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AEMC Pricing Review

Response to Pricing Review Discussion Paper

Evie Networks | July 2025

Evie Networks is Australia's largest owner-operator of public direct-current (DC) fast EV charging infrastructure. Since our establishment in 2018 we have built a national network of more than **300** charging stations and **900** bays of charging. Over the past twelve months alone our national network has delivered approximately **25 GWh** to drivers, enabling about **120 million kilometres** of zero tail-pipe emission travel for drivers of passenger cars, light commercial vehicles and an emerging cohort of battery-electric trucks.

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Executive Summary

As Australia's largest owner-operator of public DC fast charging infrastructure, Evie Networks is committed to accelerating Australia's transition to electric vehicles. We welcome the opportunity to the AEMC's Pricing Review Discussion Paper.

Equitable access to electrical vehicle ownership is a key social issue for Australia. With many EVs already reaching price parity with Internal Combustion Engine vehicles, the lower running costs of EVs provide an opportunity to address current cost of living pressures. It is Evie's view that no Australian should be left behind from the electric transition.

Charge Point Operators (CPOs) recognise that affordable public fast charging essential for many drivers, especially those without access to home charging, including anyone without a driveway, apartment residents, professional drivers, business fleets and more. Today for CPOs, the largest operating cost is electricity, and the largest component of electricity bills is DNSP tariffs. It follows that fair and equitable DNSP tariffs is a prerequisite for affordable public fast charging, and therefore the successful electrification of transport.

Transport electrification, and the provision of public charging infrastructure, also closely aligns with Australia's National Energy Objective, specifically reducing costs and improving network resilience:

- Greater utilisation of existing network assets means efficiency benefits can be passed on to all consumers[1].
- Public fast charging demand aligns with solar peak times. Soaking up solar generation helps networks avoid the growing costs of managing excess solar.
- Networks are built for 5-10 peak events per year. Public charging is highly controllable and customers respond well to notifications and price signals.

It is clear that policy and tariff design must enable, not inhibit, efficient rollout and use of public EV charging. However this is not the case today. Current network tariff structures were not designed for services like public EV fast charging, which has very different characteristics to traditional loads and presents a great opportunity for network efficiency.

Evie has previously commissioned Marsden Jacobs to perform a detailed analysis of DNSP tariffs[2]. The report is attached separately. NSW DNSPs and Ausgrid in particular were the focus of the analysis, in part because there is significantly more detail on the rationale for its tariff designs than some other networks. However the insights from the analysis apply to most DNSP tariff structures. In summary:

- Network price discrimination is substantial
- Network tariffs fail to account for demand diversity
- Network tariff windows do not target marginal demand
- Marginal network prices substantially over-recover actual network growth expenditure
- There is inclusion of non-existent future costs in marginal pricing structures

[1] *NSW DNSPs want more EV's on the roads as it means increased network utilisation"* – Ausgrid presentation to EV Council, October 2024

[2]

The overall effect of the current distorted tariffs is to reduce the utilisation and productivity of existing and future network assets, while creating significant barriers to the provision of public charging infrastructure, all of which are clearly at odds with the National Energy Objective.

Evie acknowledges the observations and insights that have been captured in AEMO's discussion paper. We support the AEMC's objectives to promote consumer choice and lower system costs, and we recommend targeted reform to better integrate commercial EV charging into tariff frameworks, for the benefit of all consumers.

Key Messages

1. Public fast charging infrastructure delivers essential public value but faces disproportionately high network charges under current tariff designs.
2. Public charging is penalised by demand-based network tariffs that do not reflect actual contribution to peak load or system costs.
3. Network tariffs must evolve to recognise the flexibility, controllability, and strategic role of public EV charging in the energy system.
4. Current network tariffs vary extensively by DNSP and tariff assignment policies are inconsistent, discriminatory and unfair. This creates complexity and destroys productivity for otherwise sophisticated energy consumers.
5. Network tariff structures do not align with wholesale and retail pricing structures. While the wholesale energy market is evolving, network tariff structures often have an opposing price structure. This creates barriers for CPOs that want to provide clear propositions and value to their customers.
6. AER scrutiny of network tariff proposals needs to be strengthened if network tariffs pricing principles are to be realised.
7. We call for network tariffs that are designed for public fast EV charging, providing a true cost-reflective structure that will enable affordable public charging. Well designed network tariffs can ensure that no consumer is left behind from the electric transition, and that all consumers benefit from lower electricity costs.

Summary of MJA critique of current network tariffs

Introduction and overview

Evie's comments on the AEMC Pricing Review Discussion Paper ('AEMC Report') mainly relate to defects in current network tariff designs, and their adverse impacts on EV charge point operators and hence EV owners and the rate of EV adoption. As a business customer, Evie has full visibility of the bill impact of network tariffs.

Evie agrees with the views expressed in the AEMC Report. We agree with the views expressed in the AEMC Report regarding defects in network tariffs.

We consider it useful to delve into each of these points in a little more detail than in the AEMC Report. Evie suggests a clear definition of the shortcomings in existing network pricing structures is a pre-condition for identifying and evaluating options for designing and implementing remedies. This summarises extensive empirical analysis of network billing and demand profile data contained in the attached February 2024 report by Marsden Jacob Associates (MJA).[3]

While the MJA report focuses on NSW and Ausgrid, network pricing defects are widespread and certainly not limited to NSW and Ausgrid. In part, Ausgrid is referenced because it provides significantly more detail on the rationale for its tariff designs than some other networks. The basis for Evie's comments below is the following data and analysis in the MJA report.

Network price discrimination is substantial

The AEMC Report notes that *'Network tariffs are encouraging the transfer of network costs between consumers rather than reducing costs' (AEMC page 54-55).* Evie agrees and notes the problem is larger and more complex than indicated in the Discussion paper.

The MJA report draws on billing information to derive actual unit network prices payable by each Evie site. These prices are then compared with the average network prices payable by other customers in the same tariff classes within each network, drawing on network disclosures for each annual pricing reset. The resulting price discrimination between tariff classes and individual customers reflects time of use and demand profile structures, and the criteria set by the network for allocating each Evie network site to the network determined tariff class and associated structure. This evidence shows that Evie is paying substantially higher unit network prices compared with the average customer in each network defined tariff class in 2 of the 3 NSW distribution networks. This raises the question whether there is sufficient evidence to support network decisions to impose these pricing premia under the network pricing objective and pricing principles. For convenience, see Table 1 below with surrounding text. It also raises the question whether regulatory review of DNSP pricing proposals is sufficient to identify contradictions between tariff proposals and the relevant network pricing rules.

[3] Review of Ausgrid's Revised Network Tariff Proposals and the Australian Energy Regulator's Draft NSW DNSPs' Tariff Determinations: Are They Reasonable? Report for Evie Networks 2 February 2024.

Table 1 below compares estimated average unit prices for reference tariffs for each NSW DNSP with average unit prices for Evie sites. This shows the substantial price differences and price premia in the right-hand column.

Table 1 Comparison of estimated Evie average unit prices against network reference prices

Tariff group	Reference – low voltage small business[9]	Evie unit price	Difference	Premium
Ausgrid - interval metering	8.33	12.18	3.85	46%
Ausgrid - demand tariffs	*8.33*	*12.41*	*4.08*	*49%*
Essential	12.58	12.15	-0.43	NA
Endeavour	7.56	9.63	2.07	27%

Source: MJA analysis of DNSP unit prices for 2023/24

The key point is that Ausgrid demand tariffs result in price premia for Evie sites averaging more than 4c/kWh or 148 per cent of the reference price. Endeavour also applies a significant premium to Evie sites, while in Essential Energy's network, Evie site unit prices are close to the reference price.

Regarding the AEMC Report's comment that '*Current network tariff approaches may not accurately reflect marginal costs' (AEMC page 57)*, we make the following points.

Network tariffs fail to account for demand diversity

The MJA analysis draws on Evie interval data to derive demand profiles at each Evie site. These demand profiles are then compared with the demand profiles at the corresponding network zone substation (ZS), drawing on available DNSP data accompanying Distribution Annual Pricing Review reports. ZS and associated feeders represent the bulk of assets that determine the extent of congestion and possible marginal network costs at Evie site locations. This analysis was undertaken for several Evie sites and associated ZS.

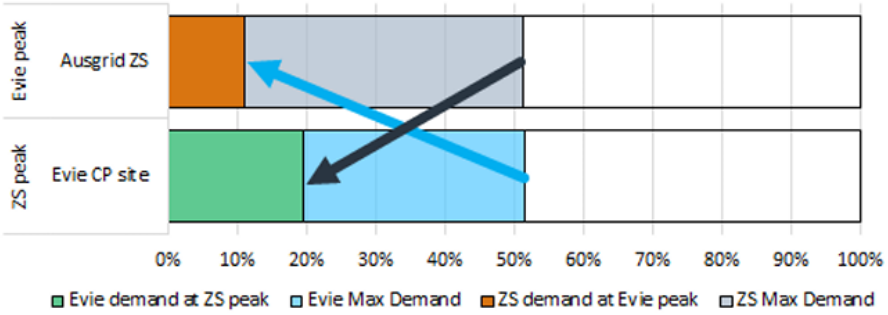
The analysis reveals the high level of diversity between maximum Evie site demand and maximum system demand at each local ZS. This is illustrated in Figure 6 of the MJA report, along with accompanying text. The high level of demand diversity shown in Figure 6 of the MJA report reproduced below shows there is no justification for the unit price premia identified in the figure above.

Figure 6 of the MJA report – demand diversity:

An example of the divergence between demand peaks at Evie CP sites versus Ausgrid Zone Stations (ZS) demonstrated in our May 2023 report is shown in Figure 6 below. It shows that at the time of greatest utilisation of the zone substation serving the Evie site (grey and grey arrow), the charge point is operating at 20% capacity (green). At the time of peak Evie site demand (blue and blue arrow) the relevant ZS was operating at just above 10% capacity (orange). In neither timing are both assets operating at their maximum, and both assets currently have considerable spare capacity or headroom.

This profile for charge points is typical as shown in the extensive analysis of Evie sites across NSW DNSP franchises in Marsden Jacob's May 2023 report included as an attachment to this report.

Figure 6 Example of peak demand diversity between Evie charging site and its Zone Substation

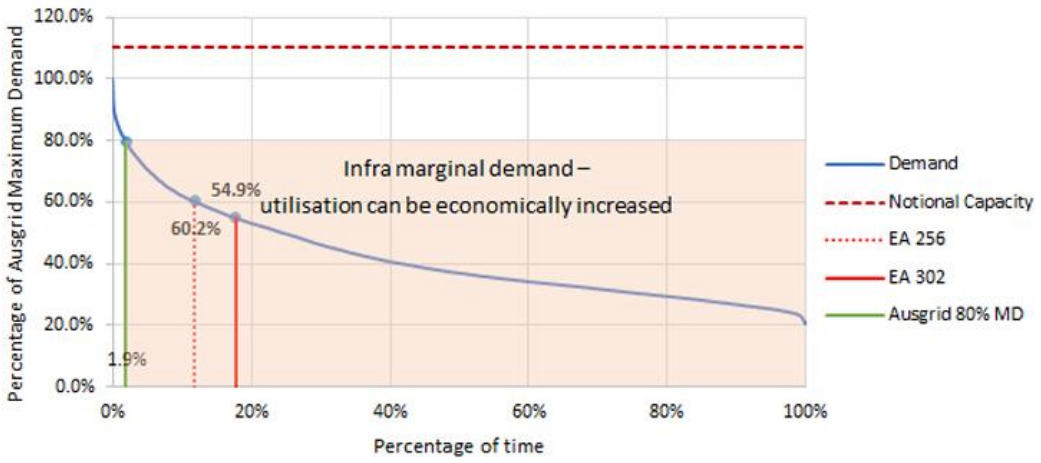


Evie's maximum demand does not correspond to maximum demand on local network assets driven by other consumers. The divergence between the ZS and Evie site demand profiles mean that the Evie sites only use existing ZS capacity. Capacity and demand charges applied to Evie's maximum demand have no grounding in the NER, given Evie's maximum demand diverges from ZS maximum demand. As noted earlier, the proposed demand, capacity and other peak charges are not cost-reflective and result in costs that substantially exceed any benefits in the form of avoided demand.

Network tariff windows do not target marginal demand

Drawing on annual system-wide demand profiles for each DNSP, MJA identified the substantial mismatch between possible marginal demand, on the one hand and the pricing windows over which marginal pricing applies. In the reproduction of Figure 2 from the MJA report below, the top 20% of historical demand represents only 1.9 per cent of the year, while most of the peak tariff windows clearly relate to infra-marginal demand (shaded) where peak tariffs apply during evening "peaks." This is illustrated in Figure 2 below. Again, while the example is Ausgrid, this problem also applies to other NSW networks and to networks in other NEM jurisdictions.

