplanned (STPIS excluded events) and unplanned (normalised measures) in Figure 3.34 are calculated based on each individual network service provider's outputs and subsequently weighted to show a 'whole of NEM' measure.
Source: AER modelling; category analysis regulatory information (RIN) responses.

Another lens to consider is reliability. Network augmentation (and wise investment in general) should also maintain supply to customers against unplanned outages. Above, we see that network performance in this regard has never been better.

What can we conclude?

While our analysis is a current snapshot only, and periods of higher or lower augmentation expenditure may deviate from this average, we note the **average SCS capex per customer at $611 now is substantially more than the AER's reported 5-year average to 2023 of $432**[18], so we doubt our snapshot is underestimating typical capex levels required for augmentation or other purposes.

However, we acknowledge these levels are below the 'gold plating' era in QLD (2010-11 to 2014/15) and NSW (2009/10 to 2013/14.

Considering the scale of customer-influenced costs

So, to take the example of a network's requirements to accommodate additional demand from existing customers (e.g. from more air-conditioning, or rooftop PV exports), there is perhaps 23% of annual capex (or about $1.5bn) being invested at present – if we fully allocated augmentation expenditure and "non-network / non-system" expenditure to this.

This is about $142 per DNSP connection, and using a 7% rate of return, implies $10 per connection of future costs.

These costs do accumulate year on year, but we note they are relatively small in terms of the total $716 per residential customer that is recovered.

[18] State of the Energy Market 2024, figure 3.11

Compounding this is the question: to what extent can changes in customer behaviour move the needle?

If customer responses to cost-reflective tariffs reduced this annual capex by 10%, the impact on customers costs would be very small - $1 per year in this example.

<u>Full of sound and fury, signifying nothing?</u>

In their Tariff Structure Statements, networks estimate the long-run marginal cost (LRMC) of additional import capacity.

To take one example, Endeavour Energy estimate the LRMC for imports at $81.2/kW per annum for their low-voltage customers.

Endeavour estimate that their tariff strategy (which include time or use and demand charges) should "*reduce maximum import demand across the network by 0.8% over the next ten years*"[19]. This represents about 44MW, or $3.6m using their LRMC estimate.

In that period, peak load is nevertheless expected to rise 57% (instead of just under 58%).

So – cost-reflective tariffs in this example might reduce Endeavour's DUOS costs – which were $1.13bn in 2023-24 – by 0.3%.

Is it worth it?

Overall, the vast majority of costs are not variable with consumer actions

By the time they are networks' current operating costs, we see little if any opportunity for customer behaviour to drive them either lower or higher. Even future costs, represented by today's capital expenditure, seem to be mostly unrelated to customer behaviour.

From the figures above, the DNSPs expended a total of $17.3bn in FY24 across operating and capital expenditures, of which only $1.5bn (less than 9%) seems able to be influenced by customer behaviour.

Of that 9%, we suspect the ability to materially influence it either way based on customers realistically adjusting how they use the network would be a very small proportion.

Overall, we conclude that **residential customers have little to no agency in relation to how network costs arise and evolve.**

This is worth considering very carefully when assessing how network costs are recovered, and from whom.

Rules for setting tariffs may be counterproductive

Networks face significant legal constraints in how they can set and change tariffs, given the requirement to comply with the relevant parts of the National Electricity Law (NEL) and National Electricity Rules (NER).

Endeavour Energy expresses this very clearly in their most recent Tariff Structure Statement (our emphasis):

> "*Costs not recovered from import and export LRMC-based charges are recovered from fixed charges, energy charges and demand-based charges. In the absence of reliable information on the price elasticity of demand, this allocation is* ***guided by a rebalancing of the recovery of costs towards fixed charges and away from distortionary consumption-based charges****, subject to the extent this rebalancing*

[19] Endeavour's 2024-29 Tariff Structure Explanatory Statement, p27-28.

can be achieved without unacceptable network bill impacts for our customers. The extent to which we can move towards LRMC-based charging and higher fixed charges is constrained by prioritising the management of customer bill impacts."[20] … and

"*Theoretically,* ***it is most efficient for us to recover from our customers the residual costs we incur exclusively from the fixed charge tariff component*** *because these charges are independent of a customer's usage decisions and therefore minimise the distortion to the LRMC-based price signals that promote efficient usage of our network service."*

Within the NER, we note the following in Rule 6.18.5(h):

> *A Distribution Network Service Provider must consider the impact on retail customers of changes in tariffs from the previous regulatory year and may vary tariffs … to the extent the Distribution Network Service Provider considers reasonably necessary having regard to:*
>
> (1) [compliance with cost-reflective pricing principles albeit allowing for long periods of transition extending over more than one 5-year regulatory period]
> *(2) the extent to which retail customers can choose the tariff to which they are assigned; and*
> *(3) the extent to which retail customers are able to mitigate the impact of changes in tariffs through their decisions about usage of services.*

The Australian Energy Regulator assesses whether DNSPs are compliant with these rules, and it seems to us there is a preference for extensive smoothing of any bill impacts implied in both the Rule and how it is applied.

However, **the penetration of rooftop PV and householder BESS installations is moving much more quickly that this approach can keep up**.

Adjustment of this Rule and / or how it is applied should be seriously considered as an objective of the AEMC's Pricing Review. Rather than smoothing impacts, it may be better to shift towards more equitable cost recovery quickly (per our recommendations) and manage the impacts separately – e.g. via targeted concessions where there may be unfairness created or undue harm to some consumers.

[20] Endeavour's 2024-29 Tariff Structure Explanatory Statement, p85 and p91

Part 2: Principles to assess network cost recovery equity & fairness

Our Evidence Base makes clear that most network charges – despite being fixed in nature from a residential consumer's perspective – are recovered via consumption-based pricing. This includes transmission and jurisdictional schemes which account for about 22% of the current total but seem likely to grow in relative terms.

In the context of network costs and small electricity consumers, we note a dozen principles[21] that help us to decide how best to pursue equity and fairness in cost recovery:

Firstly and importantly… the pub test (a consumer's perspective)	Largely, a fixed-cost recovery problem	Network access is not a good, it is a service	No free-riding
Cost-reflective pricing where it really will minimise future system costs	Cannot be designed in isolation from the rest of the bill stack	Network pricing exists alongside other incentives beyond the bill	Support innovation and flexibility – from networks and consumers
An overarching incentive to increase electrification	Only for efficient network services, not broad decarbonisation policy	Not to deliver social policy objectives either (-> fairness)	Avoid conflating equity with fairness in pricing electricity networks

Principle 1: The pub test

In the face of all the complexity we are outlining in this section, this is arguably the most important. In the end consumers need to be able to understand and consent to how network costs are recovered. It should be:

- relatively easy to explain to a non-expert consumer.
- reasonably transparent – which might imply better identification on retailer bills.
- not so complex for them to navigate that it requires a degree of engagement that most consumers would prefer to avoid.
- something the person in the pub would likely conclude is "fair enough".

Principle 2: It is a largely fixed-cost recovery problem

Many network costs are essentially fixed and unavoidable, at least in the short to medium term – they are related to historical / sunk costs, or activities that are not correlated with consumer behaviour such as consumption quantities, maximum demand or time of use.

We explore this in some detail for the NEM in the Evidence Base for this report.

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[21] Note some issues deliberately NOT picked up in this list:

- Cost allocation between large and small consumers – out of scope.
- Potential for distortive price signals between gas and electricity networks impacting fuel choice – somewhat out of scope, covered by the incentive to increase electrification to some extent.
- Equity for other stakeholders – networks, generators, retailers, taxpayers – which should be checked case-by-case for any proposals.

In addition, we acknowledge that complexity arises if better equity on one dimension might cause or worsen inequity in another, and these need to be weighed against each other. Another important criterion for assessing ideas.

Principle 3: The network is not a good, it is a service

Networks offer two-way access to electricity (imports and exports), but (unlike wholesale electricity) they are not the product itself. Different consumers in different circumstances will view this service in various ways – including:

A way to access to electricity imports for my consumption	A means to sell my surplus PV generation
A two-way channel to top-up BESS when prices cheap, sell to grid when expensive	An enabler of transition to an EV via home charging
A way to benefit from a community battery (and my neighbour's PV)	Allows my participation in a retailer's Virtual Power Plant
Fallback supply - insurance when my PV / BESS supply is exhausted	A cheaper service arrangement than investing to go completely off-grid

A number of these are direct financial benefits enjoyed by CER-enabled consumers, thanks to their access to the network.

Principle 4: No free-riding

Fixed and sunk costs have to be recovered somehow, and while the details differ, all consumers recognise some value – perhaps even a similar value – in having a network connection.

The burden should not be placed too heavily or lightly on any class of consumer based on their circumstances or behaviour, such as their consumption levels (which they pay for via wholesale costs) or what (if any) CER they possess.

Principle 5: Cost-reflective pricing to minimise future costs

It is important to be rigorous in ensuring that only those consumers whose actions genuinely have material impacts on network costs, pay for those additional costs.

Equally, if consumers lack the capacity to respond to price signals, they may improve equity of cost recovery via better allocation of now-fixed costs in hindsight but may not actually act to reduce future system costs. If this is largely the case for many consumers, the benefit of cost-reflective network price signals is limited and should not dominate network pricing debates.

While we show the large majority of network costs are fixed, some certainly are not – especially future costs. The future investment networks make will support:

- Physical network growth (connecting new consumers in new areas).
- Augmentation of the current network footprint to cater to higher consumer demand.
- Changes to the network to accommodate CER and distribution-embedded storage.

If these costs can be minimised, deferred or allocated more equitably, this should be a consideration – and may justify appropriate pricing signals.

However, there is likely to be a significant trade-off between truly cost-reflective network pricing and other objectives, especially complexity. Postage-stamp tariff approaches appear to be particularly problematic in this respect.

Principle 6: Cannot be designed in isolation

Network charges form an important part of consumers' bill stack – but only a part. The recovery of network charges should not be designed in isolation of the whole.

In particular, there are elements of the bill stack – such as the wholesale costs – which are:

1. much more clearly related to the consumer's usage; and
2. much more impactful in term of minimising system costs via price signals, if consumers respond.[22]

Some of the price signals which apply to wholesale costs will correlate to some extent with price signals we may wish consumers to respond to in relation to networks. However, these wholesale price signals are likely to be much stronger than an equivalent measure of cost-reflection in terms of forward network costs.[23]

It is worth considering whether the complexity of time-of-use network tariffs are worthwhile, if they overlap with, but are much weaker than, a wholesale price signal to consumers. The AEMC's Discussion Paper (refer p. 59) has made clear that in fact, they may directly conflict.

Principle 7: Exists alongside other incentives

In addition to the rest of the bill stack, network pricing coexists with out-of-market incentives, such as government subsidies in relation to CER including rooftop solar, batteries and electric vehicles.

The existence of these subsidies means that governments are ensuring faster and greater penetration of CER than consumers as a whole would choose otherwise.

To the extent this has distortive impacts on equity and fairness, government should consider its obligation to 'lean back' against this.

As far as network cost recovery is concerned, this is a reason why equity might justifiably include economically favouring those without CER (especially where in many cases, this is not by choice, but due to financial, contractual or physical constraints). This suggests equity should contemplate placing these 'CER have-nots' in no worse a position than they might have been in, but for governments subsidising others' CER investments.

Principle 8: Support innovation and flexibility – by both networks and consumers

There are a number of areas where consumers can be rewarded for making sensible decisions that improve the efficiency of the system, raise the utilisation of the fixed-cost network asset, and lower overall electricity system costs for everyone.

Equally, there are opportunities for networks to invest in and operate their networks to achieve the same outcome.

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[22] Per the AEMC's Energeia report: https://www.aemc.gov.au/energeia-finds-cer-flexibility-could-deliver-45b-benefits-2050

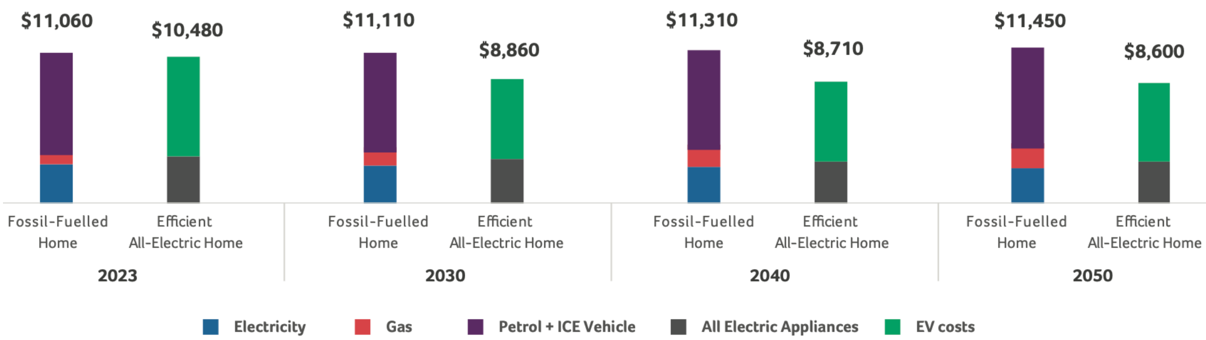
[23] The AEMC's Discussion Paper notes that the ACTUAL network prices signals are typically far in excess of the estimates of genuinely cost-reflective pricing – refer their Figure 10 in appendix D.

Pricing arrangements for consumers and cost-recovery opportunities for networks should reflect and encourage this. These particularly include consumer flexibility in load and exports, and community-scale batteries that can maximise collective local PV self-consumption and PV hosting capacity.

However, the limitations should be recognised, especially in any sensible trade-off against complexity. DNSP-wide tariffs are a blunt instrument when many cost drivers are actually quite localised. Consumers should not face either penalties or rewards for behavioural change that do NOT in fact improve system efficiency and lower system costs.

Principle 9: An overarching incentive to increase electrification

Within electricity pricing, we consider there to be a valid objective to increase electricity's share of the household's overall energy budget. This is based on good evidence that electrification of household and water heating and transportation (via EVs) can represent a lower overall 'energy wallet' for consumers – and with further benefits from decarbonisation consistent with the National Energy Objectives.



Source: ECA Stepping Up report, August 2023, based on 2022 ISP Step Change scenario

As a result, electricity network pricing should at the very least, not discourage electrification. In particular, if network costs at the margin are largely unaffected by consumer usage levels (as we claim is the case) then volumetric pricing appears to run counter to this principle.

Principle 10: Consumers pay for efficient electricity network services, not broad decarbonisation

While there is a good theoretical basis for recovering unpriced externalities (such as the value of emissions reduction) from consumers, this has its limits. The benefits of emission reductions are global and should not be paid only by grid-connected electricity consumers – noting that they have already paid significant environmental costs associated directly with wholesale and small-scale electricity generation, via the RET and retailers' LGC and SRES cost recovery, since 2001.

In addition to that, network pricing based on consumption has clearly supported rooftop PV deployment in the past, with avoided network costs being a significant aspect of the savings consumers enjoy.

Several other elements of network costs are questionable in this respect, including some jurisdictional schemes, and the rebuilding of transmission networks to accommodate large-scale REZ development and enhanced regional interconnection.

If these are arguably wholesale costs (e.g. CFD costs to support renewables and firming capacity), they should be identified as such and might be better recovered (like LGCs are) by retailers for pass-through.

To the extent they are costs over and above (or accelerated) compared with a least-cost electricity system in order to achieve a jurisdictional decarbonisation goal, they should be recovered more generally, from taxpayers.[24]

Principle 11: Don't use network pricing structures to deliver social policy objectives either

Postage-stamp tariffs for small consumers covering large and diverse distribution networks introduce a range of inequities and cross-subsidies.

Some of these are more obvious than others, and some are perhaps more justifiable than others – but in principle, it would be better if EITHER consumers paid a price that reflects the actual cost of "their" network, OR any subsidies that are judged to be warranted were explicitly funded by the appropriate government budget, not all other electricity consumers.

However, we recognise that this is a good example of where one principle will come into conflict with others. This includes the benefits of relatively simplicity in network pricing, as well as generally accepted views of what consumers would consider equitable between urban and rural citizens (refer "the pub test"?).

There may nevertheless be alternative models where the important price signal is not obscured: if distribution network service is more expensive in rural areas, there should be a clear signal to prefer non-network solutions that would lower overall system costs.

Principle 12: Avoid conflating equity with fairness in pricing electricity networks

Energy is an essential service, and fairness of network cost-recovery can be summed up as recognising that all households should have the opportunity to access electricity, regardless of their socioeconomic circumstances.

