

Submission by Evie Networks

To The

Australian Energy Regulator

On Its

Draft Decision

On

NSW DNSP's 2024-29 Pricing Proposals

2 February 2024

INTRODUCTION

Evie Networks welcomes the opportunity to respond to the AER's Draft Decisions on the NSW DNSPs' 2024-29 Tariff Proposals/Tariff Structure Statements and, in particular, its draft decision on Ausgrid's initial tariff proposals. Evie also welcomes the opportunity to respond to amended tariff arrangements for publicly available EV charging sites submitted by Ausgrid in November 2023.

Regrettably the AER's analysis is fundamentally flawed as it:

- Is based on an outdated precedent (its 2021 Victorian DNSPs' tariff determinations) which was decided under the "old" National Energy Objectives (NEO) which did not contain a specific Emissions Reduction Objective.
- Is not consistent with the Ministerial decisions concerning the introduction of the new NEO with this specific Emissions Reduction Objective and the associated requirement for the AER to specifically consider Government emissions reduction targets that contain components dealing with EVs and EV charging infrastructure.
- Contains a number of errors with respect to its interpretation/application of the National Electricity Rules (Rules).
- Misrepresents Evie's position as set out in its May 2023 submission to the AER.

Analysis prepared by Marsden Jacobs (accompanying this submission) contains detailed analysis and key findings which demonstrate that:

- Ausgrid's proposed tariff structures that would be applied to Evie (and other Charge Point Operators) are not cost reflective and, therefore, are inconsistent with the National Electricity Rules (the Rules).
- The effect of these tariffs is to apply a price premium through the use of Demand and Capacity Charges that cannot be justified as (i) maximum Evie site demand occurs well outside times of the greatest utilisation of the relevant network assets and (ii) forecast growth expenditure over the 10 years to 2034 is negligible and, thus, the associated price premium is a charge for non-existent costs. The relevant tariffs are, therefore, not cost reflective and inconsistent with the Rules.

Marsden Jacobs also noted that:

- The benefits of Demand, Capacity and other peak tariff charges are close to zero, but the consequential loss in asset utilisation and dynamic efficiency is substantial. Therefore, the proposed tariff structures do not satisfy the NER requirement that benefits exceed costs.
- "None of Ausgrid's proposed LV business tariffs would result in cost-reflective network prices for Evie sites. 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 of 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.b(b) and 6.18.8(c) to direct Ausgrid amend the TSS or to amend the TSS itself".

- “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”.

And analysis by Evie of the latest tariff proposals by Ausgrid and the relevant Essential Energy and Endeavour tariffs shows the high cost resulting from NSW DNSPs’ tariffs. Materials presented in this submission, which show the cost profiles across the 3 NSW DNSPs, demonstrate the particularly significant adverse impact of the 160MWh pa threshold. Evie can provide the AER with these detailed materials for discussion on the adverse impact of the NSW DNSPs’ tariff proposals.

Evie would highlight here that both the AER and Ausgrid have incorrectly claimed that Evie supports a 160MWh pa threshold. Evie has never supported a 160MWh pa for all of the reasons set out in its May 2023 submission to the AER, with Evie’s position being supported by the very different load characteristics of publicly available EV charging sites and the very different technology employed versus traditional business; these arguments are again detailed in this submission. Further, the Marsden Jacobs analysis presented to the AER in May 2023 and with this submission demonstrate that the DNSPs’ tariff structures and assignment positions are inconsistent with the Rules.

The analysis presented here:

- Supports Evie’s very strong view that the application of “traditional” business tariffs with Capacity or Demand Charges to EV charging sites is not appropriate and is inconsistent with the Rules and the associated Pricing Principles.
- Supports the adoption of a specific tariff for publicly available EV charging sites because of their unique Load (Usage) Profile and Technology – which is very different from “traditional” businesses.
- Demonstrates that this specific tariff would not involve any subsidy.

The new NEO reinforces this conclusion. The new NEO now contains a specific Emissions Reduction Objective that “extends” to State and Federal Government policies on EVs and publicly available EV charging infrastructure in the context of reducing emissions. As a result, the AER is required to take account of these State and federal Government policies in its decision making – but it is failing to do so.

Based on the materials presented in this submission, and reinforced by the new NEO, it is submitted that the AER should:

- Reject the tariff structures and assignment arrangements presented by the 3 NSW DNSPs in terms of their application to publicly available EV charging sites. The AER has the ability under NER Clauses 6.18.8 (b) and 6.18.8(c) to direct a DNSP to amend its tariff Structure Statement or amend the relevant TSS itself.
- Support the introduction of a specific tariff that would facilitate the rollout of publicly available EV charging sites ahead of the demand for EVs in recognition of the important role this infrastructure plays as part of Government emission reduction policies in the Transport Sector, as well as jurisdiction-wide emission reduction policies and targets. This specific tariff would apply to Charge Point Operators only, with minimal revenue impact (both directly and in terms of revenue rebalancing impacts on other customers’ bills).

Continued failure by the AER to do so will necessarily undermine the achievement of State and Federal Governments 2030 emissions reduction targets.

EVIE'S RESPONSES TO THE AER'S DRAFT DETERMINATION

AER 2021 Precedent

At page 16 of its Ausgrid Draft determination Attachment 19 (tariff structure statement) the AER states:

"Ausgrid is managing this anticipated increase in EV load by progressing its tariff reform broadly rather than by establishing specific tariffs for EV owners or charge point operators. We support this approach and consider it aligns with the NER's principles that customers with a similar connection and usage profile be treated equally.....Consistent with the AER's determinations for the Victorian electricity distributors' 2021-26 tariff structure statements, we do not support the introduction of discounted tariffs for EV owners or EV charge point operators. Rather, we support the continued implementation of cost reflective tariffs for these customers".