Figure 2 Ausgrid's tariffs target inframarginal demand



Source: *AEMO Net System Load Profile, Ausgrid*

The application of peak prices to infra-marginal demand, as shown in Figure 2 above is clear evidence that *Network tariffs may be leading to consumers unnecessarily rationing their electricity use (AEMC page 56).*

The problem reflects the use of daily demand profiles resulting in peak charging windows that do not correspond to marginal demand occurring for only a few days a year. Evie also notes that network TSS typically assume that any forecast increase in maximum demand over the TSS period triggers growth network expenditure, and the application of LRMC related pricing. In fact, however, outside areas with high urban infill, new industrial areas, and other areas with high connections growth, there is typically excess capacity. This excess capacity reflects the historical over-estimation of maximum demand growth, and onerous reliability obligations that resulted in excess capacity. In the location in Figure 2, it could be argued there is no case for marginal pricing at all, since growth in maximum demand would use existing sunk capacity rather than triggering a need for new capacity

Marginal network prices substantially over-recover actual network growth expenditure

The MJA analysis compares the aggregate marginal revenue requirement from DNSP LRMC modelling and TSS compliance disclosures used to derive unit LRMC estimates with the total revenue requirement for each five yearly period, from the relevant approved Post Tax Revenue Model (PTRM). In one case, this revealed that total marginal growth expenditure over the 10-year period 2024-2034 is less than one per cent of the proposed revenue requirement for 2024-29. Ausgrid's proposed LRMC value is based on a present value of forecast growth expenditure of $43.3 million, as used in its 10-year LRMC calculation to support price discrimination. This contrasts with a forecast total revenue requirement for the five-year period 2024-29 with a net present value of $7.263 billion. The immateriality of growth expenditure implies close to zero price diversity within import tariffs can be justified by variations in usage profiles during times of greatest utilisation and associated LRMC under Section 6.18.5(f). Ausgrid is therefore substantially over-recovering its import growth expenditure without demonstrating this is consistent with the NER.

Inclusion of non-existent future costs in marginal pricing structures

MJA identified that, over the 2019-24 period, erroneous estimates of LRMC for the period 2024-29 were used to set marginal tariff structures. This is shown in Figure 4 from the MJA report below (including surrounding text).

> Ausgrid's TSS compliance statement asserts that a 10-year period is necessary to provide stable price signals for customers that accurately reflect the augmentation expenditure required to serve long term demand growth.[14] The output from the document is reproduced in Figure 4 below.[15]
>
> Figure 4 Ausgrid's comparison of LRMC between regulatory periods
>
> **Table 2. Comparison of LRMC between regulatory control periods ($, real FY24)**
>
Tariff class	2019-24 period per kW pa[6]	2024-29 period per kW pa (upper estimate)	Percentage change
Low voltage / Unmetered	$67.1	$42.6	-37%
High Voltage	$43.0	$16.0	-63%
Sub-transmission	$7.6	$3.3	-56%
>
> The substantial reduction in estimated LRMC between the 2019-24 and 2024-29 periods implies that the LRMC values used in the TSS for 2019-24 were substantially inflated by errors in forecast demand and growth expenditure for 2024-29. While there was no overall excess cost recovery because of this error, price discrimination between and within tariff classes based on erroneous LRMC forecasts would have resulted in many consumers being charged higher unit rates for forecast demand growth and associated growth expenditure during 2024-29 that will not in fact be incurred.

Impact on efficiency and equity

The overall effect of the current distorted network tariffs is to reduce the utilisation and productivity of existing and future network assets. These tariff designs also result in inefficient cross subsidies between consumers within and between tariffs and tariff classes.

The costs of applying excessive and poorly targeted demand and capacity charges to LV business customers with interval meters are substantial, while the actual and potential benefits – avoidance of less than one per cent of Ausgrid's revenue requirement – is very low. This indicates that the proposed tariffs contravene Section 6.18(f)(1) concerning the costs and benefits of the proposed tariff structures resulting in price discrimination. Again, this problem is certainly not unique to Ausgrid.

As a result, *[t]he costs to customers of unnecessarily rationing their electricity use are potentially significant* (AEMC page 57)

AER scrutiny of DNSP TSS proposals

The evidence outlined above demonstrates that DNSP TSS proposals were unable to be reconciled with the relevant pricing principles. Despite presentation of this evidence in relation to multiple DNSP TSS and AER TSS determinations in NSW, Queensland and Victoria, the AER has continued to approve defective TSS proposals. With one exception in Queensland (where the AER refused to accept draft TSS and Revenue proposals) the AER has decided not to exercise its prerogatives under 6.18.8(b) and 6.18.8(c) to direct the DNSP to amend the TSS, or to amend the TSS itself.

Similarly, the AER has approved tariff assignment between identical demand profiles based on annual usage. This does not appear to confirm with Section 6.18.4 principles for assignment based on usage profiles.

Toward remedies for current network tariff structures and processes

This section discusses potential remedies required to correct the defective network tariff structures, as recognised in the AEMC report.

Early remedial action required

We recommend the AEMC consider an early transition to fairer and more efficient network tariffs. As recognised by the AEMC report, current network tariffs are imposing net economic costs on network users, contrary to the National Electricity Objective.

Because network tariff designs currently in force are adversely affecting the electrification of transport, we are opposed to retaining current tariff designs until after the end of the current approved tariff structure statements (TSS). Without early remedial action, network tariffs will continue to hamper the timely electrification of transport and associated economic benefits, including improved national energy security, reduced light vehicle operating costs, and reduced carbon emissions and local pollution.

There are provisions in the current rules for varying TSS within a TSS period. However, it is possible these are not promptly triggered by DNSPs. We therefore recommend AEMC develop a transition plan and associated transitional rules that minimise delay in remedying current defects in network tariff designs.

Address confusion over the concept of LRMC

Implementation of those network tariff-related aspects of the 'Power of Choice' rule changes were expedited and as such, the AER did not issue any guideline regarding methods for estimating LRMC such as: defining pricing windows; the application of demand tariffs outside periods of network congestion; or other matters relevant to sound tariff design. This resulted in confused and inconsistent TSS decision making both by DNSPs and the AER itself. A key confusion relates to the interaction between LRMC calculations used for TSS and the rules relating to the definition of cost building blocks used to derive annual revenue requirements..

Contrary to AER assertions, there currently appears to be no basis in the NER for NSW DNSPs charging customers during 2024-29 for forecast costs that may or may not be incurred during 2029-34.[4] The present rules clearly limit DNSPs to recovering costs forecast to be incurred during 2024-29 (i.e., the relevant 5- year regulatory period). The relevant sections of the rules regarding the definition of the revenue requirement refers solely to the five cost building blocks under section 6.5, namely: return on capital (6.5.2); tax (6.5.3); depreciation (6.5.5); forecast

[4] The same point also applies to existing TSS in Queensland, Victoria, SA, Tasmania and the ACT that seek to recover costs that may be incurred in subsequent regulatory control periods through premium tariffs in a current regulatory period.

operating expenditure (6.5.6) and incentives schemes, where positive (section 6.6.3). These cost building blocks also include forecast capital expenditure (6.5.7) with respect to the relevant regulatory control period (i.e. 2024-29); i.e., 5 years, not 10 years. The inclusion of possible future costs in TSS results in price premia and marginal revenues that vastly exceed marginal costs.

Improve information disclosure obligations for networks

Under the current rules, networks are not required to disclose the portion of their total revenue recovered from imposing premium prices (i.e. revenue attributed to recovery of 'growth expenditure'), or to reconcile this with the demand (export and import) growth components of cost building blocks in the corresponding PTRM. In the absence of this information, it is difficult for consumers, retailers and the AER itself to assess network claims that proposed tariffs (revenue) are cost-reflective (reflect cost building block forecasts in PTRM). At present, it is not possible for the regulator or others directly to test whether network tariffs are in fact cost-reflective, as the relevant information is not disclosed.

Establish clear accountability and obligations on the AER in its review of TSS proposals

In recent and ongoing decisions, AER appears to consider it does not have any obligation to verify DNSP claims that historical and actual TSS are cost-reflective, efficient and compliant with the rules, or Australian Consumer Law prohibiting the application of charges for non-existent costs.

The AER has accepted that DNSP pricing windows align with peak demand in the face of clear evidence to the contrary, submitted by Evie and others. It has continued to support demand and capacity structures that penalise demand profiles like Evie's that have low annual load factors but high demand diversity relative to periods of greatest utilisation of the network. It has ignored evidence presented by Evie and others that capacity and demand changes are not cost-reflective and in conformity with the pricing rules.

When Evie put these points to AER senior staff and a Commissioner in April 2024, AER suggested that Evie engage bilaterally with the networks to seek a modification of TSS. This comment suggests the AER does not appreciate that its role under the rules in reviewing TSS is to protect customers from networks with statutory monopolies exercising market power.

Considering this experience, Evie strongly recommends that AEMC develop rule change proposals requiring the AER to verify network assertions as to cost-reflectivity. Rule changes should also oblige the AER to consider the opportunity for network monopolies to exercise market power in their TSS proposals and decisions.

Responses to Consultation Questions

Question 1: Is enabling bookend products sufficient to meet preferences and lower system costs?

Commercial CPOs such as Evie Networks are sophisticated consumers. Our load is "active" and the CER technology that we deploy is highly controllable. Electricity costs are the major cost line item for a CPO business, therefore electricity bills and methods to reduce costs are front of mind.

We agree that tariffs designed with sophisticated consumers in mind will lower overall system cost, and this requires moving beyond the current approach to recognise the unique characteristics of controllable, flexible loads like public EV charging.

Despite public statements made by the DNSP's regarding the grid benefits that come from increasing EV uptake, current DNSP tariff structures fail to recognise the unique characteristics and clear benefits of EV charging for the grid. Demand charges directly penalise the load profiles inherent to public charging infrastructure, resulting in a disproportionately high cost of electricity for public DC fast charging.

Bookend products, assuming they apply to network tariffs, would need to recognise and resolve the following issues with current network tariffs:

1. Tariff assignment by DNSPs is arbitrary, inconsistent and unfair, and consumers often don't have a say: The most common threshold for defining a large customer is usage >160MWh pa, with some DNSPs also using peak capacity >120kW. This classification is irrelevant and damaging for the grid, as large customer tariffs are even less suited to EV charging than small customer tariffs. Furthermore, DNSPs routinely assign tariffs that are incorrect and in contradiction to forecasts provided by CPOs, and then force CPOs to wait 12 months before allowing a tariff change. The cost runs into many thousands of dollars per affected site.

2. Current tariffs penalise beneficial load profiles: As demonstrated in the MJA analysis, Evie pays substantially higher unit network prices compared with average customers in the same tariff classes, despite our load having high demand diversity with local zone substations and often occurring during solar peak periods.

3. Limited innovation within existing frameworks: The one example of innovative tariff design today, Ausgrid's EA964, demonstrates what's possible but is severely constrained. During heatwave events last summer, Evie reduced demand at 11 sites by 50% to help protect the grid. However, this tariff is limited to low utilisation sites (<160MWh pa) and a further 18 sites were not eligible. When utilisation grows, none of our sites will be eligible and we will no longer work with Ausgrid to help stabilise the grid during heatwave events.

Beyond bookend products - network tariff design must allow CPOs to:

- Offer flexible, affordable pricing to end users
- Innovate with a range of PAYG and subscription offerings
- Invest with confidence in underserved areas, ahead of demand
- Shape or shift load in line with system needs

Tariff innovation is desperately needed across all DNSPs and should start with replication and extension of Ausgrid's EA964 to other DNSPs and high utilisation sites. Where tariffs are designed to enable CPO cooperation with networks to avoid critical peak demand events or grow utilisation during peak solar generation, suitable incentives must be in place to encourage beneficial behaviours.

Question 2: Can retail competition deliver necessary offerings?

- *Can we rely on competition in the retail market to deliver the mix of products and services that customers value?*
- *How should this review address issues in the retail market to ensure the products and services needed will be available, recognising work already underway?*

There is significant innovation happening in the EV charging market today, with CPOs (the charging retailers) competing to provide better customer experiences and value propositions. However, CPOs are severely hamstrung by poor DNSP network tariff design, complexity of dealing with 13 different DNSPs, and lack of alignment between network tariffs and wholesale markets.

Key barriers to retail competition delivering optimal outcomes:

1. **Network tariff signals overwhelm retail pricing signals**: With network tariffs passed through to C&I consumers, we find that network tariff signals, particularly Demand/Capacity charges, are more powerful than retail energy pricing signals. The structures of network pricing and retail pricing tariffs are generally incompatible with efficient innovation.

2. **Inconsistent tariff structures across DNSPs**: Current network tariffs vary extensively by DNSP and tariff assignment policies are inconsistent, discriminatory and unfair. This creates complexity and destroys productivity for otherwise sophisticated energy consumers. This limits innovation at a retail level, undermining benefits that could otherwise be passed on to consumers.