We note that this assertion risks running headlong into an equity-based view that all consumers should fund a similar network cost, as that implies a much greater burden on households with lower incomes.

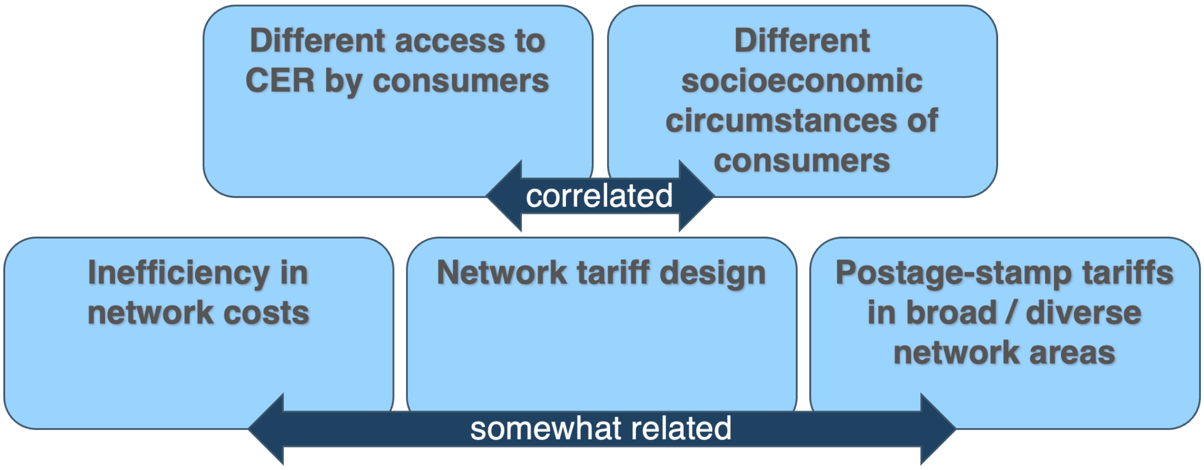
However, the appropriate channel to ensure distributive fairness in society is not network pricing design, it is the tax and social welfare systems. Government should ensure that on a means-tested basis, all households are able to maintain a network connection (even if they might then face significant economic trade-offs about how much electricity they can then afford to consume).

[24] As is the case for the most recent policy of this type, the Commonwealth's Capacity Investment Scheme.

Part 3: How does inequity and unfairness arise?

In supporting a case for change, it is important to clearly identify where equity and fairness problems may exist, their materiality, and whether they are likely to worsen or improve under the status-quo conditions and processes that dictate network cost recovery.

It is helpful to identify five mechanisms by which inequity and unfairness may arise, before considering the specific examples they cause:



A. Inefficiency in network costs

If network costs are higher than they could be for the same level of access to electricity, this is not fair to all consumers, regardless of how those costs are distributed.

This becomes relevant to the extent network pricing and cost-recovery can be designed to improve network utilisation, or lower network costs.

B. Different socioeconomic circumstances of consumers

Unfairness arises when the burden of paying for access to electricity is large relative to household financial resources. It can be exacerbated if network charges are structured as largely fixed (as we in fact propose, driven by equity considerations) because consumers have no means to change their behaviour to avoid such costs, if they wish to maintain that access.

Under our principles, the primary concern in network pricing is equity. Fairness must be addressed at a higher level - in terms of cost-recovery, by considering "who pays"? This allows for means-tested measures, funded outside electricity consumers' wallets by government / taxpayers.

This can ensure fairness without compromising equity.

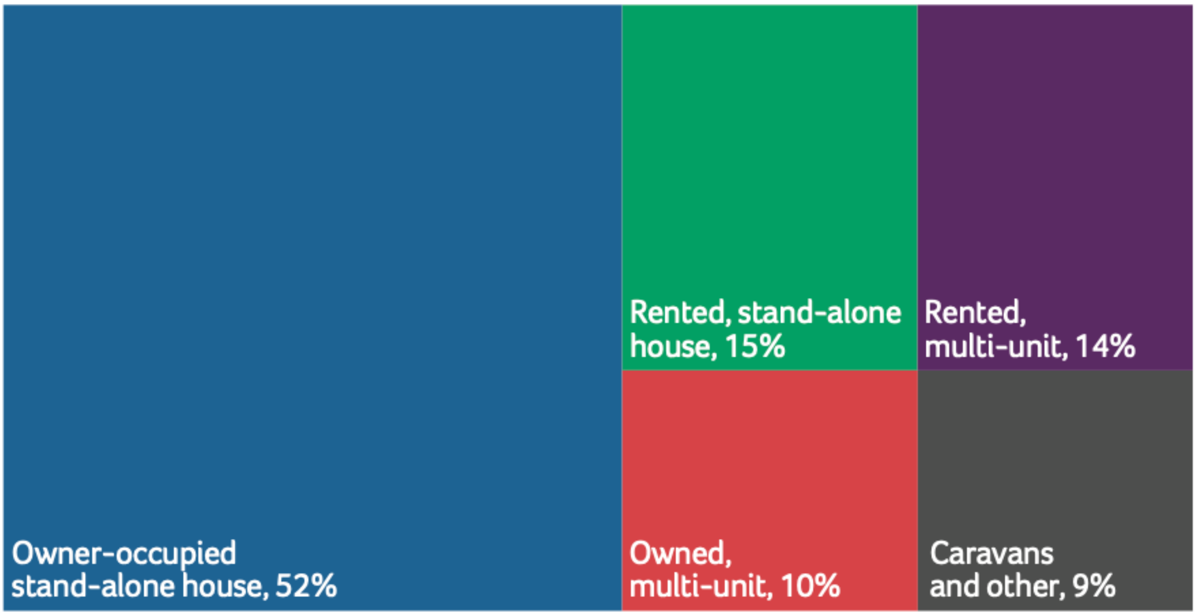
C. Different access to CER by consumers

CER has significantly diversified the ways in which consumers interact with networks, including both the value they derive from them, and the cost they pay to do so based on network tariffs.

If all consumers had equivalent access to CER, ensuring equity would be simpler – but they do not. In some cases, this is a socioeconomic issue (see above), but in many others, it is due to other circumstances such as:

- What type of housing they live in (from freestanding homes to high-rise apartments)
- Whether they own their housing and are free to add CER, or not.

- Whether their housing is otherwise suitable for CER – is the roof shaded? Is there no off-street parking to install an EV charger?



Source: ECA analysis of Census of Population and Housing: Housing data summary, 2021

As a result, ensuring equity includes accommodating these different circumstances of consumers in relation to CER access.

D. The use of postage-stamp tariffs in broad, diverse network areas

Postage-stamp tariff design is the accepted norm, and means within a distribution network, all consumers of a broadly similar type (e.g. residential households) have access to identical network tariffs, regardless of a number of specifics that may indicate their connection's share of network cost may be materially higher or lower than other consumers of that type.

In some cases, tariff design has evolved (or likely will) to ensure inequities and cross-subsidies are not too egregious – such as the introduction of tariffs which sub-segment residential consumers into those with or without solar PV, batteries, controlled loads, or (likely in future) EV chargers.

But in other cases, and especially in certain network areas that are particularly diverse, there will be other areas where postage-stamp tariffs imply cross-subsidies and a degree of inequity among residential consumers – these include:

- **Geography**: the physical network assets required to serve a connection vary widely between CBD, metropolitan, regional and rural areas within a distribution network.
- **Network age**: in older, well-established parts of a network, the historical cost of the asset is relatively low, and has been heavily depreciated. By contrast, where the network is expanding (e.g. to new housing developments) the cost of the physical assets required per connection are relatively high.
- **Network congestion**: some parts of distribution networks are congested in relation to imports and/or PV hosting capacity and require augmentation or other solutions (such as community batteries), others are not congested for the foreseeable future.

In all these cases, postage-stamp tariffs imply cross-subsidies to some extent. In the case of network congestion, they also call into question the validity of cost-reflective pricing based on network-wide demand charges, versus very localised congestion.

To be clear, we do not suggest that a baroque system of locational network tariffs would be a more sensible solution. Nevertheless, there may be other ways in which some elements of these inequities can be mitigated – taking each of the above in turn:

- **Alleviate geography**: Carefully consider cheaper non-network solutions in high cost-to-serve parts of a network, that are not obscured by postage-stamp pricing signals.
- **Alleviate network age**: Closely assess the appropriate level of capital contributions made (e.g. by developers) when new network connections are added.
- **Alleviate network congestion**: Offer relatively bespoke locational opt-ins, where relevant consumers can make an informed choice to alleviate network cost pressures if they have the capacity to do so (in return for a price incentive of this nature).

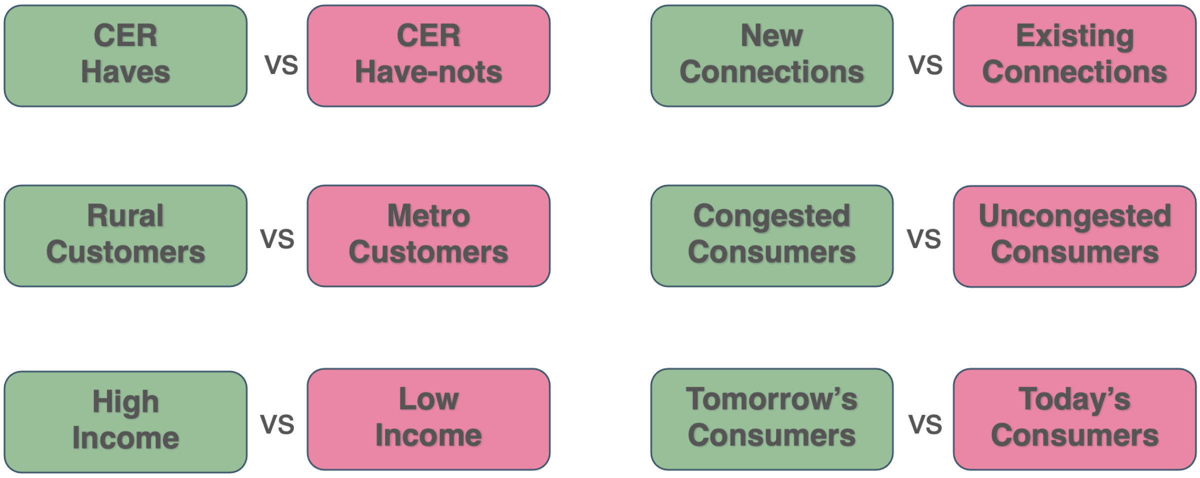
E. Network tariff design

Tariff design can lead to inequity and unfairness. We discuss this in some detail in the following sections, after first considering alternatives to recovering certain costs from small electricity consumers via tariffs at all:

> ***Q5: What are the better forms of tariff design to achieve*** equity?
>
> and
>
> ***Part 6: Network tariff design principles***

Part 4: Inequity Cohorts

In this section we outline a range of potential inequities, unfairness and cross-subsidies that may occur under current and expected network cost recovery mechanisms, by considering a separation of residential electricity consumers into various cohorts.



Not all are necessarily solvable problems, especially not simultaneously – and so while this is a long-list, we later narrow our focus somewhat based on materiality and ease of addressing the challenge as we move towards deeper analysis and recommendations.

Inequity One: CER Haves versus Have-nots

Some consumers have invested in assets (often with subsidies from jurisdictions) that modify their energy consumption and load shape: rooftop PV, batteries, EVs. Many questions arise:

- How much are these consumers paying for network costs, compared with those without CER?
- Do new tariff structures (like two-way charging) sufficiently push back against such customers underpaying relative to non-CER households?
- How much does operation of CER assets drive network cost, in the short and long run?
- To what extent to CER assets benefit non-CER households via lower overall system costs (e.g. via depressing wholesale prices and / or peak demand)?

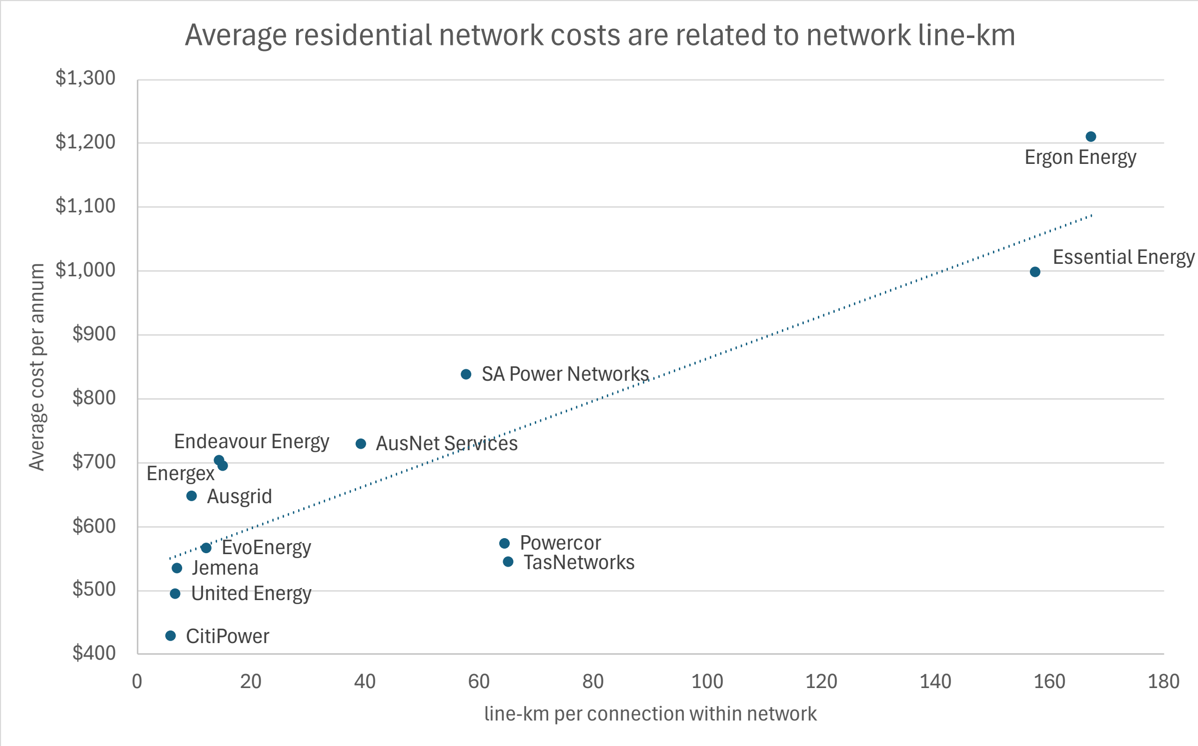
We dedicate substantial analysis to a number of these questions in the Evidence Base, in addition to developing some recommendations which focus on a solution to what appears to be a highly material problem.

Inequity Two: Rural versus Metro

Some consumers live in dense parts of the network (i.e. in cities) where the quantity of network infrastructure required to serve them is relatively low compared with consumers living in more sparsely populated areas.

At the DNSP level, there appears to be a correlation between average network costs, and the physical size of the network (which can be expressed as kilometres of lines per consumer). These linear "overhead assets" are estimated to comprise about 36% of the total Regulated Asset Base for distribution networks.[25]

[25] AER State of the Energy Market 2024, Figure 3.14



Although cost-to-serve differences are clear between networks (for example, CitiPower's $429/yr average for that urban network area, versus Ergon Energy's $1,210/yr average in regional and remote Queensland), this is arguably equitable, at least within the network in question.

But looking across networks, which provide the same services regardless of these differences, there are questions of fairness – is it OK for more rural and remote distribution customers to pay more than city households? Or should our tax and welfare system push back against this disparity, as a form of support for regional and rural citizens?

At least in Queensland, the answer seems to be yes, the government should. Consumers in the Ergon network are subsidised via the State's Uniform Tariff Policy, paying the same as the denser Energex region for their electricity.[26]

Equity issues start to become more concerning in (for example) the SAPN network, with relatively high average costs of $838/yr. This network is very diverse, encompassing both the entire capital city of Adelaide, as well as extensive areas of regional and remote South Australia.

Fortunately for Adelaide electricity consumers, SAPN's longstanding and unique use of 'stobie poles' with their very long asset lives has blunted this impact somewhat and reduced costs for consumers – but apparently the incentives in the system are not sufficient for this innovation to leave the state.[27]

SAPN has about 10 times the line-km per connection of the CitiPower network. Within the SAPN network, postage-stamp tariffs likely mean a significant cross-subsidy is being provided by urban consumers in favour of ex-urban consumers.