That is, the AER is referencing its Victorian DNSPs' 2021-26 final determination as a precedent to support its latest draft determination. However:

1. In its May 2023 submission to the AER, Evie set out in detail the change in circumstances (developments) that had occurred since this 2021 decision was taken – but the AER has failed to address any of the details presented in that submission. It is simply "endorsing" an out-of-date determination made under very different circumstances and governing arrangements.
2. This Victorian decision was made under circumstances that are very different from today as follows:
 - In 2021 the primary focus of the AER in terms of cost reflective tariffs in Victoria was peak demand, whereas the AER would now give virtually equal weighting to peak demand and the need to address issues with Minimum Demand caused by excess solar during the day (commonly described as the "Duck's belly"). AEMO's Quarterly Energy Dynamics Q4 2023 highlighted that NSW (and Victoria and SA) recorded all-time Minimum Demand in the December quarter 2023. The issues around managing Operational (Minimum) Demand warrant a fundamental review as to how the AER has previously interpreted the Pricing Principles (as set out immediately below).
 - The decision was made under the "old" NEO – and, therefore, under a very different policy framework than today. The AER is required under the new NEO and the associated materials on its implementation prepared by the Australian Energy Market Commission (AEMC) to specifically consider Government emissions reduction targets that contain components dealing with EVs and EV charging infrastructure.
 - Data availability on Load Profile: The AER stated in its 2021 Victorian determination that there was insufficient data available to assess the Load characteristics of publicly available EV charging stations and, therefore, whether their load profiles were different from "traditional" businesses. At the time of the commencement of the AER's Victorian determination, Evie had 20 operational sites. Today it has over 200 sites in operation – a tenfold increase. This "lack-of-available-data" argument therefore no longer applies. However the AER has not taken any steps to now access this data.

Implication of Managing Operational Demand for Application of Pricing Principles

The need to address the management of Operational Demand (or Minimum Demand) due to increasing levels of household solar generation is particularly important in relation to Voltage Control, with DNSPs then needing to install costly voltage control equipment.

This issue was highlighted by AEMO in April 2020 in its Renewable Integration Study (RIS) Stage 1 Report. In Appendix A of that report AEMO noted that as distributed PV penetration (ie, household solar PV) increases, there may be operational challenges associated with insufficient load to maintain power system security.

The issue was addressed in detail in SAPN's April 2022 "Emergency Standards cost pass through application" to the AER and the AER's September 2022 Determination on that application which approved additional costs.

SAPN particularly noted in its application that "this continuing growth in DER connected to the South Australian distribution network also presents serious power system security and security of supply issues".

It referred to a number of reports prepared by AEMO on the matter, with AEMO presenting a number of recommended actions, including:

- The implementation of "enhanced voltage management" (EVM) across the distribution network in South Australia.

This issue is further highlighted in the AER's SAPN 2020-25 final determination and the WA regulator's final decision on Western Power's tariff proposals, as well as in Ausgrid's document "Our TSS Explanatory Statement for 2024-29".

This growing problem with low levels of Operational Demand is demonstrated in the following materials from AEMO's latest Quarterly Dynamics (Q4 2023) report, with AEMO noting:

- "...operational demand is Q4 2023 still stands as the second lowest average for any quarter since.....2005" (Page 8).
- "The NEM saw its all-time lowest minimum demand...on Saturday 29 October 2023.....At this time distributed PV accounted for 51.3% of the underlying demand across the NEM. New South Wales, Victoria and South Australia also recorded all-time minimum demand records this quarter, driven by higher distributed PV output" (Page 10).

And this trend in falling levels of Operational (Minimum) Demand is expected to continue, with AEMO noting in its Draft 2024 ISP (released in December 2023) that "Distributed PV system uptake...is forecast to continue and further reduce daytime operational demand"; Appendix 4, System Operability, Page 10.

Figure 3 Strong growth in underlying demand partially offset by record distributed PV output

NEM average underlying and operational demand – Q4s

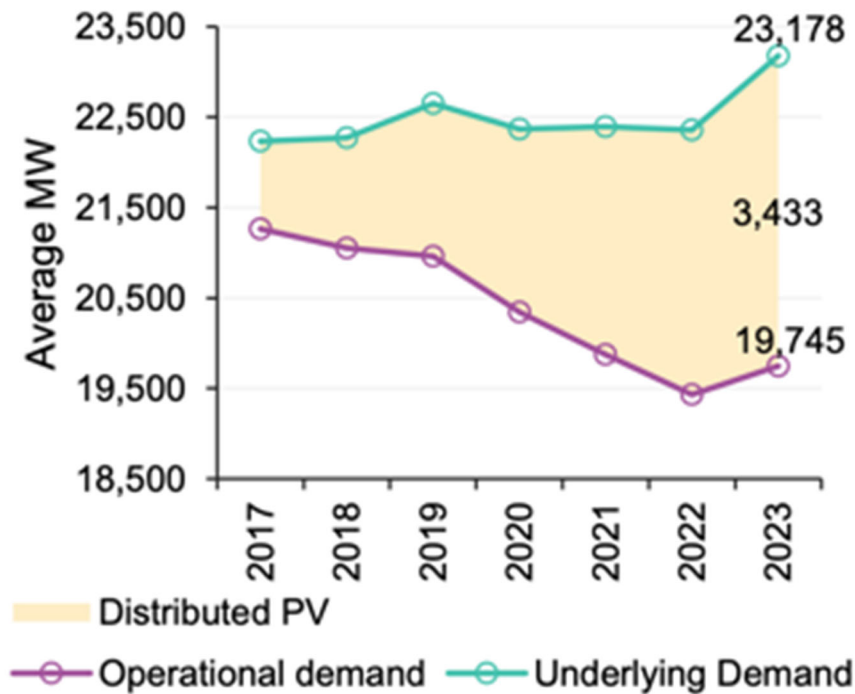
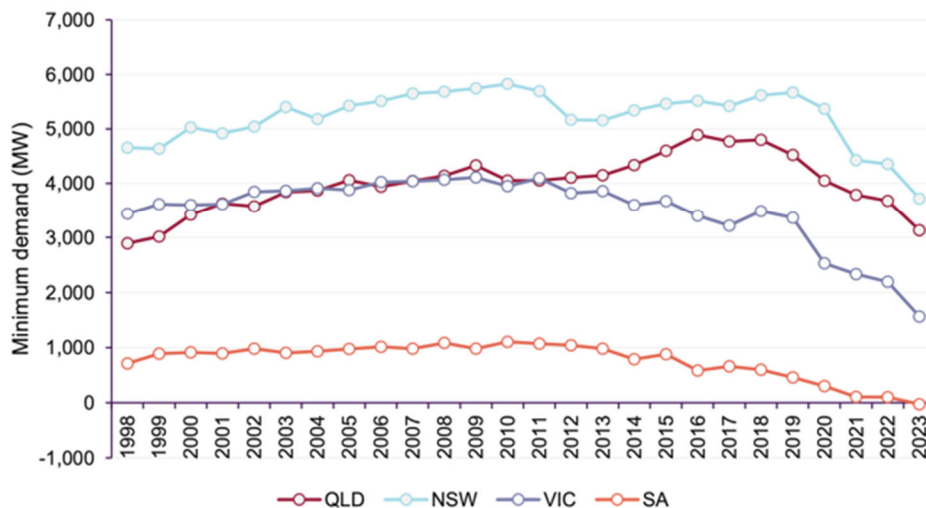