3. **Network tariff structures do not align with wholesale and retail pricing structures:** While the wholesale energy market is evolving, with new ASX products allowing retailers to easily trade morning and evening peaks[5], network tariff structures often have an opposing price structure that charges for peak Demand or Capacity at any time. Network loads should broadly align with overall system load and generation. Without such alignment, retailers and CPOs face significant barriers to providing clear propositions and value to their customers.

4. **Inability to pass through beneficial load characteristics**: Public fast charging is highly controllable and can help to make use of latent network capacity, which should be a key objective for all networks. However there are currently no available low-voltage flexible connection services available to CPOs and therefore no tariffs that are designed specifically for flexible public fast charging connections. Consider Ergon tariffs, that are characterised by extreme and punitive Demand / Capacity tariffs, justified by the wide geographic coverage of the Ergon network. Instead of encouraging flexible load that can help amortise fixed network costs, Ergon penalises CPOs without recognising the obvious benefits of EV charging for their network. This is a missed opportunity and as a result all consumers in regional Queensland pay more for their electricity.

What retail competition needs to succeed:

- Consistent, cost-reflective network tariff structures across DNSPs, that recognise the unique characteristics of public EV charging across all DNSPs
- Alignment between network and wholesale market signals to avoid double-penalising consumers during high-price periods
- Flexible tariff options that allow CPOs to pass through the benefits of controllable, grid-friendly load to end customers

Recommendation: While retail competition has significant potential to deliver innovative offerings, this potential cannot be realised without fundamental reform of underlying network tariff structures. The AEMC should prioritise network tariff reform as a prerequisite for effective retail competition in the EV charging sector.

[5] ASX Energy: New Australian Peak Load Electricity Contracts go live: https://www.asxenergy.com.au/newsroom/industry_news/new-australian-peak-load-elec

Question 3: How can network tariff-setting processes better support consumer outcomes?

- *How can better outcomes for consumers be enabled through network tariff-setting processes?*
- *What can be improved at the retail and network interface that would contribute to better outcomes for consumers?*
- *How can arrangements governing retailers and networks be improved to support better product and service offerings?*
- *Who should receive the network price signal to make it more effective?*
- *Should network tariffs be designed for retailers or consumers? If retailers, how much weight should networks put on the recommendations and views of retailers?*
- *Should any or all of the following be key design features of network tariffs: support competition in the retail market, avoid imposing unnecessary additional costs, and deliver lower overall costs over time?*

Based on our experience as Australia's largest public DC fast charging operator and the detailed MJA analysis of current network tariff defects, we propose comprehensive reforms to the tariff-setting process:

Immediate Process Reforms:

1. **Strengthen AER scrutiny of DNSP TSS proposals**: The evidence outlined in our submission demonstrates that DNSP TSS proposals cannot be reconciled with relevant pricing principles. Despite presentation of this evidence across multiple jurisdictions, the AER has continued to approve defective TSS proposals. The AEMC should develop proposals requiring the AER to verify network assertions and account for the opportunity for monopolies to exercise market power in TSS proposals.

2. **Improve information disclosure obligations**: Networks should be required to disclose the portion of total revenue recovered from premium prices (i.e., revenue attributed to 'growth expenditure') and reconcile this with demand growth components in corresponding PTRMs.

3. **Address LRMC confusion**: When 'Power of Choice' rule changes were implemented, the AER issued no guidelines regarding LRMC estimation methods, pricing windows, or demand tariff applications. This has resulted in confused and inconsistent TSS decision-making. There appears to be no basis in the NER for charging customers during 2024-29 for forecast costs that may be incurred during 2029-34.

Structural Tariff Reforms:

1. **Introduce a dedicated customer class for sophisticated, public fast EV charging infrastructure**: recognising the sector's unique load shape, flexibility, and public value.

2. **Enable opt-in tariff structures**: that reward controllable or flexible loads, including:

    - Dynamic capacity charges that reflect actual network impact

- Time-varying volumetric rates aligned with solar generation and peak network events
- Controlled load classifications for EV charging

3. **Promote co-designed tariffs between DNSPs and CPOs:**, noting that DNSPs would likely be reluctant to participate unless required. Co-designed tariffs could be facilitated by the AER or through innovation trials, to pilot pricing models aligned with solar soak periods or system needs.

Interface Improvements:

1. **Align network, wholesale market and retail tariff structures** to ensure pricing signals are complementary rather than contradictory.

2. **Standardise tariff structures and assignment criteria and processes** across DNSPs to reduce complexity and enable consistent customer propositions.

3. **Implement flexible connection options** that optimise use of latent network capacity through controllable load management

Who should receive network price signals: CPOs as sophisticated, controllable consumers should receive direct network price signals, with ability to respond in real-time to system needs while maintaining competitive retail offerings to end customers.

Early remedial action required: We recommend the AEMC consider early transition to fairer and more efficient network tariffs rather than retaining defective designs until TSS periods end, as current tariffs are hampering transport electrification and associated economic benefits.

Question 4: What role can network tariffs play in meeting customer preferences while also efficiently and effectively contributing to lower overall costs?

In Chapter 7 of the discussion paper AEMC recognises that current network tariff structures may be inequitable, outdated, and misaligned with emerging consumer preferences and technologies. We agree that network tariffs must evolve to support a future energy system. Evie sees network tariffs as critical enablers of both customer-centric outcomes and system cost reductions.

Current tariff failures and their impacts:

1. **Misalignment with load characteristics**: Public EV fast charging is low-utilisation, high-capacity, highly controllable load providing essential transport decarbonisation services. However, network tariffs treat CPOs like high-volume industrial users, applying demand and capacity charges year round. This increases cost per kWh delivered, discourages investment, and create an incentive to reduce demand at times that are not coincident with local network or wider system peaks.

2. **Failure to recognise system benefits**: Public fast charging provides significant system benefits that current tariffs ignore:

    - Greater utilisation of existing network assets (efficiency benefits for all consumers)
    - Alignment with solar peak times (helping networks avoid costs of managing excess solar)
    - Highly controllable load that can respond to network signals during peak events

3. **Missed efficiency opportunities**: Ergon tariffs exemplify lost opportunity where network tariffs are so extreme that CPO investment is not viable. This means Ergon misses out on valuable new, highly controllable load that can increase network efficiency and soak up solar without adding to peak network events.

Required tariff design principles:

1. **Cost-reflectivity**: Network tariffs must reflect actual network costs and benefits. The MJA analysis demonstrates that current tariffs substantially over-recover actual network growth expenditure while failing to account for demand diversity and beneficial load characteristics.

2. **Technology recognition**: Tariffs should differentiate between controllable vs. inflexible loads, recognising that public EV charging is inherently controllable and can provide system services.

3. **Alignment with policy objectives**: Public EV charging infrastructure aligns closely with the National Electricity Objective by:

- Increasing network efficiency through better asset utilisation
- Generating cost savings for all consumers, not just EV drivers
- Providing controllable load that assists with system reliability
- Enabling transport decarbonisation

Specific recommendations:

1. Develop EV-specific or flexible-use network tariffs for public charging that reflect the system's ability to manage demand and load diversity
2. Extend Ausgrid's EA964 tariff beyond the 160MWh pa threshold that currently limits eligibility and replicate this tariff across all DNSPs
3. Align network and wholesale price signals to avoid double-penalising consumers during high-price periods
4. Implement energy-only charges for new sites with time-of-use rates and solar soak incentives
5. Provide load control incentives during critical events for smart infrastructure

The AEMC should recognise that public EV charging is essential public infrastructure that enables lower transport costs for all consumers while achieving National Electricity Objective goals of efficiency, reliability, and decarbonisation.

Tailored, flexible, and efficient network tariffs can play a critical role in enabling both customer-centric outcomes and long-term system cost reductions. However, this requires moving beyond current defective tariff structures to designs that recognise the unique characteristics and system benefits of controllable loads like public EV charging.

Conclusion and Recommendations

Current network tariff structures present fundamental barriers to efficient public EV charging deployment and fail to align with the National Energy Objective. The detailed MJA analysis demonstrates that these tariffs impose substantial price discrimination against beneficial loads, fail to account for demand diversity, and significantly over-recover actual network growth expenditure.

Public EV charging infrastructure provides essential services that align closely with national energy policy objectives: increasing network efficiency through better asset utilisation, enabling transport decarbonisation, and providing highly controllable load that can assist with system reliability. However, current tariff structures penalise rather than reward these beneficial characteristics.

The evidence presented in this submission reveals systemic defects in network tariff design and regulatory oversight that require immediate attention. Without reform, these barriers will continue to hamper timely transport electrification and the associated economic benefits for all consumers.

Immediate Priority Recommendations:

1. Strengthen Regulatory Oversight

Recommendation: AEMC should develop rule changes requiring the AER to:

- Verify network assertions about cost-reflectivity in TSS proposals
- Account for monopoly market power in tariff design decisions
- Require networks to disclose revenue recovered from premium pricing and reconcile with actual growth expenditure forecasts

2. Enable Early Remedial Action

Recommendation: AEMC should develop a transition plan and transitional rules to remedy current tariff defects without waiting for TSS periods to expire, recognising that defective tariffs are currently hampering transport electrification.

3. Address LRMC Methodology Confusion

Recommendation: AEMC should clarify that networks cannot charge customers for forecast costs beyond the current regulatory period and require AER guidelines on LRMC estimation methods, pricing windows, and demand tariff applications.

Structural Tariff Reform Recommendations

4. Introduce EV-Specific Tariff Categories

Recommendation: Develop dedicated customer classes for sophisticated public EV charging infrastructure that recognise:

- Unique load characteristics (low utilisation, high controllability)
- System benefits (demand diversity, solar soak potential)
- Public value (enabling transport decarbonisation)

5. Implement Flexible Tariff Options

Recommendation: Enable opt-in tariff structures that reward controllable loads:

- Option for dynamic charges reflecting actual network impact and reward load control that is beneficial for the grid
- Time-varying rates aligned with solar generation and peak network events
- Controlled load classifications for smart EV charging infrastructure

6. Standardise and Extend Innovative Tariffs

Recommendation: Replicate and extend Ausgrid's EA964 tariff model across all DNSPs and remove the artificial <160MWh pa utilisation threshold that limits eligibility for beneficial load management.

System Integration Recommendations

7. Align Network and Market Signals

Recommendation: Ensure network tariff structures complement rather than contradict wholesale market and retail pricing signals, particularly during high-price periods.

8. Enable Flexible Connection Options

Recommendation: Require DNSPs to offer connection arrangements that optimise latent network capacity through controllable load management, with standardised processes and service level agreements. This is included alongside the need for tariff reform, as flexible network connections can work in conjunction with innovative tariffs.

9. Improve Information Disclosure

Recommendation: Mandate comprehensive disclosure of network tariff methodologies, revenue allocation, and cost recovery to enable proper assessment of cost-reflectivity claims.

Long-term System Benefits

The implementation of these recommendations will deliver benefits extending far beyond the EV charging sector:

For all electricity consumers: More efficient network utilisation will reduce overall system costs, with savings passed through to all consumers regardless of whether they own EVs.

For the electricity system: Increased controllable load will improve system reliability and help manage the challenges of high renewable penetration.

For transport decarbonisation: Cost-reflective tariffs will enable affordable public charging, ensuring no Australian is left behind in the electric transition.

For national energy security: Accelerated transport electrification will reduce Australia's dependence on imported fossil fuels while supporting local renewable energy development.

Next steps

The evidence presented in this submission demonstrates that current network tariff structures are fundamentally incompatible with efficient transport electrification. The AEMC has an opportunity to address these systemic issues through targeted reform that will benefit all consumers while advancing Australia's energy transition objectives.

We urge the AEMC to prioritise these recommendations and work with stakeholders to implement solutions that recognise the unique characteristics and system benefits of public EV charging infrastructure. The time for incremental change has passed - comprehensive tariff reform is essential to ensure Australia's energy system can support the transport transition that consumers, governments, and the climate require.

Evie Networks remains committed to working with the AEMC, AER, and network businesses to develop practical solutions that deliver on the National Energy Objective while enabling affordable, accessible public EV charging for all Australians.

Appendix 1: Traditional business tariffs deliver very high costs for publicly available EV charging sites

The EV public fast charging infrastructure industry is still relatively new in in Australia, and because of the still low level of EVs on the road, infrastructure providers must necessarily build out their sites ahead of demand; this early provision of highly visible publicly available fast and ultra fast EV charging sites is critical to addressing concerns about range anxiety.

However the structure or design of "traditional" business tariffs acts as a major barrier to the development of a commercially viable business operation because the load profile of public fast charging is very different from "traditional" small and medium businesses. Because tariffs that are currently applied to small and medium businesses are not suited to this new industry, they result in very high electricity costs.

With traditional tariffs, the Demand or Capacity Charge is generally based on the consumer's highest recorded demand in any 30 minute period, irrespective of whether or not that peak occurred during a network peak demand event.

Furthermore, load peaks likely have no correlation with either distribution network peaks or wholesale market peaks. As a consequence, today Evie rations our electricity use to avoid costs, despite our load likely having no impact on network capacity.