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[26] See: https://www.qld.gov.au/housing/buying-owning-home/energy-water-home/electricity/electricity-prices/understand-electricity-system

[27] See section 3.11.2 for the AER's State of the Energy Market 2024 report.

Inequity Three: High versus Low Income

In general, the relative impact of a given network bill on consumers with differing socioeconomic status is an issue we defined as 'fairness', and best managed, in our view, by means-tested concessions via the welfare system.

However, there is another dimension which risks being overlooked. Lower incomes among consumers may also be correlated with living in housing that is less energy inefficient, driving up consumption.

Such consumers may also disproportionately be renters, and/or live in apartments – both of which are additional barriers to adoption of CER (beyond access to the capital to invest). Our Evidence Base makes clear CER-enabled households contribute much less to network cost recovery under current cost-recovery methods.

This highlights the compounding nature of equity and unfairness on consumers in this cohort. For the purposes of this report, we draw the conclusion that it is another reason to push back against consumption-based charging in recovery of network costs.

Inequity Four: New network connections versus Existing

In the Evidence Base, we find network growth is identified as 21% of overall network capital expenditure, - not immaterial, and likely much higher in certain networks hosting more substantial residential growth areas.

Within any network area, some consumers are accessing 'new-build' distribution network assets, associated with residential growth areas and new connections. Others are connected to parts of the network that are decades old, built at much lower historical costs, and largely depreciated.

Postage-stamp tariffs mean all consumers see an average cost across these extremes. New-build network assets (where a network is physically extending to new residential connection areas) therefore drives up regulated asset base-related costs for all consumers compared with a network that does not include such growth areas. There is potentially a cross-subsidy in favour of new-connecting customers, who may not be paying a network cost that reflects the assets recently built to serve them.

However, this will be offset by the spreading of other fixed costs (including operating costs) over a larger number of connections.

While we have not taken the analysis any further quantitatively in this report, we wonder – what is the net effect?

If it means network costs rise for all consumers due to growth in connections (compared with the counterfactual of no new connections), and if the impact is material, then it begs the question: should there be an equalisation payment made at the time of connection via developers?

This would eliminate the cross-subsidy and reveal the true cost of expanded housing development and the infrastructure it requires.

We are well-aware that such an idea is likely to be contested given the challenges faced in housing supply and affordability more generally!

Inequity Five: Congested network areas versus Uncongested

The AEMC Discussion Paper deal with this issue in some detail, and consistently with our view. Within a network area, some consumers are located in areas where there is localised congestion, and looming requirements for augmentation – while other consumers are located in areas where localised congestion is not an issue for the foreseeable future.

When applied as a postage-stamp tariff over the whole network, cost-reflective pricing (such as demand charges) will be either insufficiently signalling to the congested consumers, or improperly constraining / charging uncongested consumers… or both.

This is a very difficult problem (given the complexity implied by any more localised tariffs) and it isn't clear this would pass the pub test with consumers… especially as the future is to some extent unknowable even for network planning engineers.

Rather than seeking to solve this problem, our recommendations take a different direction, towards simplicity, as we instead focus on a larger and more tractable issue between CER Haves and Have-nots.

We do this in a manner that we think treats network congestion and augmentation costs more pragmatically, as something where a 'close enough' alignment with much more impactful wholesale price signals (and the ability of CER to respond to them) is probably adequate.

Inequity Six: Today's versus Tomorrow's consumers

Some network investment being made now will take an extended period of time to reach target utilisation, particularly for transmission. This includes the Integrated System Plan's (ISP) inter-regional projects, and new Renewable Energy Zone transmission investments.

However, accumulation of Regulated Asset Base for these investments will drive higher TUOS pass-through costs for consumers now.

These investments are arguably partly related to the imperative to reduce carbon emissions, not to serve "business as usual" electricity demand – if not in their nature, at least to some extent in their timing, where ISP outcomes are constrained by jurisdictional targets for renewable energy penetration and emissions reductions.

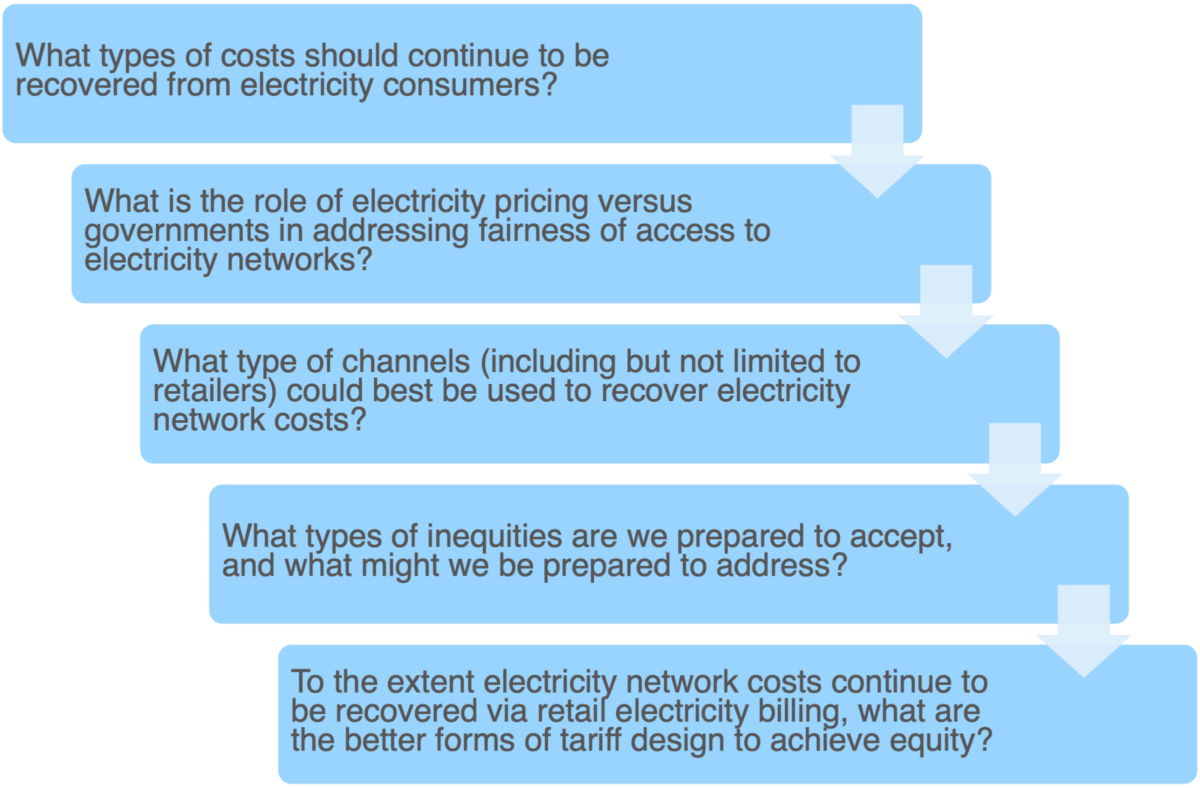
We have previously noted as a principle of equity in network pricing, that electricity consumers should not be assumed to be the source of funding for such policies.

However, it adds insult to injury if today's consumers pay these costs when the underlying assets remain unfinished and then, underutilised for a period.

This becomes a question of "who pays?", outside a network pricing debate. On one view, TUOS pass-through costs of this nature could be discounted to reflect utilisation, with the gap funded via general government revenues and taxpayers as a whole.

Part 5: Network cost recovery concepts

In considering the broad question of how best to recovery network costs – most equitably and fairly – there are several levels of questioning that are useful:



Note that tariff design is the last question we ask, not the first!

Considering these can assist us in proposing better overall approaches.

Q1: What types of costs should be recovered from electricity consumers?

Arguably, electricity consumers might reasonably expect to pay only for the most efficient system that provides them with reliable access to electricity.

This would be an efficient portfolio of:

- consumer energy resources – funded directly by consumers (albeit with a subsidy in many cases)
- wholesale generation capacity
- networks providing metering and (two-way) access
- retail services including billing and risk-management to stabilise the price volatility in wholesale markets (to the extent consumers value that stability).

It <u>does not</u> necessarily include the costs associated with deviating from this most efficient, low-cost system, for the purposes of decarbonisation, to any extent beyond the Value of Emission Reduction[28] – which has been developed by the market bodies for the purposes of including assessment of decarbonisation alongside the other National Energy Objectives – especially cost.

[28] See: https://www.aer.gov.au/system/files/2024-05/AER%20-%20Valuing%20emissions%20reduction%20-%20Final%20guidance%20and%20explanatory%20statement%20-%20May%202024.pdf

Reduction in emissions is a jurisdictional policy choice, to the benefit of all citizens – not just electricity consumers.

It is also a policy choice to require the electricity sector to provide such a significant proportion of the decarbonisation being achieved to date, and in the medium term as we look forward.

Decarbonisation policies for the electricity sector are effected via several schemes, including:

- The national-level LRET and SRES (funding large- and small-scale renewable capacity deployment)
- State / territory initiatives to deploy new renewable energy zones and associated transmission capacity, storage and firming capacity.
- National support for the financing of new regulated transmission, such as the Rewiring the Nation fund.

Notably, the costs of these schemes have often been recovered from electricity consumers via consumption-based pricing, either via retailers (such as the LRET and SRES), or networks (such as the ACT's renewables contracting, or the NSW Electricity Infrastructure Roadmap costs). LRET and SRES costs in particular have represented a significant proportion of total electricity cost for consumers – but will cease in 2030.

An important exception is the Commonwealth's Capacity Investment Scheme, where the contingent costs (payouts under the contracts with supported capacity) will be funded from the Commonwealth's resources – in other words, paid for by taxpayers, not electricity consumers.

In future, the costs of these schemes could be large – especially if wholesale market prices are low, requiring material payments to capacity under the CIS and NSW LTESA contracts.

The scale of new transmission associated with enhanced regional interconnection and the creation of new REZs is also going to be significant.

To some extent, these new costs will represent a higher-cost system, than if decarbonisation policy had not imposed a rapid pace of change on the electricity system – especially via the LRET and SRES. These policies have driven large quantities of renewables in, and consequently destabilised the economics of much thermal capacity, accelerating exits and requiring further rapid replacement of capacity and new transmission investment to cater for it.

So, these costs are not solely driven by increased consumption, or end-of-life asset replacement, or a cost-based transition to cheaper delivered electricity to consumers – but also directly by jurisdictional policy.

Therefore, a portion of these costs reflect a broader social good that all citizens gain reward from, not just energy consumers.

Overall, it seems likely that electricity consumers will be asked to bear most of the burden of decarbonisation, unless more schemes follow the lead of the CIS and shift that burden to taxpayers – where it can be distributed more fairly and progressively via the tax system.

In practice, we think it is worth considering:

- **Partial / initial taxpayer funding of new transmission** network costs associated with the electricity transition, so that element of electricity consumer costs does not rise steeply.
- **Relieving electricity consumers of the burden of decarbonisation-related Jurisdictional Scheme Amounts** that currently are added to network costs for

recovery by most state and territories. This is especially important for large schemes such as the NSW Roadmap[29], or possibly the SA FERM.

It is clear the tax system has limited resources, and an implication might be the need to fund this explicitly.

Something modelled on the Medicare Levy could be considered: an Energy Transition Levy that could relieve electricity consumers of costs and be funded more progressively (e.g. as a percentage of taxable income, for both individuals and businesses).

Q2: Electricity pricing vs. governments in addressing fairness of access?

Generally speaking, designing for equity among electricity consumers may not lead to fairness.

An equitable outcome might recognise that all consumers require network access, and the value they derive is not really related to how much electricity they consume – this would suggest relatively flat, fixed costs of network access. This becomes particularly important when considering the impact of rooftop PV, where some consumers draw much less electricity than others, despite having similar usage.

However, a shift away from volumetric charges to fixed charges would see some vulnerable customers worse off: those who consume little not because they have PV, but because they have limited financial resources to pay the electricity bill.

In this scenario, a re-think of the philosophy of electricity access is probably needed.

All consumers require access to the network – even if they then choose to economise on electricity usage to minimise their consumption charges.

If the equitable outcome is a high fixed charge for network cost recovery (in place of volumetric charges) then fairness would require means-testing and rebates for low-income electricity consumers, to offset that cost – perhaps down towards the level of fixed network charges in today's status quo (about 29% fixed on average over the NEM).

This may be the best way to target existing government investment in bill concessions (alongside investments to subsidise low-income consumers' access to energy efficiency improvements).

Another dimension here would be considering the differential costs of urban versus rural distribution networks.

If there is a philosophy of fairness that implies rural customers should not have to face the burden of a sparse, expensive network needed to serve them, then a similar approach could be applied.

The cheapest network is CitiPower in Melbourne at about $429 per residential connection per annum, and three of the other VIC networks are below $600. The NEM average is about $716, and Ergon is the most expensive at about $1,210.

[29] Even less-ambitiously, JSA recovery should be better-designed. Under the NSW LTESA, the benefits of the assets being supported accrue to all electricity consumers large and small in the state, but recovery via DNSPs relieves the largest transmission-connected consumers of any burden.

Governments (state or Commonwealth) could choose to apply regional funding budgets to rebate consumers in more expensive networks down to the typical level of urban distribution networks – perhaps about $550.

This would provide significant benefits in reduced costs to consumers in Essential, Ergon, AusNet Services and SA Power Networks areas. An approach like this would extend the QLD government's approach to equalising costs between Energex and Ergon areas.

Note that SA Power Networks is a particularly clear example where a network includes both Adelaide and all of regional and rural South Australia – the result a major cross-subsidy being paid by Adelaide consumers to their non-urban peers.

Q3: What type of channels could best be used to recover electricity network costs?

The status quo sees network costs recovered from electricity consumers, and via retail electricity bills.

We canvass a reduction in scope of the costs recovered this way, including via taxpayer funding of electricity transition costs, and means-tested relief from the cost of basic access to electricity networks.

However, we should also consider who may be best placed to recover the basic costs of the network from consumers, as an alternative to retailers. This is particularly relevant if, as we suggest might be appropriate, the majority of network costs are most equitably recovered as a fixed charge per household per annum.

One alternative would be for networks to determine what is a genuinely cost-reflective element of charges, and for these to continue to be passed through via retailers. An example would be the type of two-way time-of-use tariffs applicable to consumers with batteries and / or PV, or the element of ToU or demand charges that networks consider to be cost-reflective in relation to minimising the future investment in the network.

This approach is the essence of our key recommendations.

The residual fixed charges could then be recovered via a number of alternative channels:

- **Via retailers**, but as an explicit "network access fee" on retail bills, helping to make clear to consumers that they are paying a fixed amount unrelated to electricity consumption in order to be connected.
- **From consumers directly as a separate bill** from the network – although this would imply a large duplication of billing infrastructure and operational costs.
- **Via councils**, as an element of rates.

In our view, the last of these – recovery via councils – has a number of interesting potential advantages:

5. **Locational pricing at LGA level:**[30] Local government areas are typically much smaller than DNSP regions and may provide a useful mechanism for networks to apply more localised prices, better reflecting actual network fixed costs. It would be a way to step back from postage-stamp tariffs covering very broad and diverse network areas in some DNSPs – and that could lead to more equitable outcomes.
6. **Consistency with other Council charges:** Rates are accepted as a fixed cost, based on a measure of home value – there is no expectation that ratepayers are charged

[30] We are presuming the DNSP's network area boundaries and congested areas align reasonably with LGA boundaries.

based on their volume of rubbish collected, or whether they actually use the roads. It seems likely ratepayers might accept the same for a network charge – perhaps with some simple variations based on whether it is an import-only connection, or a two-way connection with PV, or an EV charger.

7. **Onus on the property owner:** Rates are the legal responsibility of the property owner, not a tenant. While this can be adjusted via the terms of a rental contract, there may be some public policy attraction to property owners accepting the cost of maintaining access to the electricity network. Tenants would still pay consumption charges and any non-fixed network charges related to their consumption via retailers.
8. **Relatively efficient:**[31] Councils have existing billing systems for all properties. Networks and councils have existing commercial relationships, including the provision of public lighting by networks to councils.

Q4: What types of inequities do we accept, versus seek to address, and how?

In the preceding Part 3, we identified a number of ways in which cohorts of residential electricity consumers can be split, to highlight areas of inequity.

The natural response is to wonder how tariff design might be employed to fix these, but in many cases, we suspect that is not the right path. Instead, we need to:

2. Decide whether the issue is material enough to warrant attention
3. If so, decide whether it is something we are prepared to address – given it will by definition create winners and losers among consumers (or if not, costs for government / taxpayers to compensate losers)
4. If so, decide whether another approach might be superior to using a tariff design – such as investment to fix the problem, or targeted rebates or subsidies to alleviate the inequity.
5. Only then resort to tariff design – for the problems where price signals are most likely to be both effective, and simple enough to be accepted.