Figure 7 Minimum demands fell to record lows in New South Wales, Victoria and South Australia
Q4 minimum operational demands for mainland regions

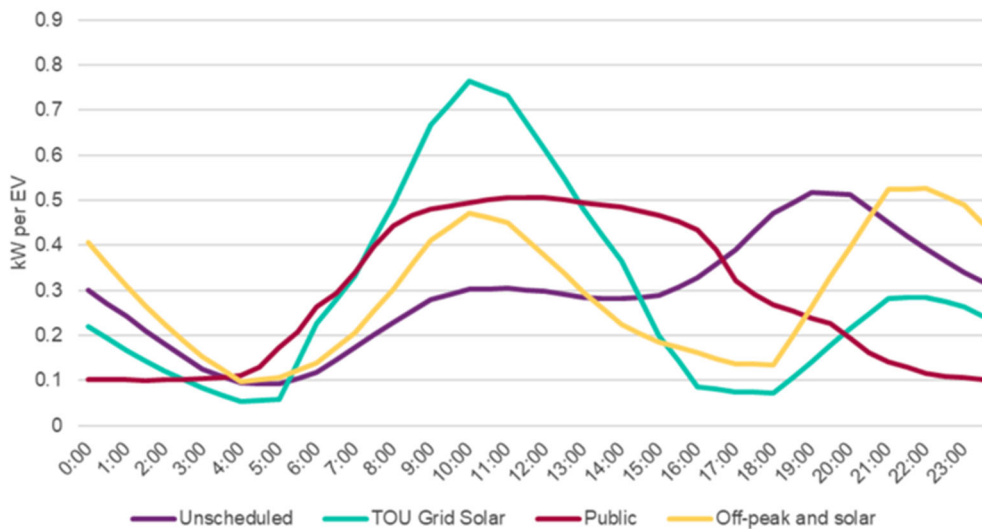


As set out in Evie’s May 2023 submission (pages 14-17 inclusive), publicly available EV charging sites are helping to deliver **Network Avoided Costs** (ie, cost savings for the DNSPs in areas such as Voltage Control Equipment) by helping to address this issue of the need to manage falling levels of Operational Demand as charging at publicly available EV charging sites is generally coincident with solar generation (with Evie’s referencing materials prepared for ARENA to demonstrate this position, as well as materials prepared by Ergon/Energex).

It is noted in this context that AEMO specifically references in its Draft 2024 ISP (released December 2023) how “more widespread availability of (EV) charging infrastructure” would help shift EV driver charging patterns away from convenience charging (ie, home charging after return home from work) to middle-of-day charging; see Appendix 4, Page 10.

And AEMO’s Draft 2024 Forecasting Assumptions Update (also released December 2023) provided a chart that also highlights how usage of publicly available EV charging sites is generally coincident with the timeframe for solar generation and falls away in the period coming into evening peak:

Figure 16 Static charging profiles of different EV charging types for medium residential vehicles in New South Wales normalised to 7 kilowatt hours (kWh)/day



Evie’s May 2023 submission also highlighted the importance of **Network Efficiency Benefits** that flow from new areas of demand being delivered through existing (surplus) capacity.

It is further noted that excess household solar generation is also increasingly leading to curtailment of large scale renewables – with associated inefficiencies. This was referenced in AEMO’s Draft 2024 ISP (Appendix 4, System Operability, Page 15), with AEMO stating:

“Modelling undertaken for the Draft 2024 ISP forecasts instances where VRE generators will not operate at maximum potential capacity. There are a range of reasons for this, including: Periods when VRE resource potential exceeds demand, particularly at times of low operational demand.....”.

This is a particularly important point in terms of how the Pricing Principles should **now** be considered by the AER, but it is simply failing to do so as it appears to be “wedded” to the narrow approach it adopted in its 2021 determination.

The Network Pricing Objective as set out in Clause 6.18.5 specifically states that DNSP tariffs should reflect the DNSPs' "efficient costs of providing those services to the retail customer".

Evie continues to submit that based on the above considerations and developments, this reference to "efficient costs" should **now** include consideration of Network Avoided Costs and Network Efficiency Benefits.

Ie, the concept of "efficient costs" should **now** be interpreted as "**net** efficient costs" in recognition of the important developments in these 2 areas - but the AER is failing to recognise this important additional consideration that necessarily follows from issues concerning the need for DNSPs to increasingly manage Minimum Demand because of excess household solar generation during the day driving down Operational (or Minimum) Demand levels.

It is noted here that the importance of Network Efficiency Benefits flowing from EVs has been highlighted by the **Energy Consumers' Association** in a number of recent publications. It is acknowledged that the ECA's position should principally be seen in the context of households, but its overall arguments on Network Efficiency Benefits apply to both public charging and household charging.