Given the very different load profile of publicly available EV charging sites, Evie believes there is a strong case for the introduction of a specific tariff for this new industry.

Additionally, as the technology is highly controllable, it is further submitted that a technology specific tariff would also be justified. To date, this position has been generally rejected by DNSPs, with the exception of Ausgrid's EA964 tariff which was designed with EV charging in mind. However even this tariff is only available for low utilisation sites that consume <160MWh pa.

The general argument put in opposition to the introduction of a specific tariff for publicly available EV charging sites is that it would involve a cross-subsidy. However, the uptake of EVs, enabled by the availability of well planned, affordable public fast charging, will deliver significant long-term benefits for electricity networks and, ultimately, electricity consumers.

In summary, the benefits include:

- Greater utilisation of existing network assets means efficiency benefits can be passed on to all consumers. This point is now acknowledged by DNSPs[6].
- Public fast charging demand aligns with solar peak times. Soaking up solar generation helps networks avoid the growing costs of managing excess solar.

[6] *NSW DNSPs want more EV's on the roads as it means increased network utilisation"* – Ausgrid presentation to EV Council, October 2024

Networks are built for 5-10 peak events per year. Public charging is highly controllable and customers respond well to notifications and price signals.The network efficiency benefits through greater utilisation, as well as significant avoided network costs (through minimising the costs to manage minimum demand created by excess solar energy during the day), will mean lower costs can be passed on to all electricity consumers, not just EV owners.

The figure below demonstrates these points and is created from actual Evie network utilisation data overlaid with NSW electricity network demand.

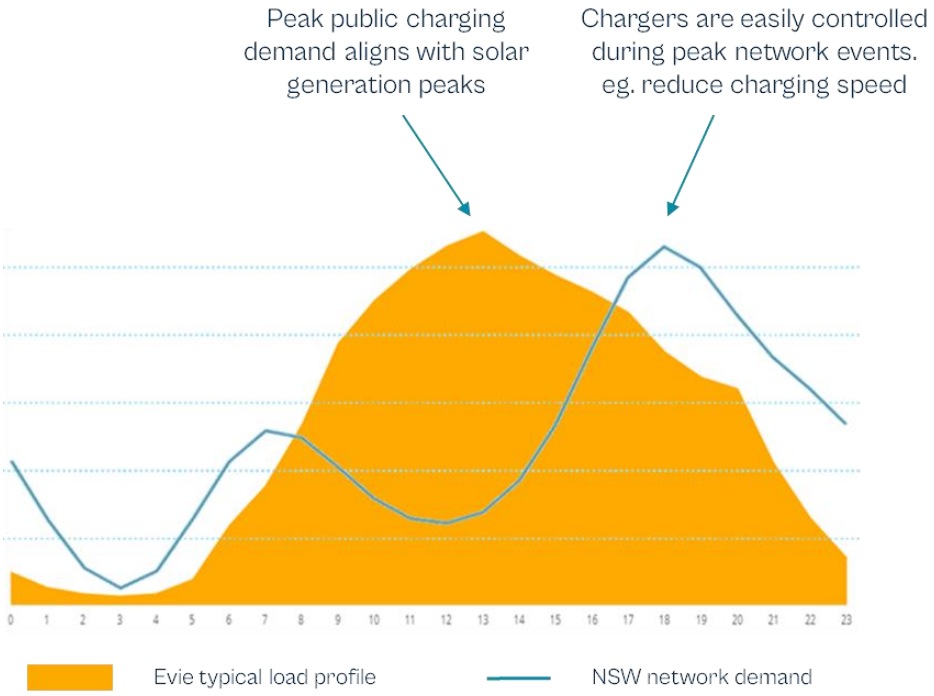
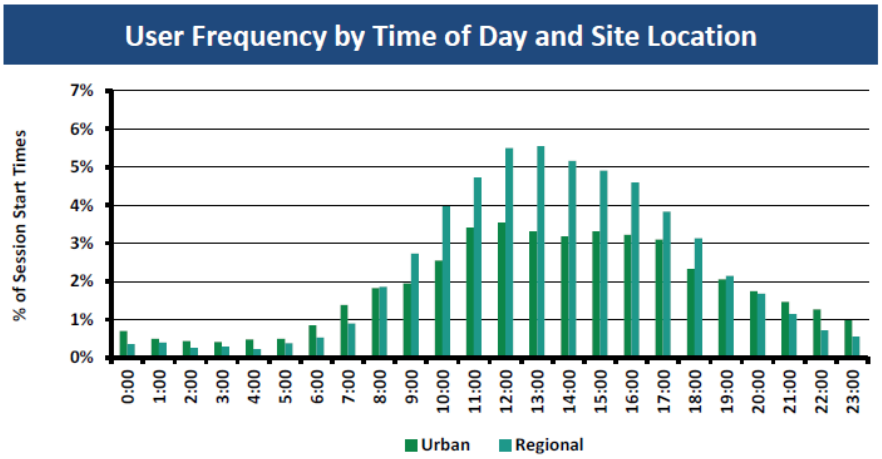


Figure 1: Coincidence of Evie public charging demand with low aggregate network demand, due to solar generation.

This is further highlighted in the graph below from a public ARENA workshop that explored the impact of EV charging on the electricity grid. The data demonstrates how most charging occurs at times of peak solar generation.



Source: ChargeFox, Evie, Energeia

Figure 2: Charging frequency by time of day.

Furthermore (and as referenced above), new technologies, including public EV charging infrastructure, are inherently more controllable than legacy technologies:

- Charging technology is easily controllable. Technology to control public EV charging already exists and is in operation today. Evie has deployed technology that can respond to capacity signals in less than the time it takes for a circuit breaker to trip.
- Load Management Systems for publicly available charging sites are readily available that can address Peak Demand issues.
- They can be designed to optimise network utilisation and stability, while avoiding impact during peak network events.

Going forward, EVs will play a major role in relation to Consumer Energy Resources, with energy stored in the EV battery being used to reduce demand during the evening peak (V2H) and/or adding energy back into the grid during the evening peak (V2G). This has the potential to result in significant additional avoided network costs, which will further benefit all electricity consumers, not just EV owners.

Evie therefore believes that:

- The very different usage profile of publicly available EV charging sites would justify the introduction of a specific tariff for this new industry, consistent with the National Electricity Rules (Clause 6.18.4).
- The network benefits provided through the operation of EV charging sites would mean that the introduction of a technology-specific tariff for publicly available EV charging sites would also be consistent with the NEM Rules (Clause 6.18.5 on Pricing Principles).

Appendix 2: Addressing current barriers to efficient EV charging deployment

Australia already has a lot of experience deploying charging in different categories, from DC fast charging to kerbside AC charging, and across metropolitan and regional areas alike. In every state and territory, governments have co-funded EV charging infrastructure and the lessons learnt reveal common themes that have been consistent across Australia. Those lessons centre around strategic planning, local coordination and the role of DNSPs.

Grid connection delays and cost

The most significant barriers CPOs currently face are directly attributable to DNSPs. Connection processes are notoriously unpredictable, with timelines often stretching into years depending on connection size and without SLAs. This unpredictability introduces significant commercial risk and undermines the investment case for CPOs.

Connection costs also remain prohibitively high, with substantial variation between similar sites. Evie was recently quoted more than $20k by a Victorian DNSP to assess the cost of a power augmentation. The DNSP noted that further costs may be incurred subject to the outcome. The actual cost of connection will be an order of magnitude higher. Clearly spending $20k just for an investigation is a significant barrier to deployment. Evie is not saying that the DNSP is acting against current AER guidelines, but we are saying that AER rules allow DNSPs to create these barriers and that DNSPs, acting rationally, are taking advantage of inadequate AER rules in order to maximise profits.

Lack of flexible connection options

DNSPs have stated that there is ample capacity for additional kerbside EV charging and we agree. Part of the reason there is ample capacity is that equipment is easily controllable to avoid peak network events. Evie welcomes connection options that allow for flexible connections, however connection options available to CPOs today are very limited.

Evie's recent experience, right across Australia and including all regions of NSW, is that DNSPs often limit the capacity available for new CPO connections. At multiple sites in inner Sydney, Evie has been offered just 133A and 150A by Ausgrid. We understand that networks must accommodate peak demand events, however EV charging equipment is highly controllable and we can easily avoid peak demand events, making use of latent capacity when available. Flexible connection options are not offered.

It remains to be seen how DNSPs might roll out an extensive AC charging network, when CPO experience is that there is often limited capacity available. The model as proposed is clearly not possible if DNSPs are required to follow the same rules that are applied to their customers.

Tariffs that are incompatible with sustainable charging business models

Current DNSP tariff structures fail to recognise the unique characteristics and clear benefits of EV charging for the grid. Demand charges directly penalise the load profiles inherent to public charging infrastructure, resulting in a disproportionately high cost of electricity for public DC fast charging.

The one example of an innovative tariff today, Ausgrid's EA964, provides a strong incentive to reduce load during peak demand events while offering low cost at other times. During heatwave events last summer, Evie reduced our demand at 11 sites by 50% to help protect the grid. However this tariff is limited to low utilisation sites and a further 18 sites were not eligible. When utilisation grows, none of our sites will be eligible and we will no longer work with Ausgrid to help stabilise the grid during heatwave events. Clearly this doesn't make sense in today's climate.

Tariff innovation is desperately needed across all DNSPs and it can start with replication and extension of Ausgrid's EA964 to other DNSPs and high utilisation sites.

Recommendations to address current barriers

Government policy must address the current barriers to EV charging rollout if NSW is to achieve objectives for EV uptake and emissions reduction. If the following recommendations are achieved, this will go a long way to creating a vibrant and sustainable EV charging industry that the community needs:

Streamline network connections: Require DNSPs to provide standardised, transparent connection timeframes with SLAs and penalties for excessive delays.

Develop flexible connection options: Require DNSPs to offer flexible connection arrangements optimise use of latent network capacity through controllable load management of smart infrastructure, with customers responding to network forecasts and signals.

Develop tariffs that recognise smart infrastructure: Replicate and extend Ausgrid's EA964 to other DNSPs and high utilisation sites for smart infrastructure that can be easily controlled by customers. Key elements of innovative tariffs should include energy-only charges for new sites; time-of-use rates with solar soak incentives; and load control incentives during critical events. Innovative tariffs should be available for both low and high utilisation sites.

MARSDEN JACOB ASSOCIATES

economics
public policy
markets
strategy

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Review of Ausgrid's Revised Network Tariff Proposals and the Australian Energy Regulator's Draft NSW DNSPs' Tariff Determinations: Are They Reasonable?

Report for Evie Networks

2 February 2024

A Marsden Jacob Report

Prepared for Evie Networks

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Executive summary

This report assesses whether Ausgrid's revised network tariff proposals in relation to electric vehicle (EV) public charging sites are cost-reflective and consistent with the National Electricity Rules (NER). It also assesses AER's Draft Decision with respect to aspects of Ausgrid's TSS relevant to Evie sites. The fundamental issue is that tariffs, with **capacity**, **demand** and other **peak** charges, produce unit prices that are unsupported by Ausgrid cost, demand and capacity data or sound basis under the relevant network pricing rules in the NER.

A. Ausgrid's proposed LV business customer import tariffs are not cost-reflective

Ausgrid's proposed tariff structures for low voltage (LV) business customers are **not cost-reflective**. Tariff assignment results in customers with the **same demand profiles being charged substantially different prices.** These outcomes are contrary to Sections 6.18.4a(2) and 6.18.5 of the NER.

Under current and proposed Ausgrid tariff structures, Evie is being charged network prices that are on average **nearly 1.5 times the average prices** being paid by typical LV business customers with interval meters. This is highlighted in Figure 1 below.[1]

Figure 1 Evie NSW CP site unit network prices

[Redcated – Commerical in confidence]

Note: one EA302 CP site is off scale at 42c/kWh.

The substantially higher than average network prices are **because peak demand and capacity charges are excessive** relative to the negligible levels of growth expenditure being proposed by Ausgrid. These premium charges are represented by Ausgrid in its TSS compliance statement as being **'cost-reflective'**.

[1] See body of report for a description and longer discussion of the figure.

Ausgrid states that growth expenditure or long run marginal cost (LRMC) is signalled in peak demand/capacity, peak energy and in variable energy rates for flat tariffs.

> *By setting tariffs with reference to the LRMC of the network, we promote efficient use of our network based on tariffs that are aligned with the underlying cost of network usage.*[2]

The intent of the pricing structure is to charge some types of customers higher unit rates than others – **price discrimination** based on LRMC.

Data provided by Ausgrid in support of its TSS proposals imply that total import growth expenditure over the 10-year period 2024-2034 is **less than one per cent of the proposed revenue requirement** for 2024-29. Ausgrid's proposed LRMC value is based on a **present value of forecast growth expenditure of $43.3 million**, as used in its 10 year LRMC calculation to support price discrimination.