As we have worked through this, we find that some areas of inequity do indeed seem necessary to **address via network tariff design** – this especially includes the impact of CER-enabled consumers when pricing is volumetric. Broadly the two main approaches to do so are:

- **Replacing volumetric charges with fixed charges**, so that lower imports by PV-enabled households becomes irrelevant. Fixed charges might arguably vary based on service: we make clear network access is more valuable to a consumer with CER, a battery and an EV than a consumer who only imports.
- Or, **persisting with increasingly powerful time-of-use signals** to try to equalise outcomes – we doubt this is feasible under widespread adoption of batteries.

Others may be **addressed outside tariff design** – for example, any equalisation of costs for regional versus urban consumers could be provided through taxpayers via regional budgets. The cost-reflective alternative would see rural and regional electricity consumers facing substantially higher costs of access to a distribution network.

Some inequities may simply be **too complex to address via tariffs or other interventions** – for example, the very localised nature of network congestion might suggest very balkanised network tariffs, where one house faces a sharp cost-reflective price signal, but a neighbour

[31] There would be some additional billing and co-ordination costs, since CER-related tariffs would still be recovered through retailers.

(on a different substation) does not. Such tariffs would be highly complex to design and explain, would lead to unpredictable outcomes for consumers, and reasonable concerns about fairness: why am I charged so much in peak, just because the network wasn't planned well, or a large load relocated nearby?

Both the regional vs urban and localised congestion problems might be partly addressed by a manageable increase in tariff variation by location – such as could occur via recovering fixed costs via councils, with differences at the LGA level.

Localised congestion is one area where the best answer might be investment: these may be areas best suited to community battery deployment, to smooth network peaks and increase overall CER hosting capacity, while providing benefits (such as avoided augmentation investment) to the system. We do not rule out a role for more targeted, localised opt-in tariffs as part of the solution (with or without an associated community battery involved).

Q5: What are the better forms of tariff design to achieve equity?

From our Evidence Base, we find that the status quo sees about 29% recovery of network costs as fixed charges, 59% recovery based on volume of electricity consumed, and 12% via a blend of volume and demand charges.

This is inconsistent with the fact that the vast majority of network costs are not impacted by either consumption or maximum demand in the short run. They are driven by completely separate matters outside the control of individual consumers including the sunk investment in the network as it is, the cost to maintain it, the cost to extend it to connect new consumers, and the cost of capital in funding the network.

To the limited extent consumer behaviour in importing electricity can influence network costs, this is in relation to the quantity and timing of augmentation – but this is often quite localised and cannot sensibly be reflected in tariffs without extreme variation and complexity, to a level we doubt consumers would accept.

The result is price signals (such as demand charges) that are either irrelevant (because a consumer is not actually in a part of the network nearing a point of congestion) or too weak (even if they are, the price signal is spread too widely across all other consumers).

IF there is a clear case for cost-reflective elements in network tariffs, they should be used, but these will be relatively small for most customers, most of the time.

Before they are used, we should first consider: might other coincident price signals do the job just as well or better – such as price signals retailers will apply on consumption to avoid times of high wholesale costs (and thus high hedging costs for retailers)?

If these are largely consistent with peak demand times for networks, is there really any point overlaying another small, similar network price signal?

This suggests to us that for network tariff design, the philosophy should be that **consumers value having access to the network, and this value is not really related to how much they import**. Just as most network costs are fixed (in terms of consumer behaviour to influence them), so too is the value of a network connection to a consumer largely fixed.

As a result, the outcome of network tariffs should be largely similar costs for all consumers, with any potential variation based on how many dimensions of value they derive from their connections, after considering how their behaviour (especially in relation to operating CER) may impact system costs, positively or negatively.

On this model, a simple import-only connection would be the least annual cost.

Consumers having rooftop PV might pay somewhat more, because they can export and earn a feed-in tariff, among other benefits. A consumer with PV and a BESS may pay more again, because a BESS allows them to benefit from price arbitrage on their exports. Equally, a consumer with an EV derives a further benefit, and might be expected to pay for this.

We evolve this thinking in bringing forward our key recommendations – including a model of a fixed, common Basic Access Charge covering access to imports, with an overlay of CER-related time-of-use tariffs based on cost-reflective behaviour.

Developing our recommendations – Basic Access Charge + CER Tariffs

This thinking leads us to suggest

1. A simple range of **fixed annual costs for network access**, which might be as simple as a single fixed cost for householder import access. A more complex variation might see additional charges for additional CER-related network services enjoyed by relevant consumers, that could be 'earned back' via cost-reflective operation of the CER.
2. **Time-of-use CER network tariffs** which are secondary (overlaid on the BAC) and cost-reflective in relation to the operation of various CER assets in the network, which is likely to dominate cost-driving behaviour by consumers in relation to both network and wholesale costs in future.

An expected outcome would be total annual costs for consumers that reflect the quantity and value of service a consumer enjoys from being connected (not the quantity of electricity they import or export).

Fixed charges have the benefit of extreme simplicity, easily explained to consumers, and objectively provide equity of outcomes, when framed correctly: *I pay the same as my neighbour for the same service of being connected to the network*.

Two key design questions for the BAC + CER Tariff model

One key question is whether the lack of a temporal price signal for consumption would lead to unacceptably inefficient use of the network by consumers. This may not be the case, if:

- there is a strong pass-through of wholesale price signals for consumption at various times by retailers (rather than networks); and
- these are reasonably coincident with peaks and constraints on the network; and
- CER network tariffs provide good incentives for cost-reflective CER behaviour that will ALSO push against consumption peaks – such as charges for daytime PV exports and rewards for evening exports via PV or BESS, offsetting peak demand and congestion.

The last of these looks very much like the emerging two-way secondary tariff designs for PV and BESS households.

Another key question is whether CER-enabled households, when exposed to the CER Tariffs as contemplated, would provide system-wide cost benefits (particularly if their presence and operation depresses wholesale prices, and/or increases network hosting capacity for rooftop PV, and / or peak consumption capacity by netting off local BESS exports against peak consumption).

If so, a valid case could be made that CER-enabled consumers should continue to pay somewhat less than non-CER households.

This requires more evidence – so for now we conceive of the BAC as recovering ~100% of network residual costs, with CER Tariffs, offering charges and credits that net out in aggregate.

Addressing some implications

The most obvious concern is the impact of a uniform fixed charge on households with lower-than-average consumption – as they would pay more than the status-quo, all else equal.

This may well be equitable but becomes a challenge to fairness to the extent these households overlap with lower socioeconomic conditions, and where frugality in electricity use may be a necessity.

We also note that some low-income households in relatively energy-inefficient housing might in fact benefit, if their usage is relatively high and inelastic. The same could be said for larger households, with larger usage – and where there will also be an overlap with lower-income families at a stage of their lives – raising dependent children – when overall living costs are relatively high.

In any case, the introduction of a BAC should also involve careful re-targeting of existing energy concession budgets to means-tested reduction of the BAC where most appropriate, to ensure fairness is not a casualty of better equity.

Part 6: Network tariff design principles

Inevitably, questions of network cost recovery will intersect with assessments of the "best" tariff design. In the NEM's disaggregated market structure, network tariffs will be passed to retailers, who in turn package those as part of the retail tariffs experienced by electricity customers.

Much work has been done on this question – in considering the situation for the NEM, we think it is useful to consider how Severin Borenstein, Professor of Business and Public Policy at U.C. Berkeley's Haas School of Business approached the question in this 2016 paper, The Economics of Fixed Cost Recovery by Utilities[32]. We summarise those views, here, simplified for the case of network costs (not broader electricity costs), and residential consumers.

Borenstein nominates six basic choices to recover residual costs: all those costs above a network's short-run marginal costs (SRMC). SRMC[33] are those costs which consumers might impact via their behaviour, which we contend in the Evidence Base are minor.

Assume that the SRMC of the network is priced appropriately by whatever means but is relatively small compared to the largely fixed residual costs to be recovered. We assess Borenstein's six choices in our context.

1. Consumption-based charges (aka average cost pricing, per kWh, volumetric)

   Recovering fixed costs volumetrically causes deadweight loss (DWL) in economic parlance, by impeding consumption that would otherwise occur at a lower marginal cost.

   Consumption-based pricing has the important benefit of simplicity and is a major part of the current tariff design, as set out in the Evidence Base. This includes both "anytime" flat tariffs, as well as time-of-use consumption charges.

   While there are some superficial attractions, we do not think a consumption-based contribution necessarily represents an equitable distribution of network costs among consumers (remembering that actual consumption costs for electricity ARE volumetric, as the wholesale component of a tariff).

   Different consumers will realise different values from their network connection, but (to take a simple example), the value is that when the light switch is flicked, the lights come on. This is independent of whether the lights are LED or incandescent globes, with very different volumes of electricity consumed.

2. Ramsey pricing

   A Ramsey pricing structure would charge more to those with inelastic demand for a network connection.

   An attraction of such a differentiated price is to avoid volumetric pricing causing elastic demand falling and thus avoiding that DWL.

   However, in the case of network pricing and residential consumers, such an approach becomes binary. Not only would this be complex, but would also raise serious equity and fairness concerns, because very inelastic demand is likely to reside with consumers who

[32] See: https://www.sciencedirect.com/science/article/abs/pii/S1040619016301130

[33] Note that Borenstein includes externalities, such as the value of carbon emissions, in SRMC – so the following does NOT consider the problem in isolation from emission reductions objectives.

have limited resources (financial or otherwise) to invest in the level of CER necessary to go off-grid.

Nor is such an outcome a desirable consequence, in the case of a regulated asset where costs will not fall materially if consumers disconnect.

3. Fixed charges

There are obvious attractions in matching fixed cost recovery with fixed charges (and the status quo already partially does so, as set out in the Evidence Base).

If equity concerns are raised, they would be the converse of the above: those with price-elastic demand cannot benefit from lower costs. However, since we contend the network costs are really fixed, this objection should be resisted. Particularly given the other class of low-volume customers: CER households with significant self-consumption of rooftop PV – one of the key distortions that cost recovery must effectively address.

Fixed charges may also raise some distributional concerns – is it fair that frugal electricity users with low incomes pay the same for network access as more wealthy consumers? However, we argue that a degree of means-tested relief from a fixed network access cost is a better solution that can be made fair, while also being equitable.

One of the concerns with a tariff design that blends fixed daily charges with consumption charges (as any retail tariff is likely to do) is that consumers may fail to distinguish between the fixed and consumption-based components. The tendency may be to cognitively and behaviourally lump this together as an overall volumetric cost.

Given the attractions of matching fixed cost to fixed charges, it is worth considering carefully how this downside could be avoided.

One may be to more clearly separate a “network access cost” charge on a retail bill, as a fixed c/day amount separate from consumption or other tariff components.

Another might be to recover network access costs as a fixed amount by a separate channel, such as council rates (similar to land tax or other services / levies).

4. Tiered pricing (Inclining or Declining Block Tariffs)

These sit in between consumption-based charges and fixed charges as a hybrid – a customer’s contribution to fixed cost recovery is now related to consumption, but not exactly proportional to it.

With a **declining block** structure, the higher-volume units can be priced close to SRMC, minimising DWL if many consumers are there at the margin - but clearly that simplifies back to just a fixed charge plus a SRMC volumetric charge at the extreme – so why not just do that?

It is difficult to see why a declining block tariff would more attractive than either volumetric or fixed charges on equity or fairness grounds, unless it DOES trend back that way, leaving few if any customers to face the high price at the margin of their consumption!

It is very hard to make a case for **inclining block** tariffs at all in the case of network cost recovery from residential consumers in the NEM. Distributional arguments could be made in favour of inclining block structures, if they were viewed as a means to impose fairness, by charging larger (presumably wealthier) consumers more at the margin.

Whether the proxy of consumption for capacity to pay was ever valid is unclear, but the emergence of CER-connected households with low import volumes completely negates the argument.

5. Minimum bills

A minimum bill structure looks like a fixed charge including some 'free' electricity.

It is really an extreme version of an inclining block tariff, with the same problems noted above.

If the quantity (or value) of included electricity is low, the structure does little in terms of customer behaviour, because almost every consumer uses more, and so pays at the margin.

If it is high, the structure creates zero-cost consumption incentives (below SRMC) which creates DWL.

Overall, this is economically inferior to a smaller fixed charge to recover the residual costs, plus charging at the SRMC for every kWh over and above those residual costs.

6. Demand charges

Demand charges are a popular feature of so-called "cost-reflective" network tariff designs, but Borenstein sets out a number of good reasons to be sceptical in general:

- The structure initially made some sense when "dumb" meters could only identify cumulative consumption and peak period demand (but not when the peak occurred) – when they were the only alternative to a flat anytime consumption-based tariff.
- When meters are upgraded to "smart", the potential for more time-related demand charges are eclipsed (in Borenstein's view) by the advantages of time-of-use consumption pricing.
- A customer's peak demand in a billing period may be a poor proxy for system peak demand. This can be improved when smart meters allow for peaks to be assessed in (for example) only evening peak hours, not anytime – but that is often NOT how tariffs are structured.
- A demand charge MIGHT relate to the capital cost of the capacity of the connection, <u>but it is sunk</u>. … a fixed charge related to demand capacity would make more sense if there was a desire to distinguish pricing based on demand capacity.
- However (and importantly in our specific case), Borenstein does not rule out a role for demand charges in relation to look-forward avoided capex opportunities.

Implications of Borenstein's analysis for recovery of network costs

In summary, when we consider Borenstein's approach in the context of recovering the largely fixed costs of distribution networks from residential consumers, we have a rough roadmap.

<u>Recover SRMC with appropriate pricing signals</u>

Firstly, determine actual SRMC incurred by the network, and what the drivers are – then seek to recover it. This might be a time-of-use volumetric or demand charge, <u>but it is likely to be small</u> relative to the residual, largely fixed costs.

In doing so, be prepared to include the SRMC of externalities incurred, which might include carbon costs (this closes the gap to total costs, and is good practice because it is economically efficient).

We think this second element is interesting: a carbon charge could reduce over time as the grid decarbonises… but then fixed charges have to rise. This could be a means to smooth an introduction of largely fixed charges over time.

Recover Residual Costs with fixed charges

In any case, after dealing with the relatively minor issue of SRMC, a large “gap” of residual fixed costs remains to be recovered.

Using a consumption charge (as is the status quo to a large extent) may have initial appeal but it creates DWL and distorts consumer behaviour… especially when there are alternatives (e.g. CER, gas, EV).

Applying fixed charges instead might appear to create equity concerns relatively to a status-quo with significant consumption charges, but these objections are less-likely to be sustained given the impact of CER. Address distributional concerns with targeted means-tested programs.

To create some distinction, fixed charges within a network area could possibly be set with a relationship to value from the network – such as peak import or export capacity provided. However, this adds complexity is a risk, along with the reasonable objection that a consumer cannot ‘downgrade’ their capacity if they don’t need it.

However, a simple version might make some sense (e.g. a higher fixed charge for a two-way CER-based connection).

In any case, avoid demand charges (unless closely related to SMRC recovery), tiered pricing and minimum bills.

In developing our recommendations, we have kept these implications in mind.

Part 7: Evidence Base for the status quo in DNSP cost recovery

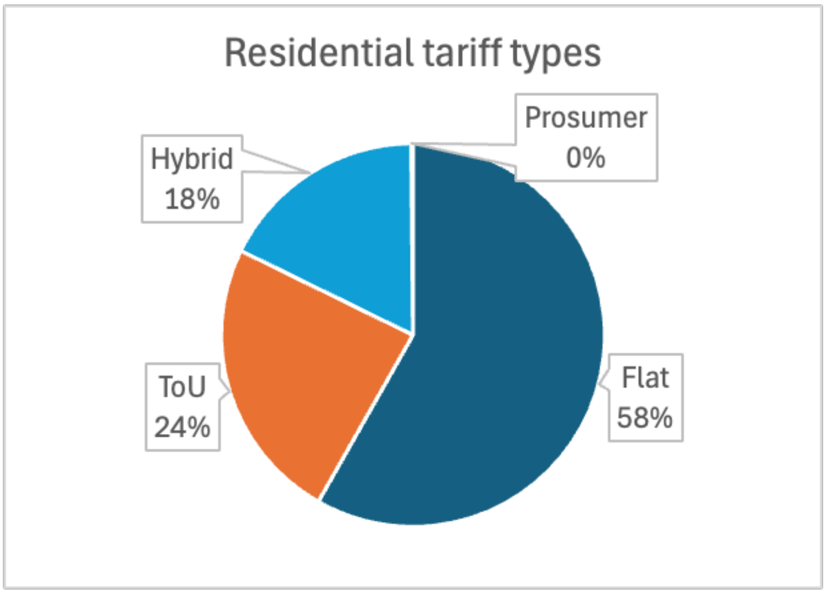
Here we assess the quantity of customers, energy consumption and dollars associated with common classes of DNSP tariffs.