For example:

It its September 2022 Electric Vehicle Smart Charging Issues Paper - for Consultation, the ECA stated (page 6; emphasis added):

Structural improvement in network capacity utilisation

Australia's poor network utilisation rates reflect decades of growth in the use of air-conditioners on the hottest days, and the hollowing out of consumption by households with solar generation. This can only worsen as increasingly consumers also move to electrify their heating needs, further potentially contributing to the "peakiness" of the electricity network.

The widespread adoption of EVs provides an opportunity to offset these impacts and achieve lower current and future network costs for all Australian households and small businesses, including those who do not own or drive electric cars (or have solar generation).

Transportation electrification increases network value in a way that may significantly benefit all consumers in the long-term.

Most retail electricity pricing is charged volumetrically, that is, on a dollar per kilowatt hour (\$/kWh) basis, outside of the fixed supply charge or in retail tariff structures which include a kilowatt demand charge for some or all of the network component. There are two ways to lower such a price: reduce the total costs of the energy system (the numerator) more rapidly than the volume of energy decreases or **increase the amount of energy that flows through the system (the denominator) more rapidly than costs increase.**

This position on Network Efficiency Benefits was further highlighted in the following ECA materials:

- Submission to South Australia's Green Paper on the energy transition in August 2023.

- Submission on the Federal Government's National Electric Vehicle Strategy Consultation Paper.
- Report: Stepping Up: A smoother pathway to decarbonising homes, August 2023.

This last mentioned report drew on research the ECA had commissioned from the CSIRO (Consumer impact of the energy transition: modelling report) which concluded (page v; emphasis added):

"Electrification of vehicles and of gas appliances adds more to the volume of electricity sold than it does to peak demand growth. This leads to higher utilisation of existing electricity infrastructure, particularly of the distribution network sector, which means that distribution networks can reduce the price per unit of energy delivered through their grid".

Evie therefore submits that this position from a key stakeholder on how EVs deliver significant network efficiency (and cost) benefits should serve to re-inforce the veracity of the arguments being presented as to why the AER should now review its approach to implementing/interpreting the NER Pricing Principles.

It is also noted here that AER staff have submitted directly to Evie personnel that "Flat tariffs (ie, for charging EVs at publicly available EV charging sites) throughout the day, in the absence of other incentives, don't seem to support the achievement of improved network utilisation". This reflects the AER's "traditional" view that flat tariffs do not reflect the relatively higher costs of a network built to supply electricity during peak periods; see AER State of the Energy Market 2023 report (page 92). However:

- The AER also notes in its State of the Energy Market 2023 report (page 92) that tariff reform was initially focussed on signalling costs during peak demand periods, but "Recent reform has involved sending price signals to efficiently integrate consumer energy resources.....into distribution networks. This includes sending price signals to encourage the use of solar energy in the middle of the day to avoid excess solar (minimum demand) on the network".
- Publicly available EV charging sites with flat tariffs are already acting as a "solar soak" as charging at publicly available EV charging sites is, as noted above, generally coincident with solar generation, with consequential network benefits in terms of Network Avoided Costs and Network Efficiencies which are beneficial in terms of long term costs faced by all electricity customers.
- Curtailability is in operation now because of new technology at publicly available EV charging sites which is able to address concerns about publicly available EV charging sites adding to critical peak demand.

Evie therefore strongly believes that the AER should:

- Acknowledge that publicly available EV charging sites are already delivering substantial network utilisation benefits which are beneficial in terms of long term costs faced by all electricity customers.
- Therefore, specifically recognise this in terms of the network tariffs to be applied to publicly available EV charging sites and, thus, accept that "traditional" business tariffs and their associated Demand Charges are not appropriate for this very new industry that employs a very different technology from other businesses that allows demand to be curtailed on peak demand days.

The New NEO

Various materials prepared by the AER in 2023 demonstrate that it has decided to adopt a very narrow interpretation of its role in terms of the application of the new NEO. This assessment has been re-inforced by discussions between Evie and AER personnel, as well as additional materials provided to Evie from Government sources.

The AER draft guidance for consultation on the application of the new NEO restricted its focus to the Expenditure side of the Regulatory Determinations it is currently considering. But regulatory determinations consider both Expenditure and Revenue (Tariffs) – as clearly demonstrated by the AER making specific, and very detailed, decisions on DNSPs' Tariff Structure Statements. This can be particularly seen from the AER's own words in its State of the Electricity Market 2023 report where it sets out its role in electricity network regulation, with this including "assessing distribution network charges" (page 85), and also notes that "Distribution network service providers are required to submit their tariff structure statements to the AER every 5 years, as part of the wider revenue determination process" (page 92).

In addition:

1. In its responses to submissions on its draft guidance for consultation document, the AER stated:

"We consider the National Electricity Rules' pricing principles are already fit-for-purpose for the change in the national electricity objective".

Ie, the AER is maintaining that the pricing principles in the National Electricity Rules are fit-for-purpose, in the context of the new, amended, NEO. However this is simply an assertion. It is not backed up by any supporting analysis.

Evie submits that given the significance of the achievement of Government emissions reduction targets for the Transportation Sector and the overall level of emissions, the AER – as an important public institution – should be required to fully demonstrate its position through detailed analysis, which would then be open to review.

2. In its draft determination on Ausgrid's 2024-29 tariff proposals, the position adopted by the AER in terms of the application of the new NEO is passive - rather than acting to facilitate an outcome in terms of promoting the new Emissions Reductions Objective in the new NEO; see Overview, Page x. And it effectively downplays the significance of the new NEO by stating in its Overview that "the NEO guides our work" (Overview, Page 30).