This contrasts with a forecast **total revenue requirement** for the five-year period 2024-29 with a net present value of **$7.263 billion**. The immateriality of growth expenditure implies close to **zero price diversity within import tariffs** can be justified by **variations in usage profiles during times of greatest utilisation** and associated LRMC under Section 6.18.5(f). Ausgrid is proposing substantially to over-recover its import growth expenditure but has not demonstrated this is consistent with the NER.

The efficient cost of supplying Evie sites in Ausgrid's network is no more than the average price for typical LV business customers. Maximum Evie site demand occurs well outside times of greatest utilisation of the relevant network assets and **demand and capacity charges should not be applied to Evie site demand**. This is because Evie site demand profiles are not related at all to heating and cooling demand by business LV consumers generally. Heating and cooling demand are the main drivers for annual maximum demand (AMD), depending on whether the network locality is winter or summer peaking.

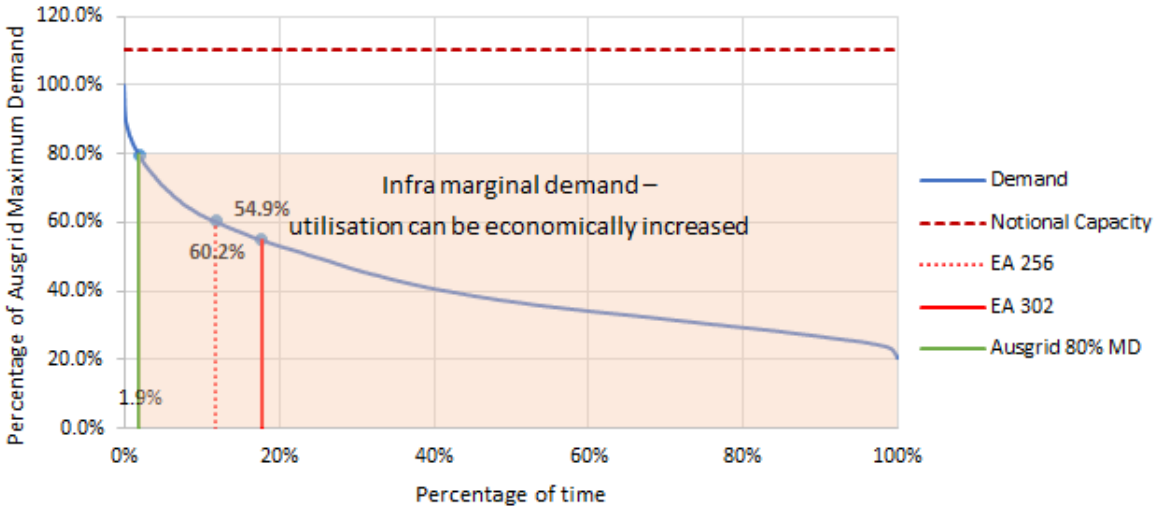
Ausgrid's assertions there is a cost basis for its proposed network price discrimination appear to be **misleading**. Current and proposed prices appear to reflect **charges for services that are not being supplied.** Any misrepresentation of the cost basis for prices, or charges for services that are not supplied, may potentially **contravene the Australian Consumer Law**.

B. Current inefficient network tariffs are distortionary

Figure 2 below demonstrates that the top 20 per cent of Ausgrid's AMD occurs during 1.9 per cent of a year (vertical green line). By contrast, the charging windows for both Ausgrid EA 256 tariff (dotted vertical red line) and EA 302 tariff (solid red line) correspond to 60.2 per cent and 54.9 per cent, respectively, of AMD.

[2] See body of report for references.

Figure 2 Ausgrid's tariffs target inframarginal demand



Source: *AEMO Net System Load Profile, Ausgrid*

This is because the duration of these charging windows is 11.8% (EA 256) and 17.8% (EA 302) of the year respectively. During these periods customers could be consuming more demand (between 20 and 25% AMD) at no material additional network cost, but they are deterred from doing so by Ausgrid's tariff structures. Moreover, even in the limited areas where forecast AMD exceeds existing capacity, total growth expenditure being proposed is less than one per cent of the total revenue requirement for the TSS period.

The overall effect of **distorted tariffs** is to reduce the utilisation and **productivity** of existing and future network assets. The costs of applying excessive and poorly targeted demand and capacity charges to LV business customers with interval meters are substantial, while the actual and potential benefits – avoidance of less than one per cent of Ausgrid's revenue requirement – is very low. This indicates that the proposed tariffs contravene Section 6.18(f)(1) concerning the **costs and benefits** of the proposed tariff structures resulting in price discrimination.

C. AER's draft decision to approve Ausgrid's TSS for LV business customers is unreasonable

The AER's draft decisions to approve Ausgrid's proposed tariff assignment, the level of demand and capacity charges, and the charging windows, for LV business customers, are not consistent with the NER and the AER's obligations under Section 6.18.8 of the NER. The AER's draft decision is **unreasonable** and would **permit non-compliance** with the pricing and tariff assignment principles in the NER. The AER has failed to seek to **verify** whether Ausgrid's TSS proposals are consistent with the NER and **non-distortionary.**

The AER's **dismissal of evidence** presented by Evie in May 2023 asserted that the Australian Energy Market Commission supported methods for estimating LRMC that exceed a five-year regulatory control period. This dismissal is unreasonable and makes no reference to the NER. There appears to be **no basis in the NER for charging customers for forecast costs that may or may not be incurred by**

Ausgrid in 2029-34. The relevant sections of the NER regarding the definition of the revenue requirement refers solely to the **five cost building blocks** with respect to the **relevant regulatory control period** (i.e. 2024-29). Under section 6.5 these are: return on capital; tax; depreciation; forecast operating expenditure and incentives schemes. The five cost building blocks encompass all growth expenditure (LRMC) **within the relevant period**. All factors of production (cost building block) relating to standard control growth expenditure may be varied over the relevant period. The post tax revenue model fully accounts for variability in LRMC within a five year pricing period, and efficiently allocates the capital cost of long life network assets over their expected asset lives, rather than the first 20 or 35 per cent of their expected asset lives.

Ausgrid's revised TSS includes **a 37% reduction in LV LRMC for the period 2024-34** compared with the estimate for 2019-2029 applied in the TSS for 2019-24. This highlights that a substantial portion of LRMC based price discrimination during 2019-24 was **excessive and inefficient** and appears to represent charges over 2019-24 for services that are not being supplied in 2024-29.

D. AER has an obligation to remedy inefficient tariff proposals

None of Ausgrid's proposed LV business tariffs would result in cost-reflective network prices for Evie sites, and many other customers. Current Ausgrid tariff policies for reassignment between structurally identical demand tariffs based on usage without reference to demand profiles do not conform to Section 6.18.4 principles for assignment based on **demand profiles**.

The AER's draft approval of Ausgrid's tariff proposals for small business would **permit non-compliance** with both the network pricing principles and the tariff assignment principles. The fact that AER has approved demand and capacity tariffs for Ausgrid and other networks in previous decisions does not justify decisions that are inconsistent with the NER.

Proposed tariff structures **impose substantial costs relative to benefits**. Accordingly, they do not conform with Section 6.18.5(f)(1). Reassignment between Ausgrid's tariffs is not a solution consistent with the NER. None of Ausgrid's proposed LV business tariffs would result in cost-reflective network prices for Evie sites, and many other customers. Current Ausgrid tariff policies for reassignment between structurally identical demand tariffs based on usage do not conform with Section 6.18.4 principles for assignment on usage profiles.

A reasonable final AER decision would require the withdrawal of all **proposed demand capacity and premium flat tariffs** (where available) for LV business customers with interval meters, including Evie sites. Instead, AER could exercise its prerogative under 6.18.8(b) and 6.18.8(c) to direct Ausgrid to amend the TSS or to amend the TSS itself.

Glossary and abbreviations

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Augmentation	Expansion of network capacity to support new connections or existing connection demand growth
CER	consumer energy resources
Cost reflective network prices	Outcomes from tariff designs where the marginal revenue corresponds to marginal expenditure
DAPR	Distribution Annual Planning Report
Daily demand profile	An averaged demand profile where the average daily peak rarely if ever corresponds to times of greatest utilisation of the network
Demand profile	A representation of the distribution of annual demand for a given customer or segment over a year used for network planning and pricing purposes
Demand diversity factor	A measure of variations in maximum demand between one asset or customer group and another. A customer whose maximum demand diverges from maximum demand at a network asset has a higher diversity factor
DNSP	Distribution Network Service Provider
EV	Electric vehicle
Firm capacity	Network capacity inclusive of reserves necessary to maintain reliability performance
Infra-marginal demand	Demand that uses sunk or existing capacity
Infra-marginal capacity	Existing or sunk capacity
Interval data	Measurements of power/energy at half or quarter hourly intervals
kW	Kilowatt
kWh	Kilowatt hour
LDC	Load duration curve – a customer or retail segment demand profile for a given period (not daily)
LF	Load factor – the ratio of energy consumed over a period to maximum demand
LRMC	Long run marginal cost recoverable over a period in which all factors of production can be varied
Marginal demand	Demand that approaches or exceeds existing sunk capacity
MD	Maximum demand (power)
Marginal expenditure (cost)	Avoidable portion of regulated revenues for the regulatory period to which the TSS applies
Marginal revenue	Incremental revenue from premium components of network charges
NEO	National Electricity Objective
MVA	mega Volt-Ampere, which varies depending on power factor
NEL	National Electricity Law
NER (Rules)	National Electricity Rules

Peak demand	Demand during periods of greatest utilisation of network assets, usually within around 10 per cent of annual maximum demand, typically corresponding to less than 2 per cent of a year
Premium price	Refers to tariff components, such as peak energy, demand and capacity charges, that increase average unit prices
Price discrimination	Refers to differences in unit prices between and within tariffs within a single tariff class – see price dispersion vs. price diversity below.
Price dispersion	Variations in unit network prices within a tariff class and/or tariff, that are unrelated to differences in customer usage profiles during periods of greatest utilisation of the relevant network assets.
Price diversity	Variations in unit network prices within a tariff class and/or tariff, that reflect differences in usage profile during periods of greatest utilisation of the relevant network assets.
PTRM	Post-Tax Revenue Model that among other things converts avoidable network costs incurred over up to 10 regulatory periods into avoidable costs recoverable under the Rules within the period to which a TSS applies.
Residual cost	Refers to the difference between LRMC and the total revenue requirement for the relevant period
SRMC	Short run marginal cost – unlike thermal generation, a relatively small component of total network costs
Sunk cost	Refers to the portion of the total revenue requirement that relates to existing or sunk assets.
Tariff	Segmentation of customers within a tariff class to reflect differences in usage profiles.
Tariff class	A group of tariffs sharing common connection and metering characteristics.
TSS	Tariff Structure Statement for a given regulatory control period (typically 5 years)
WACC	weighted average cost of capital
ZS	zone substation – along with associated feeders ('poles and wires'), typically the largest capital component of network capacity at a given location

1. Introduction

This report assesses whether Ausgrid's revised November 2023 tariff proposals for EV public charging sites are cost-reflective and consistent with the NER, and assesses the AER's September 2023 draft decision on Ausgrid's initial tariff proposals.

1.1 Purpose and scope

Marsden Jacob Associates (Marsden Jacob) has been retained by Evie Networks to prepare a report to assist it in presenting a submission to the Australian Energy Regulator (AER) on:

a. Evie site charges and bills under revised electricity distribution tariff structure statement (TSS) proposals for 2024-2029 standard control, import services, submitted by Ausgrid, dated 30 November 2023;[3]

b. A detailed assessment against the NER of Ausgrid's proposed unit network prices to Evie's network of electric vehicle (EV) charging sites ('EV charging sites'); and

c. The reasonableness of the Australian Energy Regulator's (AER) Draft Decision on Ausgrid's TSS for the 2024-2029 period, dated 28 September 2023[4], with respect to whether the proposed tariffs for publicly available EV charging sites, are consistent with the NER including tariff assignment and pricing principles.

The focus of this report is whether Ausgrid has provided evidence and a basis in the NER sufficient to justify its currently proposed tariffs for publicly available EV charging sites. Limited reference is also made to comparable levels of price discrimination being proposed in revised TSS submitted by Endeavour Energy ("Endeavour") and Essential Energy ("Essential").

This report develops and updates an earlier Marsden Jacob report dated May 2023[5], prepared in response to the three NSW DNSPs' initial TSS proposals. The key conclusion from that report was that Ausgrid's initial TSS proposals were not cost-reflective or compliant with the relevant sections in the NER.

1.2 AER approved Ausgrid's proposed tariffs, with some reservations

The AER's draft decision is to approve the following elements of Ausgrid's 2024–29 proposed tariff structure statement, among other things, including the following.

- Tariff assignment and tariff structures for residential and small business customers.