The simplified classes of tariffs we consider are:

Simplified tariff class	
Flat	Consisting of only fixed c/day and volumetric c/kWh charges that **do not vary with time of day or season**. Includes some inclining block tariffs. Older-style tariffs applicable to 'dumb' meters, with residential consumers generally being migrated to alternative 'cost-reflective' tariffs at a pace dictated by smart metering rollout, DNSP tariff allocation policies, and the actions of retailer and consumers where there is choice (e.g. opt-in, opt-out)
Time of Use (ToU)	Consisting of fixed c/day and volumetric c/kWh charges that **vary with time of day and/or season.**
Hybrid Demand	Tariffs with elements of both ToU and Demand charges (i.e. based on a peak kW usage). There are no pure demand tariffs for residential consumers in the NEM.
Prosumer	Here, we refer to a tariff including two-way charges associated with exports based on time of day and/or season (e.g. a charge to export during daytime, and/or a negative charge to export during evening). These are relatively rare at present in the NEM given two-way pricing is a recent innovation but expected to increase in penetration.

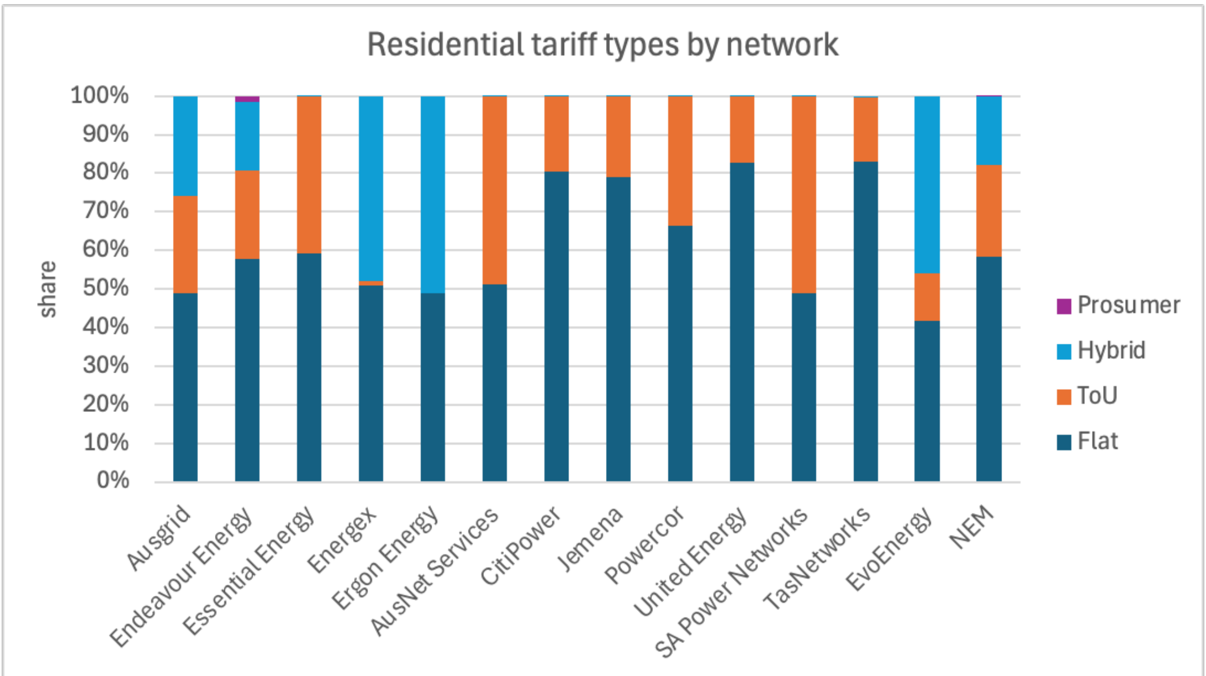
We have categorised all residential tariffs from the 13 DNSPs into this simplified framework.

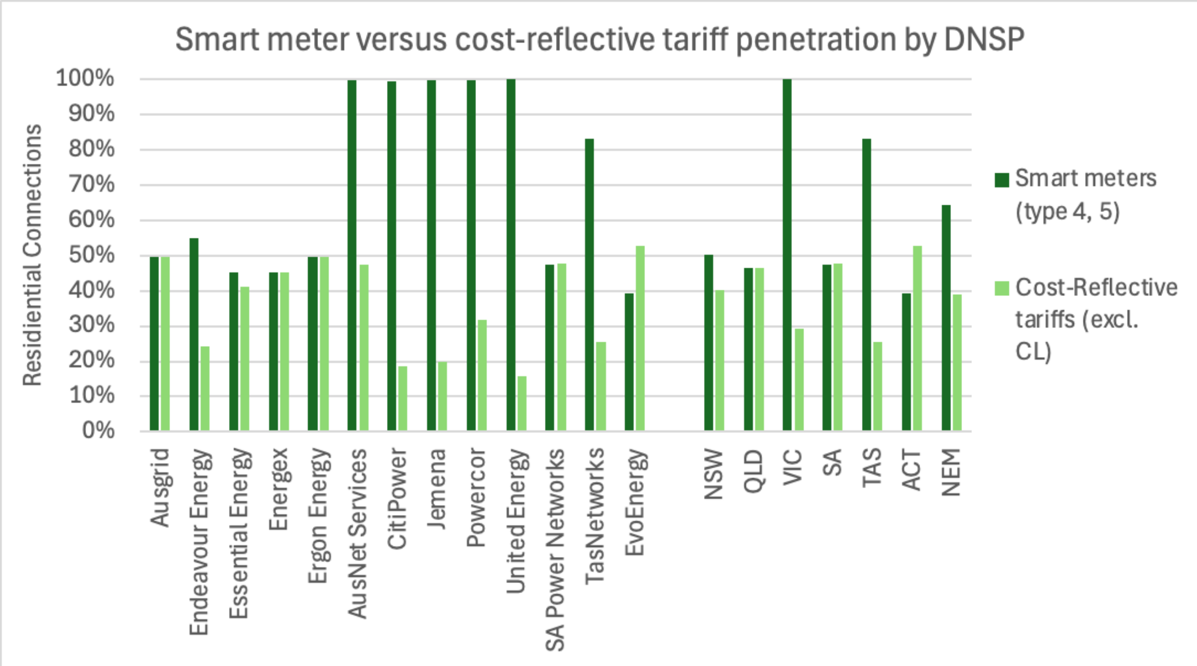
Tariff types in use



A majority of residential customers remain on flat tariffs, with substantial numbers on ToU and Hybrid Demand tariffs. Hybrid tariffs are most prevalent in Queensland and the ACT.

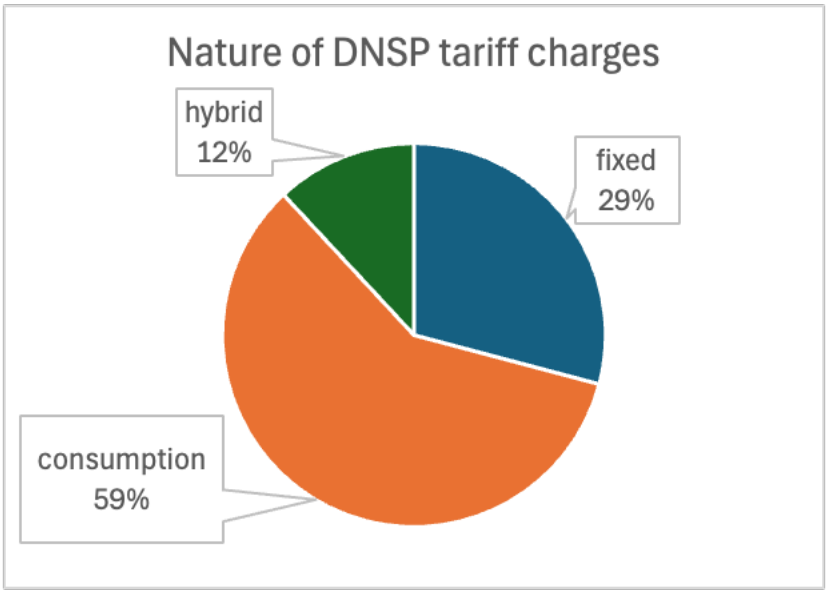
Few customers have taken up, or been placed on, Prosumer tariffs at this stage – only around 14,000 in the Endeavour network.





Any tariff other than Flat requires smart metering, and it is notable that despite Victoria's early rollout of smart meters, the move away from flat tariffs is notably slow in several of the Victorian networks.

Aggregate nature of charges

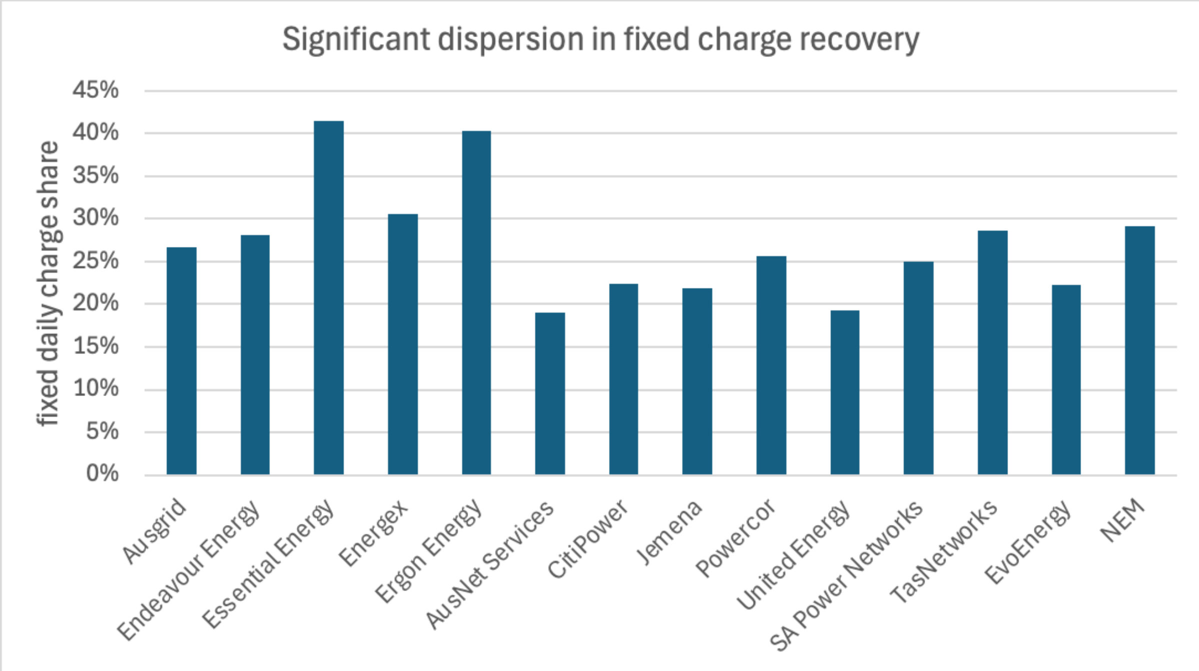


As a result, residential consumers are mostly paying for networks costs volumetrically – 59% of cost recovery is based on the quantity of energy they import via their network connection, and a further 12% are recovered via a hybrid combining consumption and demand charges.

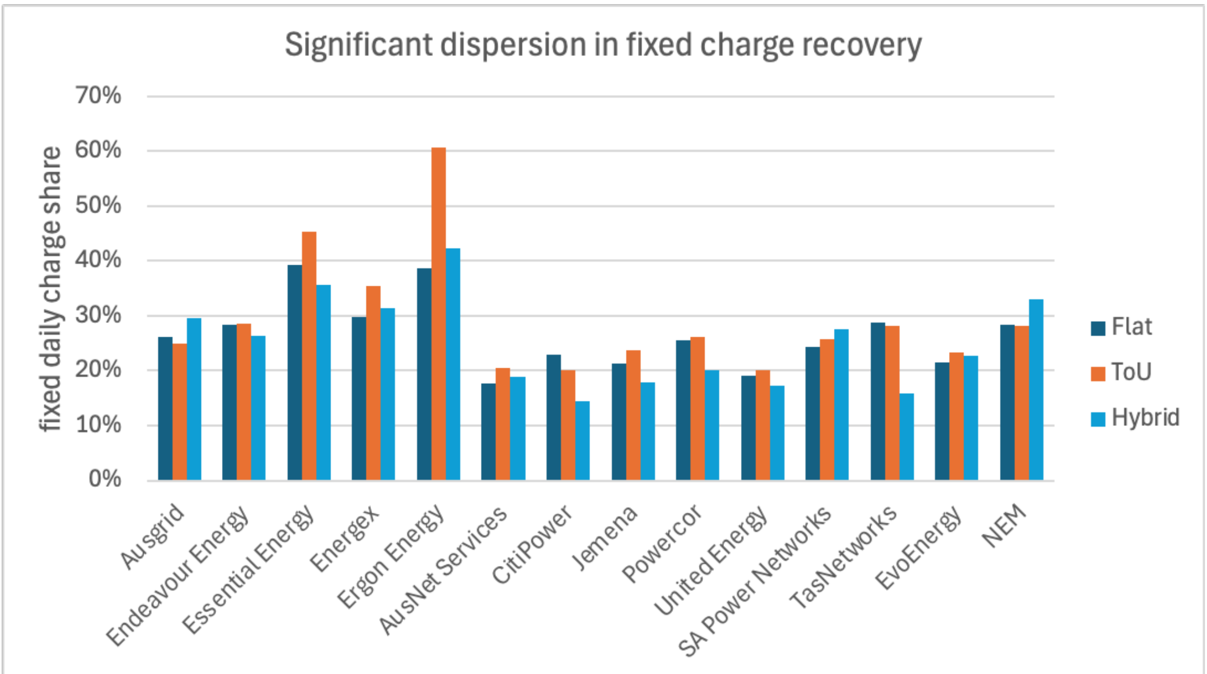
29% of the costs are recovered as fixed daily charges. While this is the NEM average, we observe significant dispersion between DNSPs.

Wide variation in proportional recovery from fixed charges

Within the 29% NEM average, two Victorian networks recover only 19% of their costs from residential customers via fixed charges, whereas at the other extreme, Ergon in Queensland and Essential in NSW recover more than double this – 40% and 41% respectively.



While not a clear trend, it is interesting that the lowest fixed charge recoveries are in very dense urban networks, with the highest in physically very large network areas.



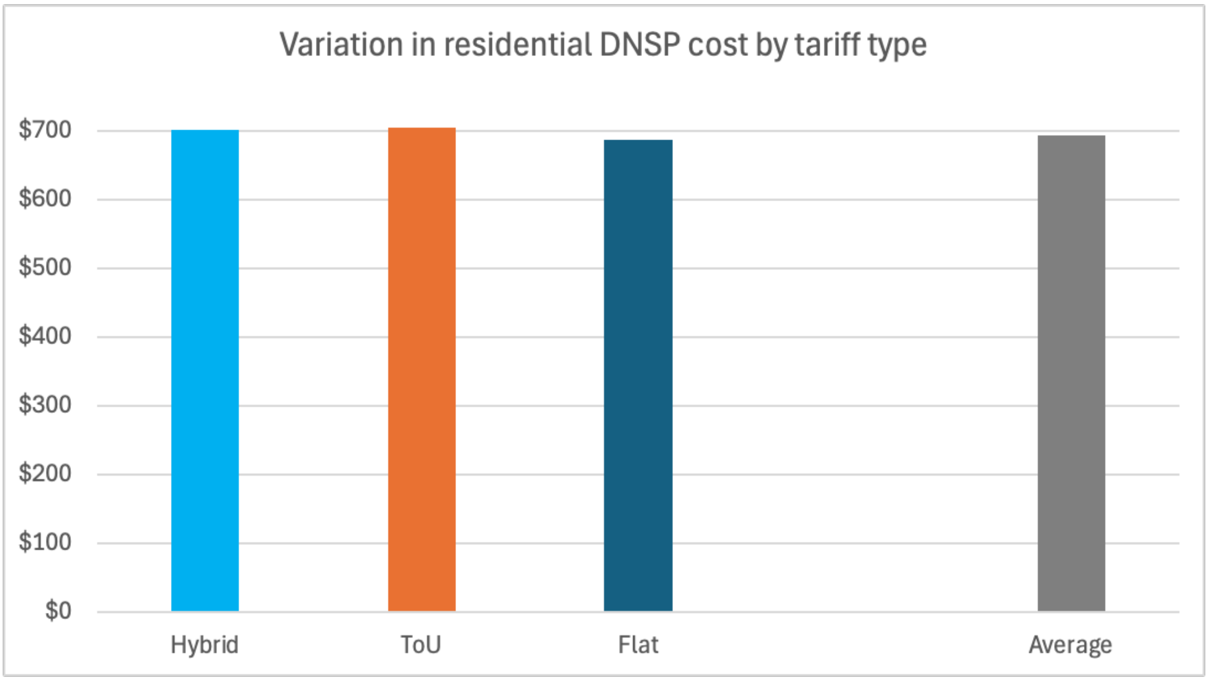
Taking a look one layer below this, we can see that the driver for larger fixed charges at Essential and Ergon appears to be from their ToU-style tariffs – with Ergon recovering over 60% of its ToU tariffs via fixed daily charges. Conversely at CitiPower, only 14% of their hybrid tariff revenue comes from fixed charge recovery.