However this passive/guidance-only position is inconsistent with:

- An earlier position of the AER where it has stated (emphasis added):
 - "The NEL **requires us** to make our decision in a manner that **contributes to the NEO**"; AER Framework and approach: SAPN regulatory control period commencing 1 July 2025. page 7.
- The December 2022 Ministerial Consultation Paper on the new NEO which specifically stated (emphasis added):
 - "The AER's economic regulatory decision-making functions and powers as outlined in the Rules **will need to be performed and exercised in a way that will, or be likely to, contribute to the achievement of the NEO....**" (ie, the new NEO).

3. The AER’s draft determination fails to follow the requirements established by Ministers on the implementation of the new NEO.

The materials provided by the AEMC on the application of the new NEO as set out in its 23 September 2023 document “Emissions Targets Statement Under The National Energy Laws”, page (i) states that “the market bodies” (which includes the AER) “must consider, **as a minimum**, the targets in this target statement”; emphasis added.

Additionally, the AEMC’s webpage on the new NEO states (emphasis added):

“Under the [national energy objectives](#) set by the National Energy Laws, the AEMC must prepare and maintain a targets statement, stating the targets set by participating jurisdictions:

- for reducing Australia’s greenhouse gas emissions; or
- that are likely to contribute to reducing Australia’s greenhouse gas emissions.....

“All entities that apply the energy objectives (including the AEMC, AEMO and **the AER**) **must, at a minimum, consider these targets when having regard to the emissions component of the energy objectives.**”

Importantly, the AEMC’s document “Emissions Targets Statement Under The National Energy Laws” sets out direct targets for each jurisdiction in terms of reducing Australia’s greenhouse gas emissions, as well as indirect targets (ie, targets that are likely to contributing to the reduction in Australia’s greenhouse gas emissions).

This document has now been updated (as at 1 February 2024) to include a new 2035 emissions target for NSW. The new target is to reduce net greenhouse emissions in NSW by at least 70% from 2005 levels by 30 June 2035 (and with a Net Zero by 2050 target). It was introduced by legislation that passed the NSW Parliament in December 2023.

Significantly the NSW Government webpage on this legislation (the [Climate Change \(Net Zero Future\) Act 2023 of NSW](#)) lists a number of associated plans, including the **NSW Electric Vehicle Strategy**.

The Strategy document states:

The transport sector is a significant and growing source of greenhouse gas emissions. In 2019, transport was responsible for 28 million tonnes of carbon dioxide equivalent (Mt CO2e) of emissions, making up 20% of NSW emissions, with almost 50% of those from passenger vehicles. Transport emissions are currently projected to become the leading source of emissions by 2035, overtaking both electricity and other stationary energy sources.

Increasing the number of EVs on NSW roads and powering them with renewable energy will help to reduce emissions across the transport sector, contributing towards the State’s objective to achieve net zero emissions by 2050.....

The strategy will prioritise overcoming the biggest barriers to electric vehicle uptake.....(including).....:

2. Range anxiety:

NSW EV drivers currently have access to around 450 public chargers across the State; however, many of these are located too far apart or charge at slower rates, meaning drivers have to wait longer before getting back on the road. Rolling out a world-class, ultra-fast charging network will give motorists confidence that they can quickly recharge their car when and where they need to.....

The strategy will be consistent with the State’s objective to achieve net zero emissions by 2050

Australia is one of 191 countries that have committed to keeping global temperature rises to well below 2°C under the Paris Agreement. The NSW Government is taking action by committing to reducing emissions by 35% by 2030 compared with 2005 levels and achieving net zero emissions by 2050 while continuing to grow the economy, create jobs and reduce the cost of living.

The electrification of light vehicles is a key pathway for decarbonising the transport sector in a way that creates jobs and reduces the cost of driving and is important to achieving the State’s net zero emissions objective.

Given that light vehicles stay on the road for around 15 years on average, moving to net zero emissions for light vehicles will require the vast majority of new car sales to be battery or fuel cell EVs by 2035.

The Federal Government’s 2030 and 2050 targets would also apply to the AER’s deliberations, and it is noted that reduction in emissions in the Transport Sector (and associated action with respect to EVs and EV charging infrastructure) are key elements of the Federal Government’s emission reduction policies/targets.

It is noted that at an AEMC forum (webinar) on “harmonising the energy rules and AEMC guide to applying the emissions component of the national energy objectives” on 7 August, 2023:

- An AEMC Commissioner specifically noted that as the “target list” of Government policies for determining the application of the new NEO would include the Commonwealth’s Net Zero Policy, this would mean that the new NEO would apply across other sectors (ie, not just the Energy Sector).
- In elaborating on this, the AEMC Commissioner specifically referenced the Electrification of the Transport Sector.

It is also noted here that AEMO, in its Draft 2024 Forecasting Assumptions Update (released in December 2023) specifically states that “All of the scenarios consider various energy policies that.....are listed in the Australian Energy Market Commission’s (AEMC’s) *Emissions Target Statement*” (page 5).

Further, the May 2023 Information Paper on the new NEO stated (emphasis added):

“Including the words “or likely to contribute to” retains the **intent that targets** that may not be promoted as primarily for reducing emissions, but which would contribute to that goal, **such as** renewable energy targets or **electricity vehicle targets could be captured**”.

This specific reference to EV targets was presumably included by Ministers for a specific reason in terms of the application of the new NEO by the AER and the other Energy Agencies with respect to their regulatory functions.

Ie, policies on EVs and EV charging infrastructure are included in these targets - and, therefore, the AER is required to consider them in its regulatory work. The AER should be taking these targets into account when considering tariffs/TSS as part of its regulatory determinations, but it has not done so in its draft determination on the NSW DNSPs. And, additionally, it cannot simply choose to apply the new NEO to only the Expenditure side of its determinations.

Evie Networks therefore submits that the AER, in line with the other energy agencies, is required to specifically consider these NSW and Federal targets in its current review of NSW DNSPs' 2024-2029 Tariff proposals and Tariff Structure Statements. However it has not.

Although WA is not part of the NEM, Evie would wish to highlight that the WA Regulator, the Economic Regulation Authority, adopted a pro-active approach to the determination of tariffs for publicly available EV charging sites in its recent determination on tariffs for Western Power. The ERA's position was that Western Power was required to introduce tariffs that would facilitate the rollout of EV charging sites.