—

[3] Specifically attachments 8.1, 8.2, 8.4, 8.6 and 8.12 available at https://www.aer.gov.au/industry/registers/determinations/ausgrid-determination-2024-29/revised-proposal

[4] See Attachment 19, Tariff Structure Statement, Draft Decision – Ausgrid Determination2024-29, AER at https://www.aer.gov.au/industry/registers/determinations/ausgrid-determination-2024-29/draft-decision

[5] The May 2023 report contains an extensive analysis of Evie sites' DNSP usage profiles across NSW DNSP franchises. This is available at https://www.aer.gov.au/system/files/Evie%20Networks%20-%20Submission%20and%20attachment%20-%202024-29%20Electricity%20Determination%20-%20NSW%20-%20May%202023_1.pdf .

- Tariff structures for low voltage (LV) and high voltage (HV) commercial customers, except for the proposed new embedded network tariffs.
- The proposed change to the usage threshold at which capacity charges apply to medium sized business customers from 40MWh to 100MWh, noting Ausgrid has indicated to AER staff it will include further changes in its revised tariff structure statement.
- The streamlining of network tariffs, including the withdrawal of 10 network tariffs.
- The change of the peak period window to later in the day for customers on time-of-use and demand/capacity network tariffs.

1.3 Report structure

This report is structured as follows.

- Section 2 reviews Ausgrid's Revised TSS and whether its justification for price outcomes withstands scrutiny.
- Section 3 reviews AER's draft decision to approve relevant parts of Ausgrid's draft TSS.
- Section 4 recommends action by the AER to amend Ausgrid's proposed tariffs for publicly available EV charging sites to ensure compliance with the NER.

Appendix 1 explains the method by which the average unitised prices discussed throughout this report were derived from evidence in Ausgrid's annual pricing submissions, the revised indicative pricing schedule for 2024/25 and actual billing data for Evie sites for 12 months ending November 2023.

2. Ausgrid's revised TSS

This section reviews Ausgrid's revised TSS, highlighting the contrast between the adverse price discrimination of nearly 1.5 times average LV business prices, applied to Evie's sites, with the lack of any evidentiary grounding or basis in the Rules for price discrimination of more than one or two percent.

2.1 Current and proposed price discrimination is substantial

Network charges are a material component of small business energy costs – for Evie Ausgrid's demand charge-based tariffs are between 39% and 47% of total charge point costs. This is significantly more than wholesale energy costs.

Under current and proposed Ausgrid tariff structures, Evie is being charged network prices that are on average nearly 1.5 times the average prices being paid by average LV business customers with interval meters. There is no justification provided in Ausgrid's TSS and supporting documents for this substantial price premium compared with typical LV business customers with interval meters. The adverse price discrimination is caused by Ausgrid's use of demand, capacity and other so called "peak" charges that are not cost reflective.

Figure 3 below shows unitised network charges for all Evie sites across NSW. The unitised prices reflect total bills divided by volume of electricity charged.[6] This takes actual CP billing and consumption data until November 2023. The CP sites are all assigned to low voltage (LV) business tariffs for customers with interval meters and annual demand below 100MWh per annum – a single tariff class, for which Ausgrid's projected unitised revenue in 2024-25 is 8.33 c/kWh.[7] Ausgrid's TSS proposes no changes to these tariff structures, only increases in the tariff parameter rates in 2024-25.[8]

Figure 3 Evie NSW CP site unit network prices

[Redcated – Commerical in confidence]

[6] See description of data and method for deriving unitised prices in Appendix 1

[7] Projected revenue is calculated applying Ausgrid's proposed prices in the TSS to their projected 2023-24 volumes from Ausgrid's annual SCS pricing model.

[8] Hence the lower actual billing charges are conservatively benchmarked against the higher future revenue.

Note: one EA302 CP site is off scale at 42c/kWh.

Each Evie site is plotted against its actual average energy consumption per month, both normalising for the different ages of Evie sites as they are rolled out and interrogating any relationship with energy volume.

On average, Evie is being charged unit prices that are substantially more than the LV business customer benchmarks. The two sites with near average unit prices are new sites with low demand.

Figure 3 also shows Evie's NSW sites in Essential and Endeavour's network areas. Ausgrid sites exhibit much higher levels of price discrimination relative to the benchmark low voltage small business average (horizontal red line). There is relatively little price discrimination in Endeavour and Essential networks.

Table 1 below compares estimated average unit prices for reference tariffs for each NSW DNSP with average unit prices for Evie sites. This shows the substantial price differences and price premia in the right-hand column.

Table 1 Comparison of estimated Evie average unit prices against network reference prices

Tariff group	Reference – low voltage small business[9]	Evie unit price	Difference	Premium
Ausgrid - interval metering	8.33	12.18	3.85	46%
Ausgrid - demand tariffs	*8.33*	*12.41*	*4.08*	*49%*
Essential	12.58	12.15	-0.43	NA
Endeavour	7.56	9.63	2.07	27%

Source: MJA analysis of DNSP unit prices for 2023/24

The key point is that Ausgrid demand tariffs result in price premia for Evie sites averaging more than 4c/kWh or 148 per cent of the reference price. Endeavour also applies a significant premium to Evie sites, while in Essential Energy's network, Evie site unit prices are close to the reference price.

2.2 No basis for very high price discrimination in current and revised Ausgrid TSS indicative prices

Ausgrid states that LRMC is signalled in peak demand/capacity, peak energy and in variable energy rates for flat tariffs.[10] In other words, the intent of the pricing structure is to charge some types of customers higher unit rates than others – price discrimination based on LRMC. Ausgrid states that:

> *By setting tariffs with reference to the LRMC of the network, we promote efficient use of our network based on tariffs that are aligned with the underlying cost of network usage.*[11]

However, Ausgrid's estimation of import growth expenditure over the 10-year period 2024-2034 represents less than one per cent of Ausgrid's proposed revenue requirement for 2024-29. Ausgrid's

[9] The reference prices are based on the 2023-24 year from the Ausgrid, Essential and Endeavour pricing models.
[10] See page 11 of Ausgrid's Tariff Structure Statement Compliance Document 2024-29.
[11] Page 9, Ibid.

proposed LRMC value is based on a present value of forecast growth expenditure used in the LRMC calculation over a 10-year period of 2024 $43.3 million.[12]

This contrasts with a forecast total revenue requirement for the five-year period 2024-29 with a net present value of $7.263 billion. The very low levels of growth expenditure implies that only minimal price diversity within import tariffs can be justified by LRMC.

Ausgrid's statements that its proposed tariffs are 'cost-reflective'[13] therefore could be potentially seen as misleading. This may be potentially inconsistent with Australian Consumer Law.

Ausgrid's revised TSS includes a 37% reduction in LV LRMC for the period 2024-34 compared with the estimate for 2019-2029 applied in the TSS for 2019-24. This highlights that a substantial portion of LRMC based price discrimination during 2019-24 was excessive and inefficient.

The unit LRMC is calculated as the present value of forecast future growth expenditure divided by the present value of forecast demand growth over a 10-year period 2024-34. Growth expenditure includes augmentation, corporate overheads and incremental opex at 1.88% of (other) growth expenditure. Expenditure relating to exports is excluded.

All factors of production (cost building block) relating to standard control growth expenditure may be varied over the relevant period. The post tax revenue model fully accounts for variability in LRMC within a five year pricing period, and efficiently allocates the capital cost of long life network assets over their expected asset lives, rather than the first 20 or 35 per cent of their expected asset lives.

Ausgrid's TSS compliance statement asserts that a 10-year period is necessary to provide stable price signals for customers that accurately reflect the augmentation expenditure required to serve long term demand growth.[14] The output from the document is reproduced in Figure 4 below.[15]

Figure 4 Ausgrid's comparison of LRMC between regulatory periods

Table 2. Comparison of LRMC between regulatory control periods ($, real FY24)

Tariff class	2019-24 period per kW pa[6]	2024-29 period per kW pa (upper estimate)	Percentage change
Low voltage / Unmetered	$67.1	$42.6	-37%
High Voltage	$43.0	$16.0	-63%
Sub-transmission	$7.6	$3.3	-56%

The substantial reduction in estimated LRMC between the 2019-24 and 2024-29 periods implies that the LRMC values used in the TSS for 2019-24 were substantially inflated by errors in forecast demand and growth expenditure for 2024-29. While there was no overall excess cost recovery because of this error, price discrimination between and within tariff classes based on erroneous LRMC forecasts

[12] This information is not included in Ausgrid's TSS compliance document but is available at cell D50, LRMC growth sheet from Attachment 8.4: LRMC model for import services, Ausgrid and cell R60, x factors sheet from Attachment 4.3 PTRM for distribution. Even when "growth" expenditure in flat or falling maximum demand network areas is included, the total demand growth related expenditure remains less than one per cent of the proposed revenue requirement. Projected total export growth related expenditure to 2050 is higher but also negligible in the period 2024-2029.

[13] See for example use of "cost reflective" on page 11 of Ausgrid's Tariff Structure Statement Compliance Document 2024-29.

[14] Ibid.

[15] See page 9 of Ausgrid's Tariff Structure Statement Compliance Document 2024-29.

would have resulted in many consumers being charged higher unit rates for forecast demand growth and associated growth expenditure during 2024-29 that will not in fact be incurred.

This is clear evidence that LRMC based price discrimination in tariff structures for 2019-24 is distortionary and did not result in cost-reflective and efficient network prices. Adverse outcomes include inefficient cross subsidies between customers, inefficiently suppressed demand and/or increased investment in and use of non-network alternatives – consumer energy resources (CER) and delay to electrification of gas and liquid fuel use. All and any of these outcomes are inconsistent with the new National Energy Objectives (NEO) that now contains a specific Emissions Reduction Objective.

Ausgrid notes that LRMC will be higher where capacity is constrained and lower in areas where there is significant excess capacity.[16] Nevertheless, the LRMC calculation assumes there is **zero excess capacity** in all areas where demand is growing and therefore **any increase in maximum demand** from the defined 2023-24 baseline is deemed to incur avoidable network expenditure.

Ausgrid's estimate of import LRMC for 2024-34 is substantially overstated because it incorrectly assumes that any increase in demand (in areas where demand is growing) triggers a requirement for new growth expenditure. This ignores the fact that most increases in demand, other than increases caused by new connections, can be accommodated within existing ample spare capacity. A significant portion of what is represented as an avoidable growth-related marginal cost is, in fact, an already existing sunk cost.

Even if the $43.3m LRMC estimate were correct, this suggests that network charges authorised under Section 6.18.5(f) – LRMC – are well below one per cent of the forecast revenue requirement for 2024-29. More than 99 per cent of the revenue requirement is therefore only recoverable under Section 6.18.5(g)(2) – the non-LRMC component of network costs. Similarly, for the typical customer bill, for customers with the same connection and metering, unit rates should vary by only one or two per cent and there should be very low levels of price discrimination.

Ausgrid's estimate of export LRMC applies a 26-year forecast horizon and appears to be running at a higher annualised amount than import LRMC. As noted, there is no basis in the NER for applying charges in 2024-29 for costs that may or may not be incurred until 2050. For the 2024-29 period, the combined value of import and export growth expenditure is less than 1.5 per cent of the proposed revenue requirement for 2024-29. This shows that the carve out of export LRMC is not the main driver of the substantial reduction in import LRMC for 2024-29 compared with Ausgrid's approved TSS for 2019-24.

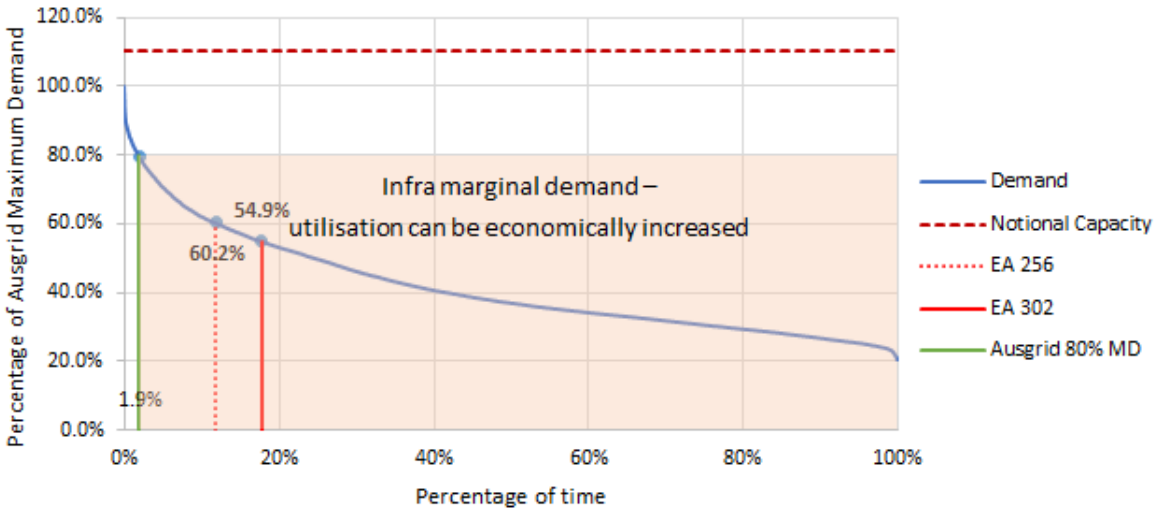
2.3 Ausgrid's proposed peak charging windows do not target maximum demand

Ausgrid's proposed peak charging windows for LV business tariffs EA 256 and EA 302, and associated high unit rates, do not correspond with times of greatest utilisation of the network, as required by

[16] Ibid, page 1.