At NEM level, hybrid tariffs – on average – recover 33% as fixed, versus 28% for flat or ToU.

This indicates migration away from flat tariffs may also be leading to proportionally greater recovery of networks' residual costs (which we have shown are largely fixed in nature) from fixed charges, albeit not in the case of ToU tariffs.

Total cost variation by tariff type

Overall for the NEM, there is no clear distinction in overall cost recovery based only on the type of tariff. Aggregated across all residential consumers on these tariffs (as reported in the DNSPs' latest RINs), the outcomes are very similar on average.



Despite the differences in these three tariff structures, on average residential consumers pay very similar total costs, regardless of whether they are facing Flat, ToU or Hybrid tariffs. Overall, Flat tariffs are slightly lower-cost ($686) than the alternatives ($701 for Hybrid, $705 for ToU) – note we are excluding the controlled load tariffs here, so the NEM average is $692.

There is no apparent cause for concern regarding equity of network cost recovery purely based on what type of tariff consumers are exposed to, on average.

However, averages mask outcomes between groups of consumers, and this is where the focus on equity becomes important.

One example of this is relatively 'peaky' consumers, who are likely to pay more under a ToU tariff than a flat tariff.

That is especially so if this evening demand is inflexible in time, inelastic to price, and cannot (for whatever reason) be managed by the addition of rooftop PV and a BESS to offset evening peak imports and minimise ToU-based network charges.

This is why we need to go deeper in our equity-focused analysis.

Part 8: Testing specific tariff structures versus residential CER cases

We have chosen to take a deeper look at the network costs a variety of representative residential households will pay, based on current, specific residential tariffs for a selection of DNSPs.

Modelling approach

For the mechanics of this analysis, we have used the underlying simulation provided by the 'Sunulator' model.[34]

The results we show here are our analysis of the one year of half-hourly outputs in relation to consumption, PV generation, battery flows and grid imports / exports, with each half-hour of grid imports and exports being passed through the network tariff to accumulate an annual network cost for that case. PV irradiance is for Sydney.

Household consumption

For the household cases, we have used two consumption scenarios of 8.4MWh/yr and 5.0MWh/yr. These could represent a relatively large household electricity usage, and a more typical case.

The Sunulator model includes a representative annual residential consumption profile, in half-hourly intervals, which we have adopted. This is a 'double peak' load shape, as shown below (for the 8.4MWh case). The 5.0MWh case is proportionally scaled to this.

[34] Available for public use here: https://renew.org.au/resources/sunulator/

CER scenarios

We assess a range of consumer energy resources interacting with this consumption profile.

8.4MWh consumption	5.0MWh consumption
No PV or BESS	No PV or BESS
5kW PV	5kW PV
5kW PV + 5kWh BESS	5kW PV + 5kWh BESS
10kW PV	10kW PV
10kW PV + 5kWH BESS	10kW PV + 5kWH BESS
10kW PV + 13kWh BESS	10kW PV + 13kWh BESS

In the modelling, the BESS operation is simply time-shifting available excess PV generation for the household each day. There is no optimisation of any tariff price signals – if there were, we expect the result would show a greater financial advantage to the BESS-enabled cases.

Tariff cases

We have chosen the available tariffs from the NSW DNSPs (Ausgrid, Endeavour and Essential) as well as SA Power Networks. We have excluded tariffs with a demand element for modelling simplicity, and so we are generally examining:

1. **Flat tariffs** – daily charge plus c/kWh at any time
2. **ToU tariffs** – daily charge plus a c/kWh that varies with time of day and in some cases, season.
3. **Two-way tariffs** – which overlay charges and credit related to grid exports.

For the flat tariffs, the parameters are:

DNSP	Code	c/day	c/kWh
Ausgrid	EA010	40.8	10.8
Essential	BLNN2AU	111.3	12.7
Endeavour	N70	52.1	10.1
SAPN	RSR	63.7	15.4

For time of use tariffs, the parameters are:

DNSP	Code	c/day	c/kWh
Ausgrid	EA025	50.0	See heatmap
Essential	BLNT3AL	111.3	See heatmap
Essential	BLNRSS2	111.3	See heatmap
Endeavour	N71	52.1	See heatmap
SAPN	RTOU	63.7	See heatmap

Note Essential have two Tou tariff structures, with BLNRSS2 offering a 'sunsoaker' price signal.

Ausgrid ToU heatmap

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Feb	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Mar	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Apr	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
May	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Jun	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Jul	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Aug	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Sep	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Oct	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Nov	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7
Dec	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	26.9	26.9	26.9	26.9	26.9	26.9	4.7	4.7	4.7

Essential ToU heatmap (BLNT3AL)

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Feb	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Mar	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Apr	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
May	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Jun	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Jul	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Aug	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Sep	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Oct	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Nov	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403
Dec	5.403	5.403	5.403	5.403	5.403	5.403	5.403	13.16	13.16	9.503	9.503	9.503	9.503	9.503	9.503	9.503	9.503	13.16	13.16	13.16	9.503	9.503	5.403	5.403

Essential ToU heatmap – (BLNRSS2 'sunsoaker')

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Feb	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Mar	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Apr	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
May	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Jun	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Jul	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Aug	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Sep	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Oct	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Nov	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403
Dec	5.403	5.403	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	5.403	5.403	5.403	5.403	5.403	15.87	15.87	15.87	15.87	15.87	15.87	15.87	5.403	5.403

Endeavour ToU heatmap

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	20.8	20.8	20.8	20.8	9.7	9.7	9.7	9.7
Feb	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	20.8	20.8	20.8	20.8	9.7	9.7	9.7	9.7
Mar	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	20.8	20.8	20.8	20.8	9.7	9.7	9.7	9.7
Apr	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
May	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
Jun	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
Jul	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
Aug	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
Sep	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
Oct	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	13.0	13.0	13.0	13.0	9.7	9.7	9.7	9.7
Nov	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	20.8	20.8	20.8	20.8	9.7	9.7	9.7	9.7
Dec	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	3.0	3.0	3.0	3.0	9.7	9.7	20.8	20.8	20.8	20.8	9.7	9.7	9.7	9.7

SAPN ToU heatmap

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Feb	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Mar	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Apr	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
May	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Jun	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Jul	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Aug	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Sep	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Oct	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Nov	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
Dec	10.0	10.0	10.0	10.0	10.0	10.0	20.1	20.1	20.1	20.1	5.0	5.0	5.0	5.0	5.0	5.0	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1

For two-way tariffs, the parameters are:

DNSP	Code	c/day	c/kWh import	BEL kWh/d	c/kWh export
Ausgrid	EA029	As for EA025	As for EA025	6.85	See heatmap
Essential	BLTTEX1	As for BLNRSS2	As for BLNRSS2	7.5	See heatmap
Endeavour	N61	As for N71	As for N71	4.8	See heatmap
Endeavour	N95	143.0	See heatmap	4.8	See heatmap
SAPN	RSELE	63.7	See heatmap	9	See heatmap

Note Endeavour have two tariff structures of this type, with N61 called ‘prosumer’ and N95 ‘residential storage’. Several of these tariffs are secondary tariffs, which we have modelled on top of the noted primary tariffs in the table above.

The upper part of the heatmaps which follow are the peak credits, the lower part are the ‘sun soaker’ charges (subject to a Basic Export Limit).

Ausgrid two-way heatmap

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan																	-2.4	-2.4	-2.4	-2.4	-2.4			
Feb																	-2.4	-2.4	-2.4	-2.4	-2.4			
Mar																	-2.4	-2.4	-2.4	-2.4	-2.4			
Apr																	-2.4	-2.4	-2.4	-2.4	-2.4			
May																	-2.4	-2.4	-2.4	-2.4	-2.4			
Jun																	-2.4	-2.4	-2.4	-2.4	-2.4			
Jul																	-2.4	-2.4	-2.4	-2.4	-2.4			
Aug																	-2.4	-2.4	-2.4	-2.4	-2.4			
Sep																	-2.4	-2.4	-2.4	-2.4	-2.4			
Oct																	-2.4	-2.4	-2.4	-2.4	-2.4			
Nov																	-2.4	-2.4	-2.4	-2.4	-2.4			
Dec																	-2.4	-2.4	-2.4	-2.4	-2.4			
Jan											1.2	1.2	1.2	1.2	1.2									
Feb											1.2	1.2	1.2	1.2	1.2									
Mar											1.2	1.2	1.2	1.2	1.2									
Apr											1.2	1.2	1.2	1.2	1.2									
May											1.2	1.2	1.2	1.2	1.2									
Jun											1.2	1.2	1.2	1.2	1.2									
Jul											1.2	1.2	1.2	1.2	1.2									
Aug											1.2	1.2	1.2	1.2	1.2									
Sep											1.2	1.2	1.2	1.2	1.2									
Oct											1.2	1.2	1.2	1.2	1.2									
Nov											1.2	1.2	1.2	1.2	1.2									
Dec											1.2	1.2	1.2	1.2	1.2									

Essential two-way heatmap

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan																		-13.6	-13.6	-13.6				
Feb																		-13.6	-13.6	-13.6				
Mar																		-13.6	-13.6	-13.6				
Apr																		-13.6	-13.6	-13.6				
May																		-13.6	-13.6	-13.6				
Jun																		-13.6	-13.6	-13.6				
Jul																		-13.6	-13.6	-13.6				
Aug																		-13.6	-13.6	-13.6				
Sep																		-13.6	-13.6	-13.6				
Oct																		-13.6	-13.6	-13.6				
Nov																		-13.6	-13.6	-13.6				
Dec																		-13.6	-13.6	-13.6				
Jan											1.2	1.2	1.2	1.2	1.2									
Feb											1.2	1.2	1.2	1.2	1.2									
Mar											1.2	1.2	1.2	1.2	1.2									
Apr											1.2	1.2	1.2	1.2	1.2									
May											1.2	1.2	1.2	1.2	1.2									
Jun											1.2	1.2	1.2	1.2	1.2									
Jul											1.2	1.2	1.2	1.2	1.2									
Aug											1.2	1.2	1.2	1.2	1.2									
Sep											1.2	1.2	1.2	1.2	1.2									
Oct											1.2	1.2	1.2	1.2	1.2									
Nov											1.2	1.2	1.2	1.2	1.2									
Dec											1.2	1.2	1.2	1.2	1.2									

Endeavour two-way heatmap (N61)

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan																	-11.0	-11.0	-11.0	-11.0				
Feb																	-11.0	-11.0	-11.0	-11.0				
Mar																	-11.0	-11.0	-11.0	-11.0				
Apr																	-3.3	-3.3	-3.3	-3.3				
May																	-3.3	-3.3	-3.3	-3.3				
Jun																	-3.3	-3.3	-3.3	-3.3				
Jul																	-3.3	-3.3	-3.3	-3.3				
Aug																	-3.3	-3.3	-3.3	-3.3				
Sep																	-3.3	-3.3	-3.3	-3.3				
Oct																	-3.3	-3.3	-3.3	-3.3				
Nov																	-11.0	-11.0	-11.0	-11.0				
Dec																	-11.0	-11.0	-11.0	-11.0				
Jan											1.8	1.8	1.8	1.8										
Feb											1.8	1.8	1.8	1.8										
Mar											1.8	1.8	1.8	1.8										
Apr											1.8	1.8	1.8	1.8										
May											1.8	1.8	1.8	1.8										
Jun											1.8	1.8	1.8	1.8										
Jul											1.8	1.8	1.8	1.8										
Aug											1.8	1.8	1.8	1.8										
Sep											1.8	1.8	1.8	1.8										
Oct											1.8	1.8	1.8	1.8										
Nov											1.8	1.8	1.8	1.8										
Dec											1.8	1.8	1.8	1.8										

Endeavour ToU plus two-way heatmap (N95) – upper section here is the ToU imports

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	12.7	12.7	12.7	12.7	1.7	1.7	1.7	1.7
Feb	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	12.7	12.7	12.7	12.7	1.7	1.7	1.7	1.7
Mar	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	12.7	12.7	12.7	12.7	1.7	1.7	1.7	1.7
Apr	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
May	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
Jun	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
Jul	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
Aug	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
Sep	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
Oct	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	5.0	5.0	5.0	5.0	1.7	1.7	1.7	1.7
Nov	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	12.7	12.7	12.7	12.7	1.7	1.7	1.7	1.7
Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7					1.7	1.7	12.7	12.7	12.7	12.7	1.7	1.7	1.7	1.7
Jan																	-11.0	-11.0	-11.0	-11.0				
Feb																	-11.0	-11.0	-11.0	-11.0				
Mar																	-11.0	-11.0	-11.0	-11.0				
Apr																	-3.3	-3.3	-3.3	-3.3				
May																	-3.3	-3.3	-3.3	-3.3				
Jun																	-3.3	-3.3	-3.3	-3.3				
Jul																	-3.3	-3.3	-3.3	-3.3				
Aug																	-3.3	-3.3	-3.3	-3.3				
Sep																	-3.3	-3.3	-3.3	-3.3				
Oct																	-3.3	-3.3	-3.3	-3.3				
Nov																	-11.0	-11.0	-11.0	-11.0				
Dec																	-11.0	-11.0	-11.0	-11.0				
Jan											1.8	1.8	1.8	1.8										
Feb											1.8	1.8	1.8	1.8										
Mar											1.8	1.8	1.8	1.8										
Apr											1.8	1.8	1.8	1.8										
May											1.8	1.8	1.8	1.8										
Jun											1.8	1.8	1.8	1.8										
Jul											1.8	1.8	1.8	1.8										
Aug											1.8	1.8	1.8	1.8										
Sep											1.8	1.8	1.8	1.8										
Oct											1.8	1.8	1.8	1.8										
Nov											1.8	1.8	1.8	1.8										
Dec											1.8	1.8	1.8	1.8										

SAPN ToU plus two-way heatmap) – upper section here is the ToU imports

mth	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Jan	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Feb	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Mar	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Apr	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
May	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Jun	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Jul	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Aug	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Sep	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Oct	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Nov	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Dec	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	3.0	3.0	3.0	3.0	3.0	3.0	10.1	33.9	33.9	33.9	33.9	10.1	10.1	10.1
Jan																		-12.9	-12.9	-12.9	-12.9			
Feb																		-12.9	-12.9	-12.9	-12.9			
Mar																		-12.9	-12.9	-12.9	-12.9			
Apr																								
May																								
Jun																								
Jul																								
Aug																								
Sep																								
Oct																								
Nov																		-12.9	-12.9	-12.9	-12.9			
Dec																		-12.9	-12.9	-12.9	-12.9			
Jan											1.0	1.0	1.0	1.0	1.0	1.0								
Feb											1.0	1.0	1.0	1.0	1.0	1.0								
Mar											1.0	1.0	1.0	1.0	1.0	1.0								
Apr											1.0	1.0	1.0	1.0	1.0	1.0								
May											1.0	1.0	1.0	1.0	1.0	1.0								
Jun											1.0	1.0	1.0	1.0	1.0	1.0								
Jul											1.0	1.0	1.0	1.0	1.0	1.0								
Aug											1.0	1.0	1.0	1.0	1.0	1.0								
Sep											1.0	1.0	1.0	1.0	1.0	1.0								
Oct											1.0	1.0	1.0	1.0	1.0	1.0								
Nov											1.0	1.0	1.0	1.0	1.0	1.0								
Dec											1.0	1.0	1.0	1.0	1.0	1.0								

Summarising the results

The following charts present the results, as total annual network costs recovered from each of the 12 household cases (two consumption scenarios, with six CER scenarios).