Based on these considerations, Evie submits that as a result of the AEMC's binding position on the application of the new NEO that applies to the AER and the statements by Ministers, the AER, in its final determination on the NSW DNSPs' 2024-29 tariff proposals, should:

- Specifically address issues related to EV targets and associated policies on the importance of EV charging infrastructure.
- Therefore adopt a pro-active stance during its current review of DNSP tariffs to facilitate the rollout of publicly available EV charging sites that recognises the adverse impact of Demand and Capacity Charges (i) on network electricity costs for publicly available EV charging sites and, thus, (ii) on incentives to rollout and properly maintain this infrastructure that is so critical to addressing Range Anxiety concerns of potential EV purchasers.

Data Availability

In its 2021 determination, the AER stated (Final decision, Attachment 19, Tariff Structure Statement, Page 41) stated:

"At this stage there is insufficient information to suggest that charging stations materially differ in their load characteristics, such as annual consumption and maximum demand, from other medium to large business customers".

Since the commencement of the processes for the Victorian Determination, there has been a very significant increase in the number of EV charging sites in operation. At the start of the Victorian Determinations process in 2020, Evie had 20 operational sites. Today it has over 200 operational sites - a tenfold increase.

Therefore the additional data the AER considered was not available during the AER's consideration of the Victorian DNSPs' tariff proposals is now, over 3 years later, potentially available.

Evie referenced the above-mentioned 2021 AER statement in its May 2023 submission on the NSW DNSPs' 2024-2029 Pricing Proposals. The Evie submission then went on to highlight the difficulty in gaining relevant - and up to date - data from DNSPs to allow Evie to present a far more detailed analysis than that prepared by Marsden Jacobs, and then advised (Submission, Page 5):

"The AER may wish to consider requesting the DNSPs to provide the relevant data sought by Evie to facilitate, and expedite, this proposed expanded analysis".

The AER did not make any response to this point in its draft determinations and has not sought any advice from Evie on this issue of the availability of additional data to test the load characteristic issues it raised in 2021.

In this context, Evie would wish to highlight the very different approach followed by the WA Regulator (ERA) with respect to accessing data in the context of the development of a specific tariff for publicly available EV charging sites.

The WA Regulator's (ERA) decision on Western Power's 2022/23-2026/7 (AA5) tariff proposals specifically recognised the concept of a specific tariff for the EV charging infrastructure industry, with the ERA agreeing to the establishment of a mechanism to collect and analyse data over the AA5 period for the development of a specific EV charging infrastructure tariff to be introduced in the next regulatory period, with the ERA stating (Attachment 11: Network tariffs, Page 29; emphasis added):

"The development of public EV charging structure is at a very early stage.....However, as expressed by Evie, **Western Power will need to work with electric vehicle charging infrastructure providers during AA5 to collect and analyse data from dedicated EV charging sites. The data and analysis can then be used to further develop**, in conjunction with the electric vehicle charging infrastructure industry and engaging with both the ERA and EnergyPolicy WA, **tariffs that reflect the special characteristics of electricity demand at electric vehicle charging sites and promote the efficient use of the grid**".

Evie considers this to be particularly significant as:

- In its 2021 Victorian DNSPs' decision, the AER did not support the request for a specific tariff for the EV charging infrastructure industry, whereas the WA Regulator accepted the position presented by Evie on the need to develop such a specific tariff for introduction in the next regulatory period and the mechanism for designing this tariff, with a particular focus on data collection and analysis.
- In contrast with the position advocated by the AER in its 2021 Victorian determination, the WA Regulator did not advocate a Tariff Trial process in terms of the development of future tariff arrangements for publicly available EV charging sites.

It is also noted here that the position presented by Evie to the WA Regulator on a specific process for the collection and analysis of data is essentially in line with the position presented to the AER in 2021 by the Electric Vehicle Council (EVC) as part of the AER's review of Victorian DNSPs' tariff proposals, with the EVC setting out its position in the following terms – and with a particular emphasis on data collection and analysis, rather than Tariff Trials:

“Undertake data capture and tariff analysis to inform next regulatory reviews

“A more flexible and innovative approach is needed to determine the most appropriate structure going forward for public charging operators, EV drivers, energy consumers and DNSPs. Now is the time to consider and trial a revised approach prior to EV uptake becoming more widespread.

“The EV industry is still a new industry, charging behaviours are still emerging, and there are still few public charging operators in the market. A better understanding is needed of EV charging load, as well as how this load incurs costs onto network operators, and what impact different levels of utilisation will have on loads/costs before a long-term tariff is locked in.

“Therefore, DNSPs and public charging operators should also work together to gather more load data and test the cost reflectivity of existing and alternative innovative tariff structures to implement in the coming years.

“Some DNSPs have expressed in their proposals a willingness to conduct trials for public EV charging. The EVC is supportive of trials however when trials were proposed in the DEIP High Capacity Tariffs and Connections Taskforce, it became clear that further data and analysis was needed in order to design a trial.

“This is why **the EVC is proposing that DNSPs and the public charging industry first undertake a period of data capture and analysis**, with involvement from the Victorian Government. The Taskforce did not prove to be an appropriate channel to conduct this work due to the differences between different DNSPs, the different stages of regulatory periods, and limited engagement and appetite for this work from several DNSPs”.

Incorrect Interpretation of Key Rules: Tariff Assignment: NER Clause 6.18.4

A key argument presented by the AER in rejecting Evie’s position (Ausgrid draft determination, Attachment 19, Pages 16 and 31) is that:

- The Rules require customers with a similar connection and usage profile to be treated equally, with the AER referencing (only) NER Clause 6.18.4 (a) (2).
- Charge point operators therefore cannot be treated differently to other industries with similar demand and consumption profiles.

It is noted that a similar position was presented by the AER in its 2021 Victorian DNSPs’ Determination – but with an important difference explained below.