Section 6.18.5(f). This is shown in Figure 5 below which shows that the system wide demand profile (blue curve)[17] compared with pricing windows applied to Evie sites, and typical capacity across the network.

Figure 5 Ausgrid's tariffs target inframarginal demand



Source: *AEMO Net System Load Profile, Ausgrid*

The top 20 per cent of annual maximum demand (AMD) only occurs during 1.9 per cent of a year (vertical green line). By contrast, the charging window for both EA 255 (dotted vertical red line) and EA 302 (solid red line) during which a customer faces a peak charge on their usage correspond to times of as little as 54.9% AMD demand on the network. This is because the duration of these peak charging windows in the tariff structure are so poorly targeted, capturing 11.8% (EA 256) and 17.8% (EA 302) of the year– **every working weekday for EA 302**.

Moreover, in most of Ausgrid's network, there is significant headroom between AMD and maximum non-coincident firm capacity, indicated by the dotted red horizontal line. This highlights that, even during times of greatest utilisation of the network, most consumer demand is continuing to use infra-marginal (i.e., existing) network capacity and, therefore, is unlikely to trigger any requirement for significant network augmentation and associated growth-related expenditure.

There is therefore no case under the NER for network pricing that has the effect of increasing unit prices for customer demand in the shaded area which solely uses inframarginal network capacity, not marginal network capacity. The effect of this is to charge these customers for network augmentation when, clearly, this is not required. Customers with high levels of demand diversity, including Evie sites, are nevertheless subject to substantial price diversity and price discrimination whereby Evie sites are on average being charged more than double the average price for relevant tariffs.

[17] This type of analysis can be repeated for network assets at any level, demonstrating similar results. While the association is not perfect, the timing and duration of most zone substations peaks in utilisation are broadly aligned with the system peak in NSLP, so the principle demonstrated here can be generalised to individual zone substations and charging points.

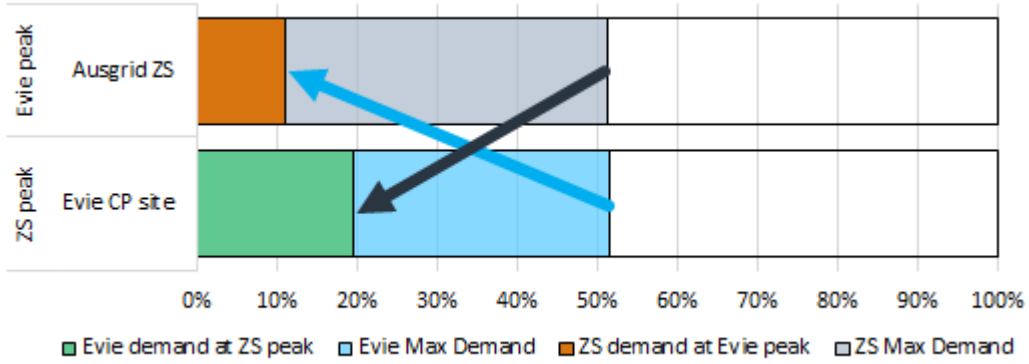
2.4 Existing and proposed tariff structures do not reflect demand diversity

The efficient cost of supplying Evie sites in Ausgrid's network is no more than the average price for LV business customers. Maximum Evie site demand occurs well outside times of greatest utilisation of the relevant network assets. This is because demand for Evie site users is not related at all with heating and cooling demand by business LV consumers generally, whereas heating and cooling are main drivers for maximum network demand, depending on whether the locality is winter or summer peaking.

An example of the divergence between demand peaks at Evie CP sites versus Ausgrid Zone Stations (ZS) demonstrated in our May 2023 report is shown in Figure 6 below. It shows that at the time of greatest utilisation of the zone substation serving the Evie site (grey and grey arrow), the charge point is operating at 20% capacity (green). At the time of peak Evie site demand (blue and blue arrow) the relevant ZS was operating at just above 10% capacity (orange). In neither timing are both assets operating at their maximum, and both assets currently have considerable spare capacity or headroom.

This profile for charge points is typical as shown in the extensive analysis of Evie sites across NSW DNSP franchises in Marsden Jacob's May 2023 report included as an attachment to this report.

Figure 6 Example of peak demand diversity between Evie charging site and its Zone Substation



Evie's maximum demand does not correspond to maximum demand on local network assets driven by other consumers. The divergence between the ZS and Evie site demand profiles mean that the Evie sites only use existing ZS capacity. Capacity and demand charges applied to Evie's maximum demand have no grounding in the NER, given Evie's maximum demand diverges from ZS maximum demand. As noted earlier, the proposed demand, capacity and other peak charges are not cost-reflective and result in costs that substantially exceed any benefits in the form of avoided demand.

2.5 Ausgrid's proposed change to the threshold for assignment from EA 256 to EA 302 does not contribute to more cost reflective tariffs

Ausgrid's proposed change to the threshold for reassignment from EA 256 to EA 302 is partly in response to comments in the AER's Draft Decision. However, this change does nothing to address the fact that these tariffs are not cost-reflective and are not in conformity with the NER.

The tariff assignment principles in the relevant section of the NER refer three times to customer usage **profiles** and only once to the extent of usage. The usage profile is therefore the most relevant criterion for tariff allocation within the same tariff class – i.e. using the same connection voltage and metrology.

However, Ausgrid is proposing to continue to use annual usage volume under section 6.18.4a1(i) as the sole basis for allocating small business customers between tariffs within a tariff class. The tariff assignment principles include the principle that retail customers with a similar connection and distribution service usage profile should be treated on an equal basis under section 6.18.4a(2). Ausgrid's proposed tariff assignment appears to breach this principle, because Evie sites with the same demand profile can be charged substantially different prices, depending on tariff assignment, as shown in Figure 3 above.

2.6 Tariff assignment outcomes appear to contradict the NER and a review of tariff assignment polices is necessary

The only substantive change affecting small business tariffs, compared with the initial TSS proposal proposed by the AER, is the change to the threshold for tariff assignment to EA 302. The threshold would be moved from the current 40MWh over two years to 60MWh pa and then gradually increase to 100MWh.

Even when this change is implemented in full, from the third year of the 2024-29 TSS, it does not result in cost reflective tariffs for Evie sites. Evie sites would continue to be charged unit prices around 1.5 times higher than efficient costs, due to the retention of non-cost reflective demand, capacity and other peak charges.

There appears to be no basis under 6.18.4 for assigning customers to tariffs within a tariff class depending solely on annual demand and disregarding usage profiles relating to times of greatest utilisation of the network. The pricing principles imply that tariff assignment should be on the basis of usage profile rather than volume and that customers with the same usage profiles should be treated equally.

The NER require assessment and review of the basis for Ausgrid's tariff assignment decisions under section 6.18.4a(4) and charging parameters under 6.18.4(b). The preceding analysis indicates that no such review and assessment have been undertaken by Ausgrid for small business customers, in preparing its TSS or the AER while reaching its draft decision on Ausgrid's draft TSS for 2024-29.

A review would highlight that there is no basis in the Rules or Ausgrid supporting data for:

- price dispersion between LV small business tariffs with interval meters;
- charging Evie sites on average 1.5 times the efficient and cost reflective price;
- applying charging parameters that do not correspond to times of greatest utilisation of the network; and
- tariff assignment policies that result in divergent prices for Evie sites with similar demand profiles.

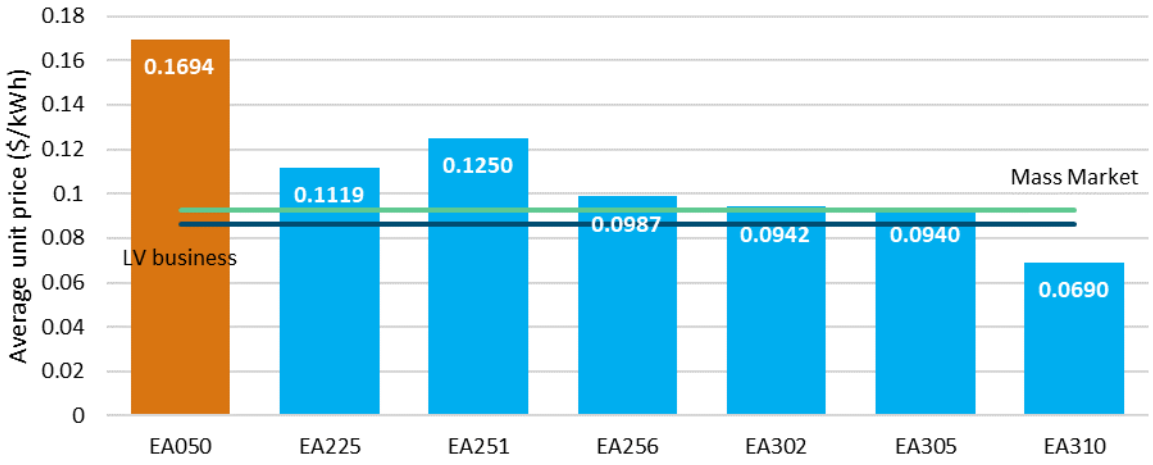
2.7 None of Ausgrid's proposed LV business tariffs are cost-reflective for Evie and other customers

None of Ausgrid's proposed LV business tariffs would result in cost reflective network prices for Evie sites, and many other customers. Current Ausgrid tariff policies for reassignment between structurally identical demand tariffs based on usage do not conform with NER 6.18.4 principles for assignment on usage profiles.

The preceding analysis demonstrates that AER's draft approval of Ausgrid's tariff proposals for small business would permit non-compliance with both the network pricing principles and the tariff assignment principles. The fact that AER has approved demand and capacity tariffs for Ausgrid and other networks in previous decisions does not justify decisions that are inconsistent with the NER.

Figure 7 shows the estimated unit prices for Ausgrid's six low voltage business tariffs compared with the average unit price for all low voltage business customers and all low voltage customers.

Figure 7 Estimated average unit price of Ausgrid LV business tariffs, 2023-24



Source: *MJA analysis, Ausgrid annual SCS pricing model, 2023-24 revised, Ausgrid - Revised proposal - Att. 8.12 - Indicative pricing schedule - NUOS - 30 Nov 2023 - Public_0*

There are significant price variances between the LV business tariffs, and between these tariffs and the average for the business mass market (dark blue horizontal line). For example, the unit price for EA 251 is 1.3 times the unit price for EA 302. As a result of these price variances, customers with the same usage profiles could be charged significantly different unit prices by being assigned to different tariffs.

3. AER's Draft Decision on Ausgrid's TSS

This section assesses the AER's draft decision to approve Ausgrid's TSS proposals with respect to small business tariffs applicable to Evie and whether AER has met its obligations under section 6.18.8 of the NER to ensure that Ausgrid's tariffs are cost reflective and non-distortionary.

AER's draft decision was to approve Ausgrid's tariff assignment policy for residential and small business customers and proposed changes to the structure of small business tariffs, including those applicable to Evie sites.[18] It approved Ausgrid's peak charging windows on the basis they align with peak demand.[19] In addition, the AER stated that:

- 'Ausgrid has appropriately estimated augex with a horizon of at least ten years to meet our definition of long-run'.[20]
- '[o]ur view is that capacity charges are appropriate to signal to large businesses consuming over 100MWh to avoid spikes in their energy use which could contribute to network investment and drive up costs to other customers.'[21]

AER's role under the NER (Section 6.18.8) is to assess whether network tariff proposals are compliant with the NER including tariff assignment (6.18.4) and pricing principles (6.18.5).

3.1 AER's Draft Decision is unreasonable

The AER's Draft Decision appears unreasonable relative to the NER and outcomes where average unit prices for Evie are nearly 1.5 times efficient costs. It appears the AER has not sought to test and verify whether Ausgrid's tariff proposals (before revisions) is compliant with the NER or Australian Consumer Law.

The errors in the AER's draft decision on Ausgrid's proposed TSS highlights that AER did not request or review data necessary to verify that Ausgrid's TSS contributed to the achievement of the tariff assignment and network pricing principles. Most notably, the AER did not seek to verify the extent growth import expenditure can support price diversity between and within tariffs. While relevant price discrimination data can be extracted from the annual pricing data returns, it would be preferable for this data to be presented alongside the TSS and supporting material.