From these modelling outcomes we can extract some very clear conclusions:

The more energy households consume, the more they pay.

As expected, household consumption drives network cost contribution, due to the majority of charges being recovered from volumetric elements of the tariffs (in the absence of any CER). Higher-consumption households pay more network costs, all else equal.

As we have noted, high consumption is not necessarily a good proxy for recovering network costs progressively, not only due to the distortions of CER, but also because of any linkage between poor household energy-efficiency that may be associated with status as a rental occupant rather than a landlord, or simply lacking the financial resources to upgrade insulation, appliances etc.

The more CER households deploy, the less they pay

There is a very clear downward trend in these charts from left to right, as the quantity of CER increases.

Despite enjoying a broader range of services thanks to their connection to the network, CER-enabled households contribute much less to network cost recovery.

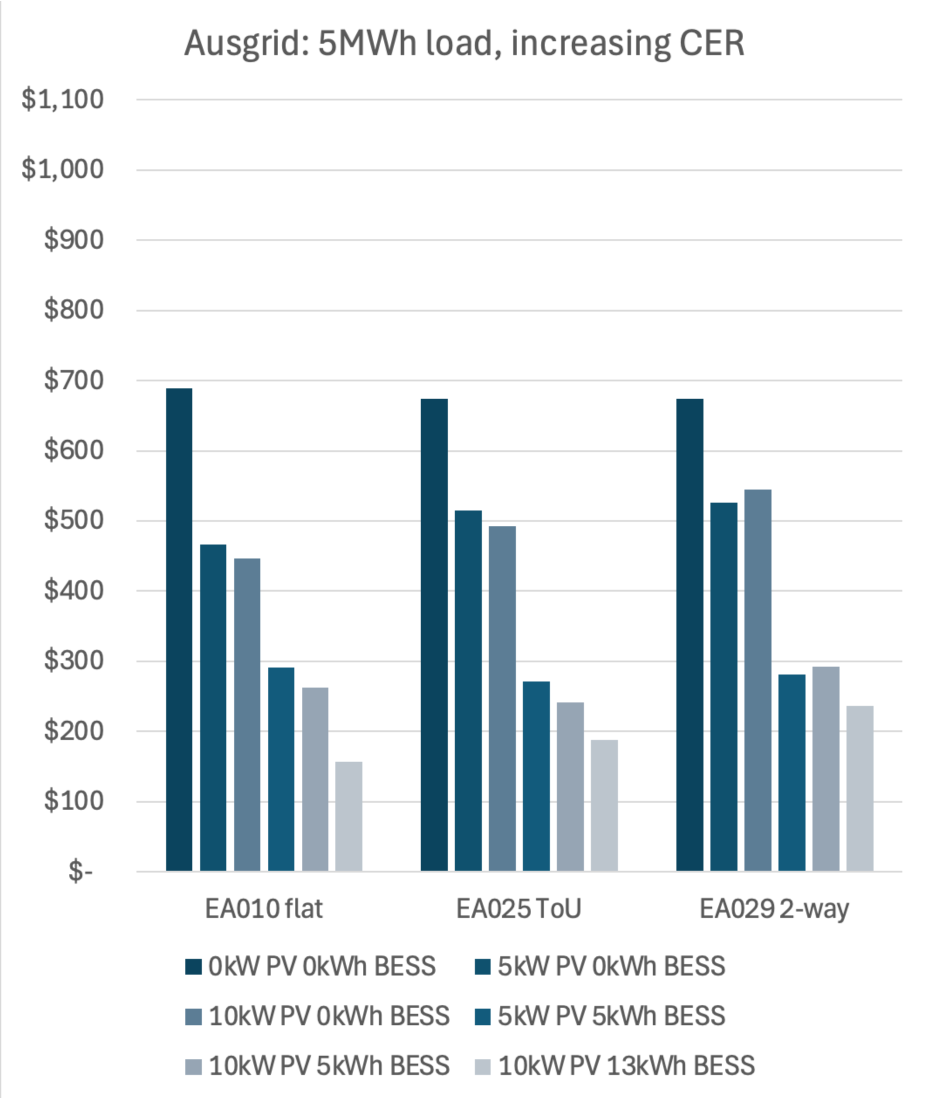
Batteries dramatically decrease network cost exposure for households

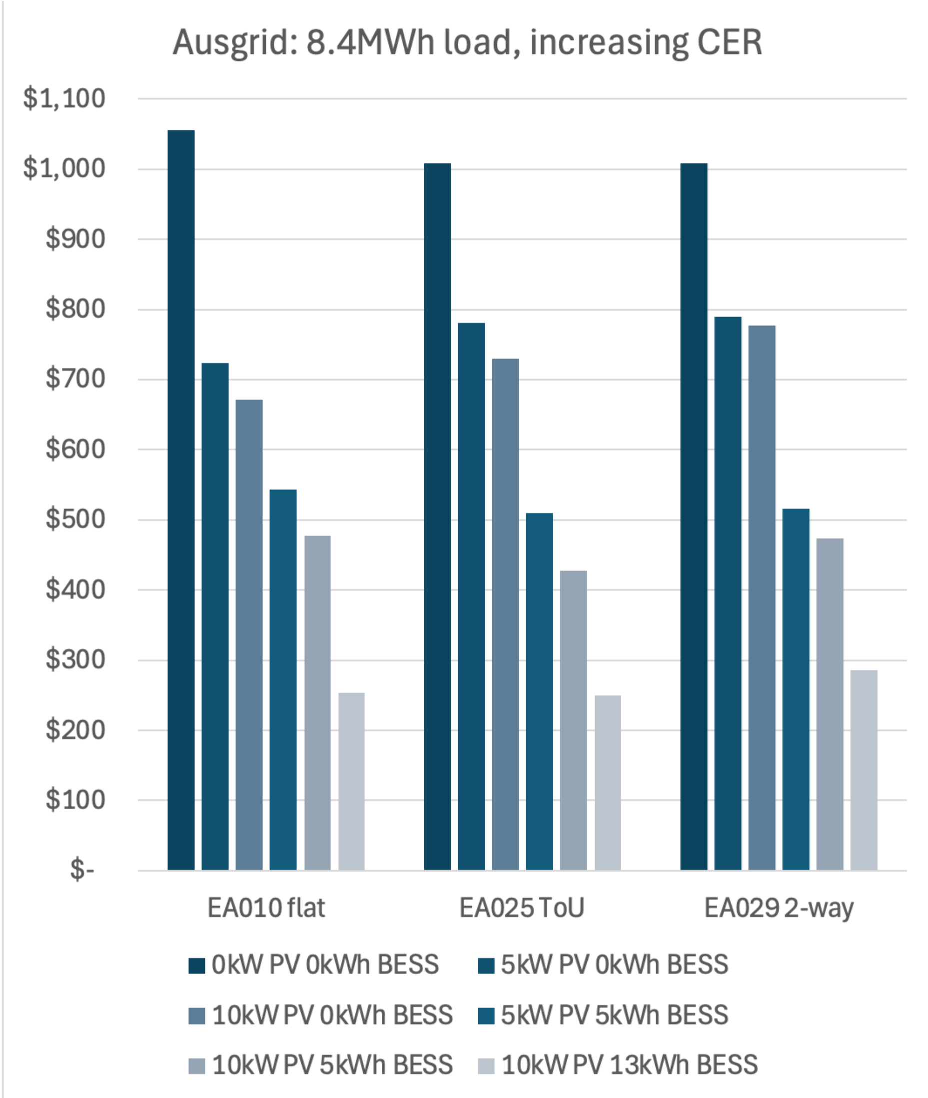
There is a major step down in the total network cost recovered from a household, once a battery is in place – increasing self-consumption of PV, and potentially also avoiding higher peak network import charges under ToU tariffs.

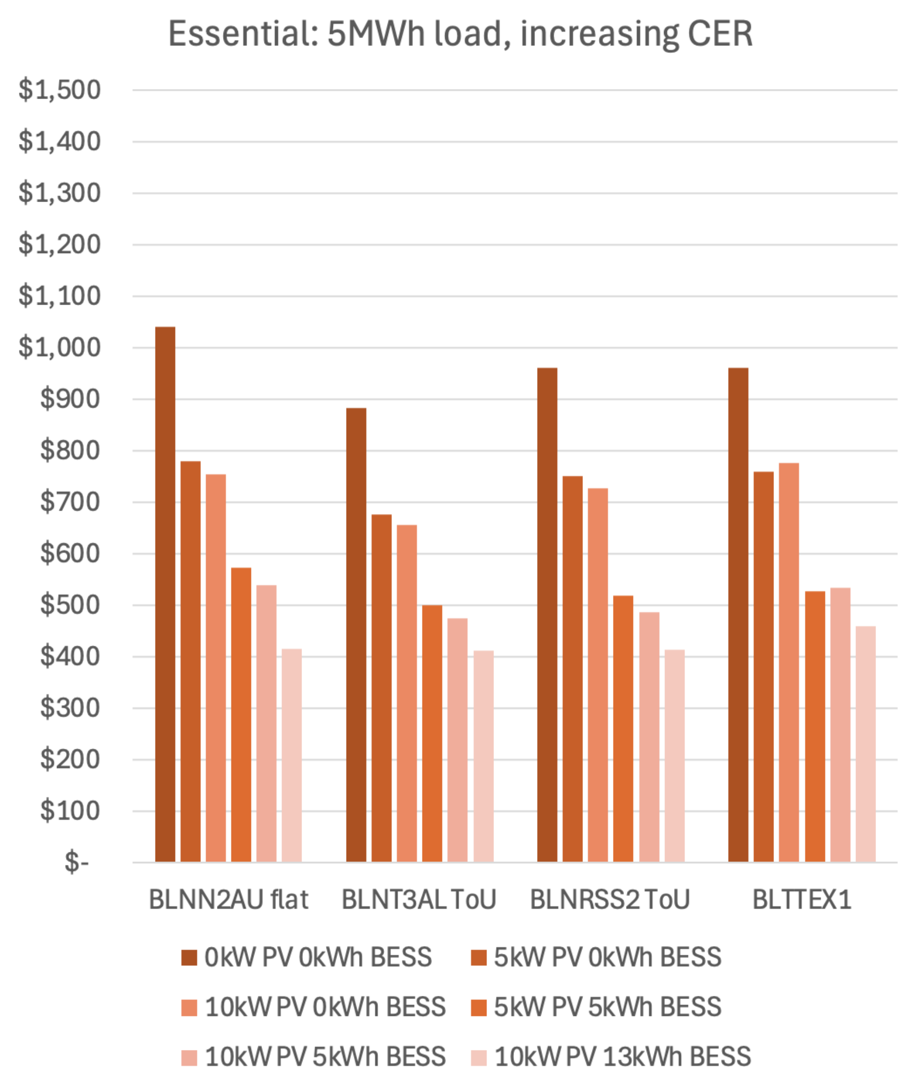
Tariffs structure generally does little to equalise outcomes

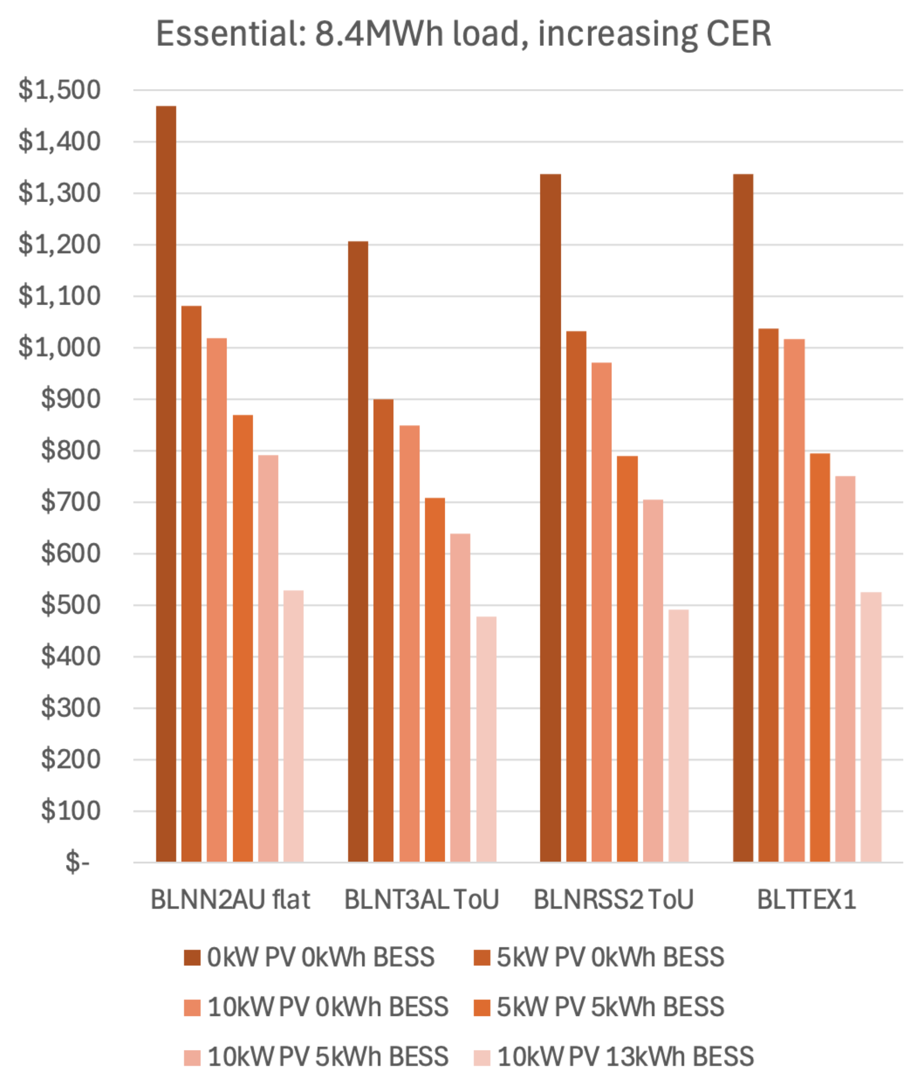
These conclusions do not change much when assessing older-style flat tariffs, ToU tariffs or two-way tariffs: non-CER households pay much more regardless.

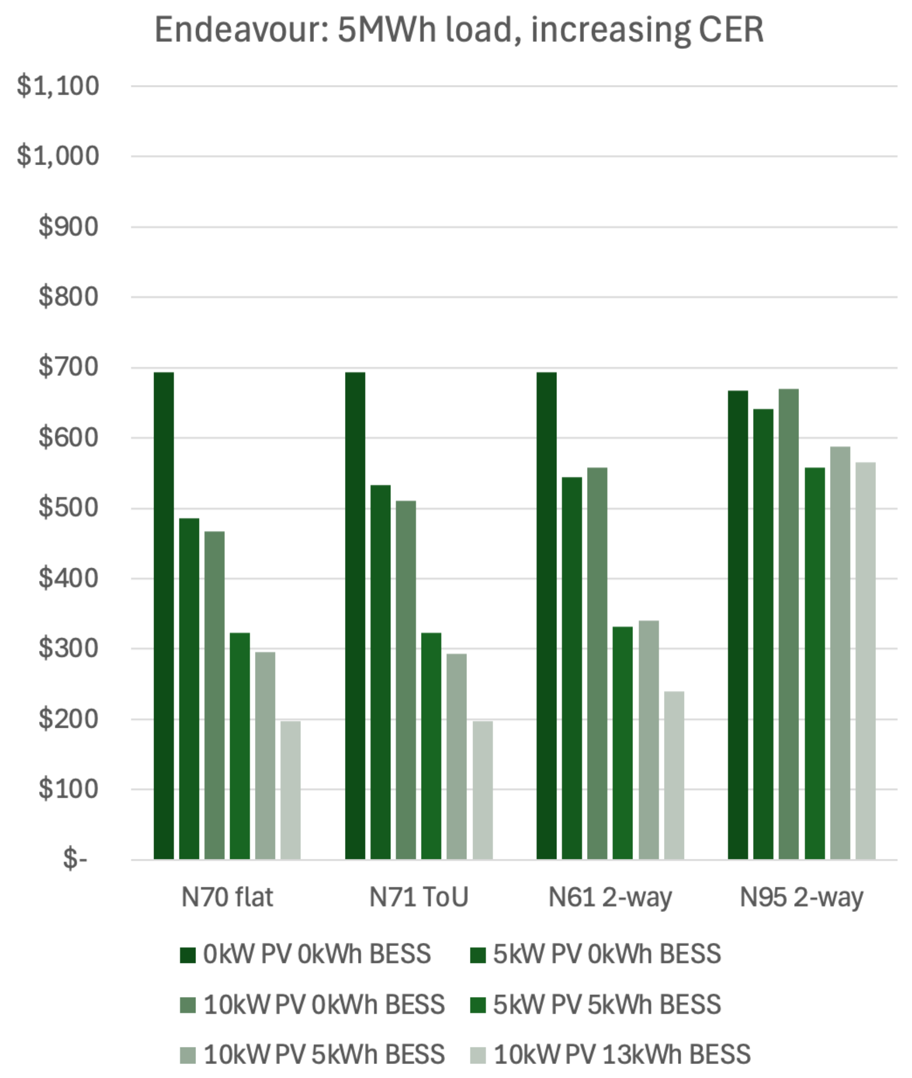
The exception is Endeavour's N95 two-way tariff, described as a "residential storage" tariff. This comes closest to clustering the cost outcomes regardless of CER status and would be materially the cheapest outcome for a non-CER household… if they were to be placed on it, which we expect is not likely!