However, as set out in detail in Evie’s May 2023 submission to the AER and re-stated below, publicly available EV charging sites have a very different usage profile compared with other businesses which would justify the introduction of a specific tariff for this new industry, and that this would be consistent with the National Electricity Rules Clause 6.18.4.

In its Victorian DNSPs’ 2021-2026 determination (Attachment 19, Tariff structure statement, pages 19-40 and 19-41), the AER cited the combination of NER Clause 6.18.4 (a) (1) and NER Clause 6.18.4 (a) (2) in its reasoning for rejecting the argument that EV charging sites should have a separate tariff based on this very different usage or load profile.

But in doing so, it relied on a misinterpretation of Clause 6.18.4 (a) (1) to justify the application of Clause 6.18.4 (a) (2).

The AER stated in its Victorian determination that Clause 6.18.4 (a) (1) “requires networks to establish tariff classes which group consumers according to their load, connection **and** metering characteristics” (emphasis added). But this provision clearly does not require that all 3 characteristics apply, with 1 being sufficient; see below for further details. The AER then used this incorrect interpretation of Clause 6.18.4 (a) (1) to apply Clause 6.18.4 (a) (2).

In its NSW DNSPs’ 2024-2029 draft determination, the AER only references NER Clause 6.18.4 (a) (2) - and, therefore, makes no reference to Clause 6.18.4 (a) (1). As a result, it fails to address how Clause 6.18.4 (a) (1) allows tariff assignment on the basis of Usage alone.

Clause 6.18.4(a)(1) states (emphasis added):

(a) In formulating provisions of a distribution determination governing the assignment of retail customers to tariff classes or the re-assignment of retail customers from one tariff class to another, **the AER must have regard to the following principles:**

(1) retail customers should be **assigned to tariff classes on the basis of one or more of the following factors:**

- (i) the nature and extent of their **usage or intended usage** of distribution services;
- (ii) the nature of their *connection* to the network;
- (iii) whether remotely-read interval metering or other similar metering technology has been installed at the retail customer's premises as a result of a regulatory obligation or requirement;

Ie, Clause 6.18.4(a)(1) provides that a tariff class is not determined by load, connection **and** metering characteristics, as claimed in the 2021 Victorian determination, but rather on the basis of “**one or more**” of these characteristics.

Evie therefore submits that the AER has erred in a number of areas with respect to the application of Clause 6.18.4 and that this provision would allow the introduction of a separate tariff for publicly available EV charging sites. Specifically:

- Clause 6.18.4 (a) (2) should be read in conjunction with Clause 6.18.4 (a) (1) - and **Clause 6.18.4 (a) (1) allows tariff assignment on the basis of usage alone;** ie, it is incorrect to reference Clause 6.18.4 (a) 2 in isolation in its current draft determination and the 2021 Victorian determination was incorrect in both its description, and application of Clause 6.18.4 (a) (1).
- The connection and usage profile of publicly available EV charging sites is unique and, therefore, they cannot be “lumped in” with any similar services/customers.

Evie also noted in its May 2023 submission that in its April 2021 Victorian DNSPs’ decision (at page 19-40), the AER referenced that “a number of other industries besides electric vehicle charging stations such as irrigators and medical imaging facilities” also had peaky demand with low overall usage. Evie’s May 2023 submission then went on to highlight that:

- Publicly available EV charging sites operate on a 24/7 basis and, of course, are a customer facing business.
- Thus the charging infrastructure industry necessarily has a very different usage pattern compared to these other sectors, re-enforcing the argument in favour of a separate specific tariff for this new industry based on its particular (ie, very different) usage characteristics.

Additionally Evie's May 2023 submission detailed the ability of Evie (and other CPOs) to curtail the energy demand at the EV charging sites on peak demand days (and this is set out in further detail below).

This capability demonstrates that EV charging stations are not like other "peaky load customers".

The AER has not addressed these detailed arguments as to the very different Load or Usage Profile of publicly available EV charging sites in its draft determinations on the NSW DNSPs' 2024-29 tariff proposals. It is simply continuing an incorrect interpretation of the Rules in its 2021 Victorian DNSPs' determination.

Incorrect Representation of Evie's Submission/Proposal

In its draft decision on Ausgrid's 2024-29 tariff proposals, the AER noted that it did not support the introduction of discounted tariffs for EV Charge Point Operators (Attachment 19, Page 16) and that Evie "supported an EV charging station-specific (discounted) tariff for EV charging stations in NSW" (Attachment 19, Page 31).

Evie considers that this is a major mis-representation of the position it presented in its May 2023 submission as that submission detailed the basis on which a specific tariff for EV charging sites should be introduced and how this would not represent a subsidy (or "discount").

As previously presented (in the May 2023 submission and in this submission), the key arguments that support the introduction of a specific tariff for EV charging sites are:

- The very different usage profile of publicly available EV charging sites would justify the introduction of a specific tariff for this new industry, and that this would be consistent with the National Electricity Rules (Clause 6.18.4).
- The network benefits provided, both directly and indirectly, through the operation of EV charging sites that flow to all consumers, not just EV drivers, would mean that the introduction of a technology-specific tariff for publicly available EV charging sites should be considered to be consistent with the NEM Rules (Clause 6.18.5 on Pricing Principles).

The May 2023 submission highlighted that:

- 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.
- But the uptake of EVs, enabled by the availability of well planned, affordable public fast charging, would deliver significant benefits for electricity networks and, ultimately, all electricity consumers.

In summary, these benefits include:

- Long term increased utilisation of electricity networks, creating network efficiency benefits.
- Avoiding network costs such as voltage control to help manage low Minimum Demand levels caused through “excess” solar generation by helping to absorb this excess solar generation, as public fast charging typically peaks in the middle of the day.
- Improved local network stability, as fast charging often requires grid augmentation that is funded by the charging network operator.
- Controllable technology, allowing peaks to be managed dynamically and at short notice with the result that publicly available EV charging sites can be managed through dynamic load control at critical peak periods.