3.2 Dismissal of evidence without reference to NER

The AER dismissed extensive evidence, presented in May 2023 and summarised in section 2 above, that the proposed tariffs resulted in network charges that substantially exceeded efficient network

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[18] See page 12 of Attachment 19 Tariff Structure Statement, Draft decision - Ausgrid distribution determination 2024–29.
[19] See page 13, Ibid.
[20] Ibid.
[21] AER Op. Cit. page 31.

costs for Evie sites. The AER's decision was based in part on the basis that the Average Incremental Cost and Turvey perturbation approaches to estimating LRMC had been endorsed for use by the AEMC in its review of the network pricing principles.[22]

The AER's summary dismissal of Evie's May 2023 submission refers indirectly to an AEMC discussion regarding methodologies and timelines for estimating LRMC exceeding a five-year regulatory control period. However, there appears to be no basis in the NER for charging customers for forecast costs that may or may not be incurred by Ausgrid in 2029-34.

The relevant sections of the NER regarding the definition of the revenue requirement refers solely to the five cost building blocks under section 6.5: return on capital (6.5.2); tax (6.5.3); depreciation (6.5.5); forecast operating expenditure (6.5.6) and incentives schemes, where positive (section 6.6.3). The cost building blocks also include forecast capital expenditure (6.5.7) with respect to the **relevant regulatory control period** (i.e. 2024-29); i.e., 5 years, not 10 years.

In its 2012 review, the AEMC stated a preference for the Turvey perturbation method for estimating LRMC.[23] However, the AEMC's proposed change to the network pricing principles stated *"… long run marginal cost (LRMC) of the network, whereby LRMC refers to the present value cost of bringing forward network capital and operating costs to meet a particular user's sustained incremental derived demand for the relevant network service."*

This proposal was not adopted in the NER and the pricing principles do not refer to the present value of costs associated with a particular user's sustained increases in demand for the relevant network service. Contrary to AER assertions, there currently appear to be no basis in the NER for charging customers during 2024-29 for forecast costs that may or may not be incurred during 2029-34. The present NER clearly limit DNSPs to recovering costs forecast to be incurred during 2024-29 (i.e., the relevant 5 year regulatory period).

Ausgrid's implicit admission that it overcharged some customers during 2019-24 for forecast growth expenditure during 2024-29 that will not be incurred during that period, due to lower forecast demand growth and associated growth expenditure, further highlights the error in the AER's draft decision. AEMC's 2012 discussion regarding network pricing clearly did not foresee and respond to the substantial slowdown in maximum demand growth over the period 2014-23 and forecast by Ausgrid, AEMO and others for the period 2024-29.

3.3 Proposed tariffs are distortionary

Unit price outcomes under the revised TSS are highly distortionary. Evie sites appear on average to be charged 1.5 times cost-reflective prices.

Current excessive unit prices for Evie sites and similar users result in various combinations of economic inefficiency including:

[22] See page 40, Ibid.
[23] See page 185 of AEMC Power of choice review report, dated November 2012.

- Economic costs of avoided demand when the marginal network cost of supplying the avoided demand is close to zero.
- Inefficient cross subsidies between consumers within and between tariffs and tariff classes.
- Economic costs of higher levels of investment in and use of CER when the marginal network cost of supplying the demand substituted by CER is close to zero.

The first two outcomes reduce allocative efficiency, while the third outcome reduces dynamic and long-term productive efficiency. It seems likely the overall effect of distorted tariffs is to reduce the utilisation and productivity of existing and future network assets.

The costs of applying demand and capacity tariffs to LV business customers with interval meters are therefore substantial, while the actual and potential benefits – avoidance of less than one per cent of Ausgrid's revenue requirement – is very low. This indicates that the proposed tariffs contravene Section 6.18(f)(1) concerning the costs and benefits of the proposed tariffs.

4. Actions required to ensure tariff proposals contribute to compliance

This section draws together the preceding analysis to recommend AER intervention to amend Ausgrid's proposed LV business tariffs to ensure compliance with the NER.

4.1 AER has an obligation to amend Ausgrid's proposed LV business tariffs

Proposed tariff structures impose substantial costs relative to benefits. Accordingly, they do not conform with Section 6.18.5(f)(1).

None of Ausgrid's proposed LV business tariffs would result in cost reflective network prices for Evie sites, and many other customers. Current Ausgrid tariff policies for reassignment between structurally identical demand tariffs based on usage do not conform with NER 6.18.4 principles for assignment on usage profiles.

A reasonable final AER decision would require the withdrawal of all proposed demand and premium flat tariffs (where available) to LV small customers with interval meters, including Evie sites. Instead, AER could exercise it prerogative under 6.18.8(b) and 6.18.8(c) to direct Ausgrid to amend the TSS or amend the TSS itself.

Appendix 1. Deriving average unit prices

In order to make a comparison of prices between customer types and Evie sites as accessible as possible we have expressed customer costs in terms of average unit prices (dollars per kWh consumed) for actual bills paid. Average unit prices represent total cost over a given period (year) divided by total volume.

No method that "normalises" complex electricity tariffs between customers is perfect, each introduces its own assumptions and errors regarding customer's usage profiles (behaviours) and aggregate volumes. This method represents each customer (type/site) with a single number on a comparable basis while including customer profiles.

Evie's unit costs

The estimated Evie total costs employ Evie's actual billable quantities for each tariff component of the tariff for that site at the time of the May 2023 report. These quantities are multiplied the tariff prices are drawn from the indicative prices included in Ausgrid's revised TSS proposals dated 30 November 2023. These total costs are converted to unit costs, shown in Figure 3, employing the total volume quantities.

Ausgrid's average unit revenues

The average unit prices for the low voltage tariff customer groups are calculated using the data in Ausgrid's annual SCS pricing models for FY2023 and FY2024 submitted in 2022 and 2023 respectively. These models calculate aggregate network revenues in calculations similar to that used for Evie, that is aggregate quantities and prices by tariff and tariff component. Hence revenue can be subtotalled by the type of tariff component, tariff or tariff class (e.g. low voltage and low voltage business).

Each model has actual data for two historical years, estimated data for the incomplete current year at time of publication, and forecast data for the pricing regulated approval year. Data for the current (estimated) 2023-24 year has been employed in Figure 8 and Figure 9.

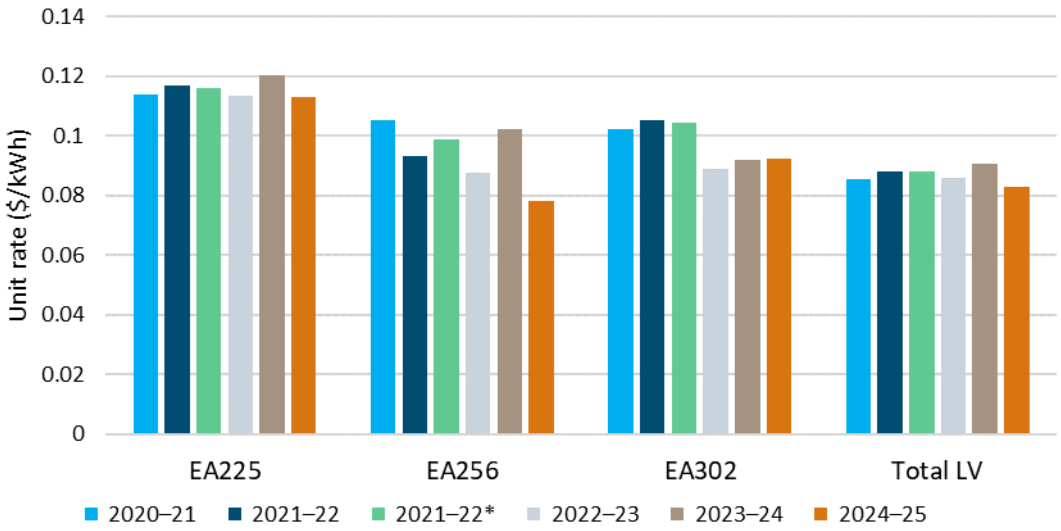
The extrapolation from 2023/24 volume forecasts to derive 2024/25 unit prices using revised TSS charging parameters introduces some errors, due to the data not being coincident with either the Evie quantity data and preceding tariff rates. However, this error is small compared with the size of price discrimination applied to Evie.

In addition, the time series analysis in Figure 8 and Figure 9 below indicate that the relativities are reasonably constant. In these charts the additional 2024-25 year has been obtained by substituting the TSS indicative pricing for each tariff and tariff component into the AER pricing model using the quantities data for 2023-24 year.

Figure 8 shows the average unit price, while Figure 9 below shows the proportion of total revenue obtained from premium tariffs components for the relevant small business tariffs, compared with the revenue proportion for Ausgrid's mass market (low voltage) customer base overall.

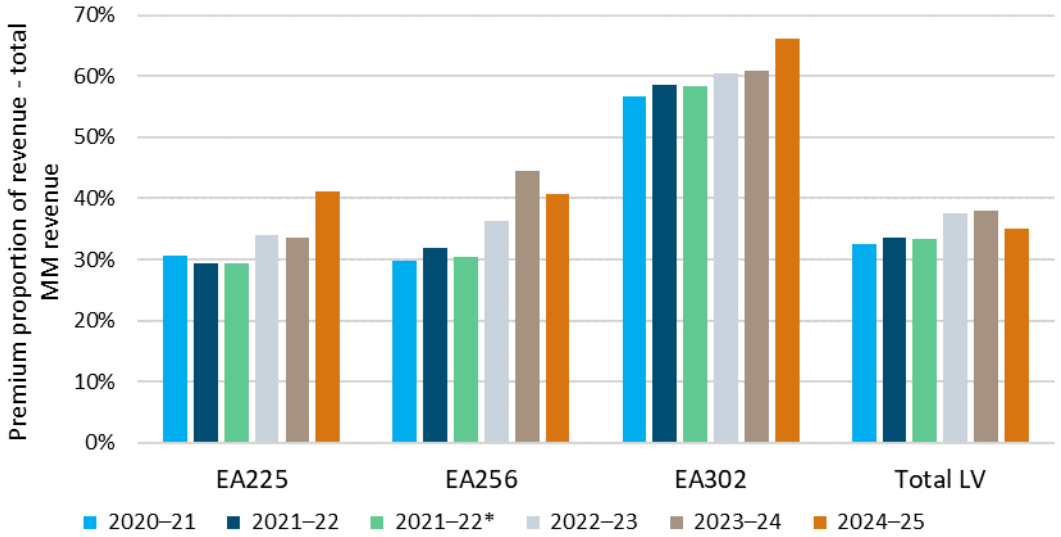
This highlights substantial price discrimination to the detriment of EA 302 and moderate discrimination to the detriment of EA 225 and EA 256 under the proposed tariff structure for 2024-25.

Figure 8 Average unit price of Ausgrid tariffs



Source: *MJA analysis, Ausgrid annual SCS pricing model, 2022-23 & 2023-24 revised*
** indicates 2 actual data published in subsequent SCS pricing models.*

Figure 9 Continuing high proportion of revenue from premium components of Ausgrid tariffs



Source: *MJA analysis, Ausgrid annual SCS pricing model, 2022-23 & 2023-24 revised*
** indicates 2 actual data published in subsequent SCS pricing models.*

An analysis of Evie's current electricity network bills compared with its demand profiles for its NSW sites was undertaken to assess whether Evie's current NSW electricity network bills are cost reflective in accordance with the Rules. This analysis compares the premium charges for Evie sites in the structures of their network tariffs compared with the demand profiles of those sites indicating the potential contribution of Evie sites to customer behaviour driven network augmentation.

The analysis in this report is based on Evie's consumption and billing data as available from a total of 30 sites across the three networks. The sites were selected based on data availability, not other criteria. Where available, Evie's retailer provided consumption data and a breakdown of the network component of retail bills. Twenty-one sites have sufficient billing data to undertake the analysis. Other Evie sites operate within embedded networks such as shopping centres and do not receive separate network bills. Ten sites currently have sufficient interval data for local zone substations (ZS) that match the Evie site.[24][25][26] The data and methodology are detailed in Appendix 1.

Evie demand profiles were generated for each of the 10 sites and these were compared with the corresponding demand profiles for the ZS supplying each Evie site. The interval data is analysed to understand the maximum demand diversity between Evie and DNSP assets, that is the different timing of peak demand at each asset and the potential contribution of Evie sites to ZS augmentation. ZS profiles were selected because augmenting ZS and associated feeders typically represents the most significant component of network augmentation (or replacement) expenditure when forecast future demand exceeds the firm capacity of the ZS (and associated feeders). This aligns with industry practice as documented in Distribution Annual Planning Reports (DAPR).

While it is possible that these comparisons at other Evie sites could differ from the 10 analysed so far for this report, this is considered unlikely. This is because Evie's demand profiles are not related to periods of very high cooling or heating demand (i.e., peak demand days in summer and winter) and the daily evening peak.

[24] Interval data are measurements of power/energy consumption at half or quarter hourly intervals

[25] While networks are required to publish ZS interval data annually in the regulated planning process, the data is historic at the time of publication and in one case may not be up to date with the regulation requirement.

[26] Some sites operate within embedded networks such as shopping centres and do not receive separate network bills.

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