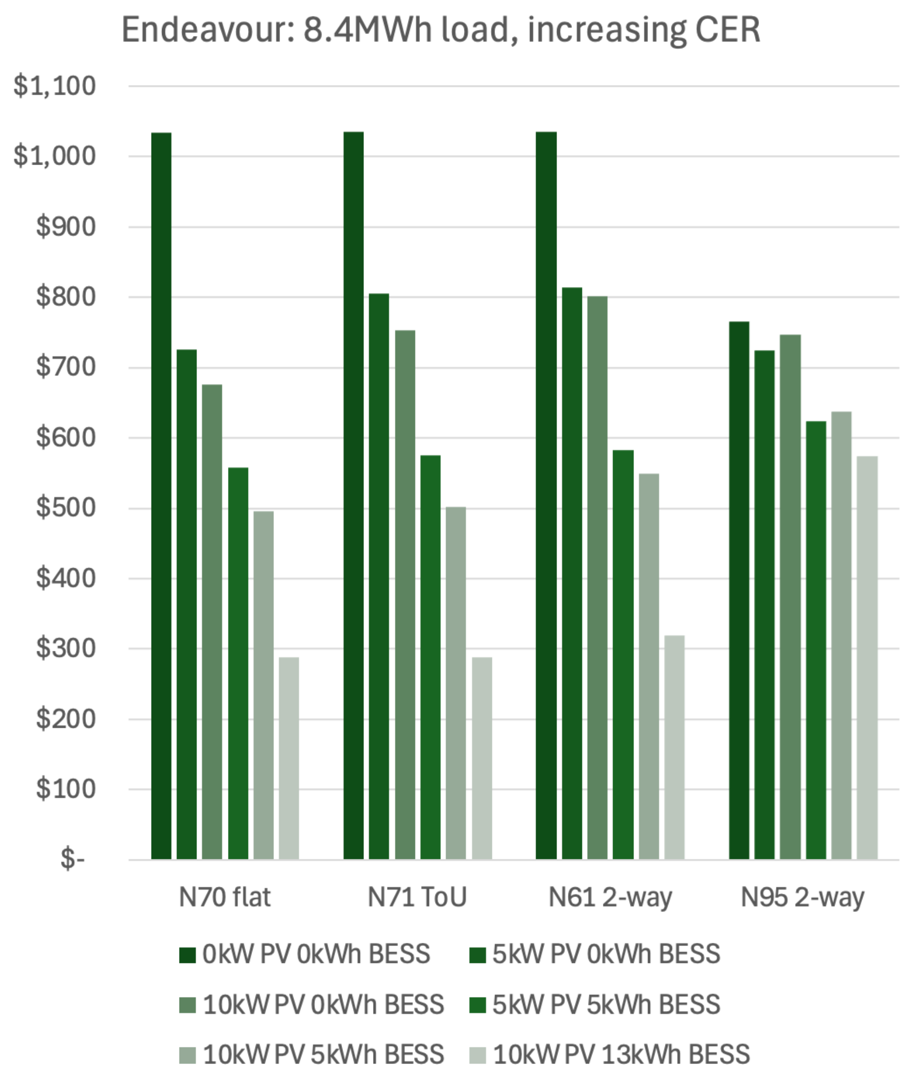

Ausgrid: 5MWh load, increasing CER
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
EA010 flat
EA025 ToU
EA029 2-way
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS

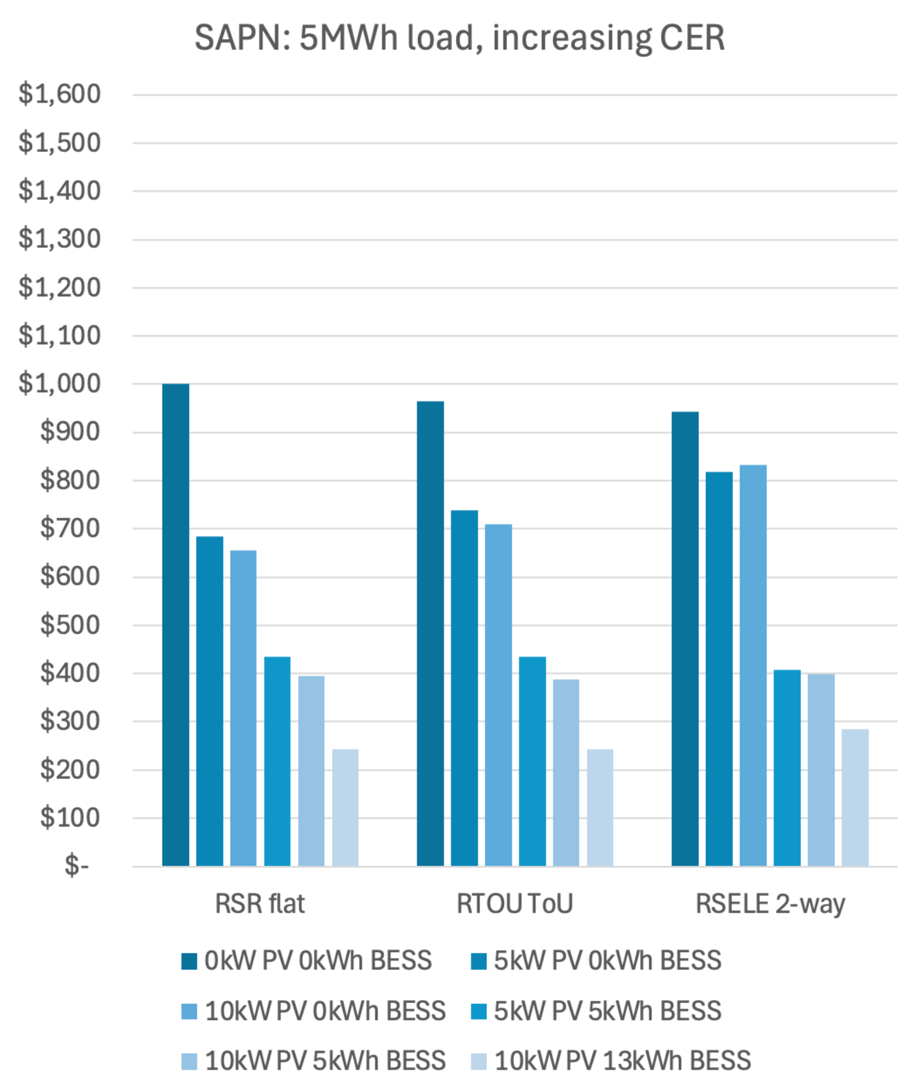

Ausgrid: 8.4MWh load, increasing CER
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
EA010 flat
EA025 ToU
EA029 2-way
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS

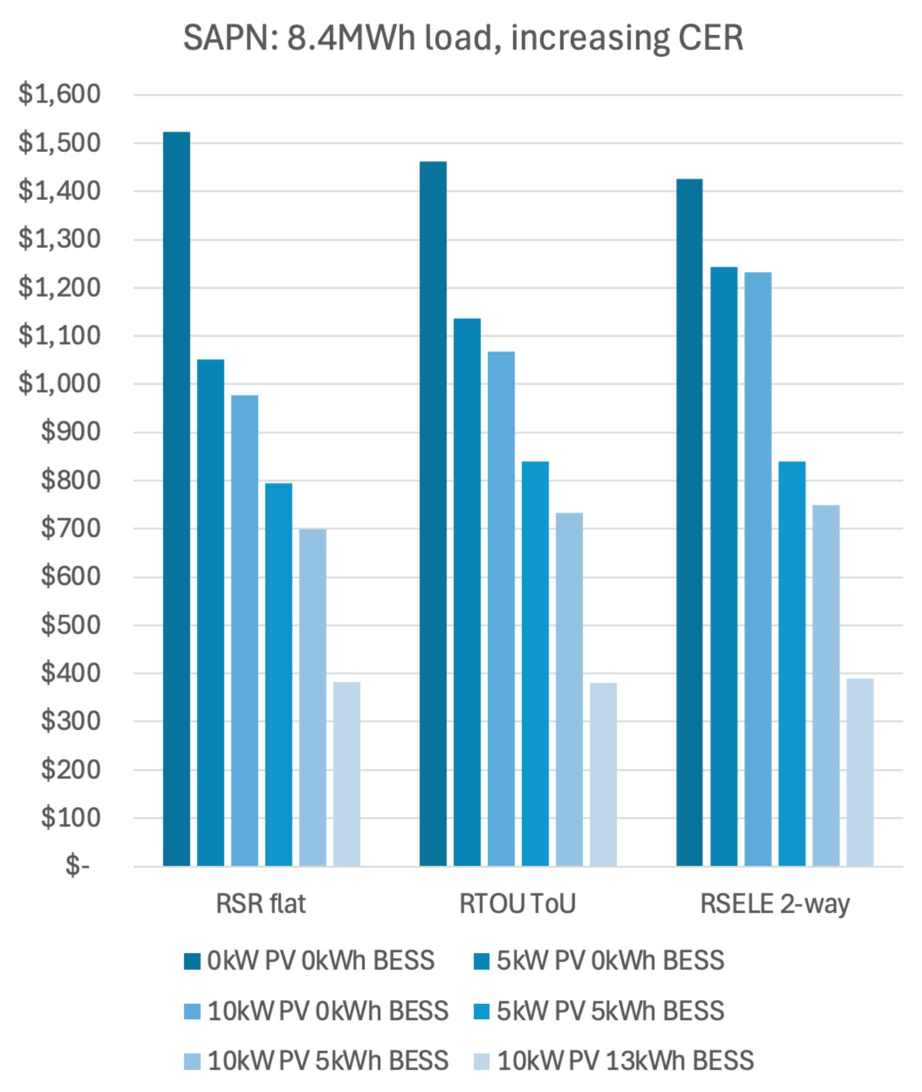

Essential: 5MWh load, increasing CER
$1,500
$1,400
$1,300
$1,200
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
BLNN2AU flat
BLNT3AL ToU
BLNRSS2 ToU
BLTTEX1
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS


Essential: 8.4MWh load, increasing CER
$1,500
$1,400
$1,300
$1,200
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
BLNN2AU flat
BLNT3AL ToU
BLNRSS2 ToU
BLTTEX1
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS


Endeavour: 5MWh load, increasing CER
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
N70 flat
N71 ToU
N61 2-way
N95 2-way
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS


Endeavour: 8.4MWh load, increasing CER
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
N70 flat
N71 ToU
N61 2-way
N95 2-way
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS

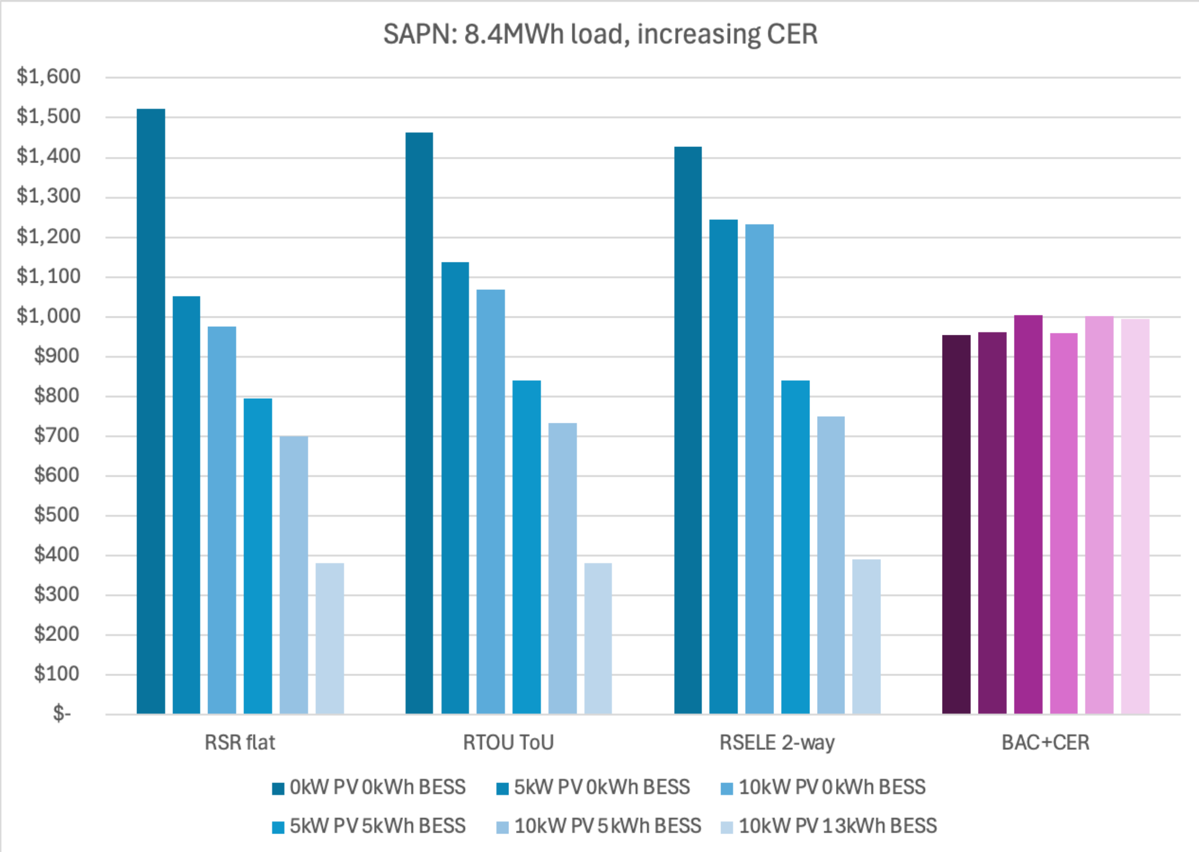

SAPN: 5MWh load, increasing CER
$1,600
$1,500
$1,400
$1,300
$1,200
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
RSR flat
RTOU ToU
RSELE 2-way
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS


SAPN: 8.4MWh load, increasing CER
$1,600
$1,500
$1,400
$1,300
$1,200
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$-
RSR flat
RTOU ToU
RSELE 2-way
0kW PV 0kWh BESS
5kW PV 0kWh BESS
10kW PV 0kWh BESS
5kW PV 5kWh BESS
10kW PV 5kWh BESS
10kW PV 13kWh BESS

Part 9: An alternative: fixed Basic Access Charge plus CER tariff

Endeavour's N95 tariff clusters outcomes because it has a relatively high fixed daily charge component of $1.43, some 3.3x higher than Ausgrid's 40c/day.

To illustrate how a fixed annual charge approach would work, we created a variation to the SAPN RSELE 'electrify' tariff. We removed all ToU import charges and increased the daily charge from $0.64 to $2.62. The two-way charges and credits for PV exports remain unchanged.



We selected this so that the simple average of the cost over the six cases above for the RSELE tariff would be the same ($980).

Here, the outcomes are closely clustered:

- The non-CER household pays the least.
- The 5kW PV households pay slightly more, due to the net impact of the two-way tariffs on their exports.
- The 10kW PV households pay a little more again, given their greater exports, including in the solar soak period where this is penalised.
- There is little advantage or disadvantage to having a BESS.

While this is clearly just a simple example, outcomes of this type are much closer to an equitable sharing of network cost recovery than the status quo offers.