Evie’s May 2023 submission further noted:

- The network efficiency benefits through greater utilisation, as well as significant avoided network costs, would mean lower costs can be passed on to all electricity consumers, not just EV owners.
- Going forward, EVs will play a major role in relation to CER, 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) – with this having the potential to result in significant additional avoided network costs, which will further benefit all electricity consumers, not just EV owners. Therefore, given the important role that public charging plays in supporting demand for EVs by assisting in addressing potential EV purchasers’ concerns about Range Anxiety, the EV charging infrastructure industry will increasingly help deliver significant benefits going forward that will flow through to all electricity consumers. Evie notes that AEMO’s Draft 2024 ISP sees a significant role for EVs in terms of providing storage capability over its forecast period.

Evie also notes that the AER (and Ausgrid) has incorrectly claimed that Evie supports a tariff assignment threshold of 160MWh. Evie strongly submits based on MJA analysis in its May 2023 report and its current report now that no threshold should be applied at this stage in the EV charging infrastructure industry’s development.

Traditional Business Tariffs Not Suited For EV Charging Infrastructure Industry

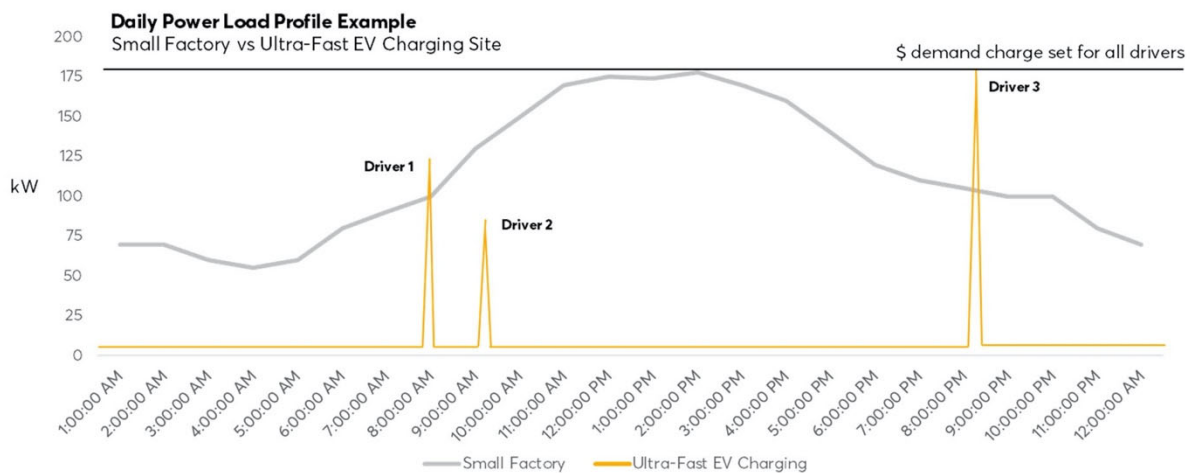
The EV public fast charging infrastructure industry is still relatively new in Australia, and because of the still relatively low level of EVs on the road, infrastructure providers must necessarily build out their sites ahead of demand. Additionally, this early provision of highly visible publicly available fast and ultra fast EV charging sites is critical to addressing concerns about Range Anxiety which, in turn, is a key factor in the decision to purchase an EV.

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 (or Demand) Profile of public fast charging is very different from “traditional” small and medium businesses.

Because the tariffs that are currently applied to small and medium businesses are not suited to this new industry, they result in very high electricity costs for publicly available fast, and ultra fast, EV charging sites.

The graph below sets out the differences in the impact of a traditional business tariff containing a Demand or Capacity Charge on a small factory versus an EV charging station.

Illustrative example of ultra-fast load profile while EV uptake is low



The Demand or Capacity Charge is generally based on the customer’s highest recorded demand in any hour or half-hour period on a rolling 12 months basis, irrespective of whether or not that peak occurred during a network peak demand event.

As EV charging load profiles do not resemble typical Commercial and Industrial (C&I) use cases, when Demand or Capacity tariffs are assigned, the result is very high electricity costs. This is because the Demand or Capacity charges are necessarily amortised over a small number of users.

Given the very different Load Profile of publicly available EV charging sites, Evie continues to submit that there is a strong case for the introduction of a specific tariff for this new, fledging industry.

As the technology is highly controllable (as set out below), it is further submitted that a technology specific tariff would also be justified.

It is noted here that in its decision on Western Powers’ tariffs for 2022/23-2026/27, the WA Regulator specifically stated:

“.....low utilisation of the charging station during the initial uptake of electricity vehicles can make existing demand-based tariffs unaffordable due to the level of fixed charges” (Overview, page 4).

Curtailability

Technology to control public EV charging already exists and is in operation today. 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.

Ie, public EV charging infrastructure is inherently more controllable than legacy technologies and, as a result, can be designed to optimise network utilisation and stability, while avoiding impact during peak network events (curtailable). This capability should therefore be recognised, and would further support the introduction of a technology specific or customer specific tariff for publicly available EV charging sites.

It is noted that in its 2021 Victorian DNSPs determination the AER made the following statement in its Overview: Final Decision document (United Energy, Page 6) – but without any apparent elaboration on this issue):

“..... charging stations which instal load limiting devices can access alternative cost reflective tariffs”.

As noted above, publicly available EV charging sites can be managed through dynamic load control at critical peak periods – and, therefore, the AER should now act on this statement that charging stations that instal load limiting devices can access alternative cost reflective tariffs.

NSW DNSPs’ Tariffs Delivering Very High Costs

Analysis prepared by Evie showing the cost profiles for EV charging sites across the 3 NSW DNSPs for various site configurations and locations demonstrate the particularly significant adverse impact of the 160MWh pa threshold for all 3 DNSPs, as well as continued high costs under Ausgrid’s amended tariff proposals set out in its November 2023 revised TSS Explanatory Statement for 2024-29.

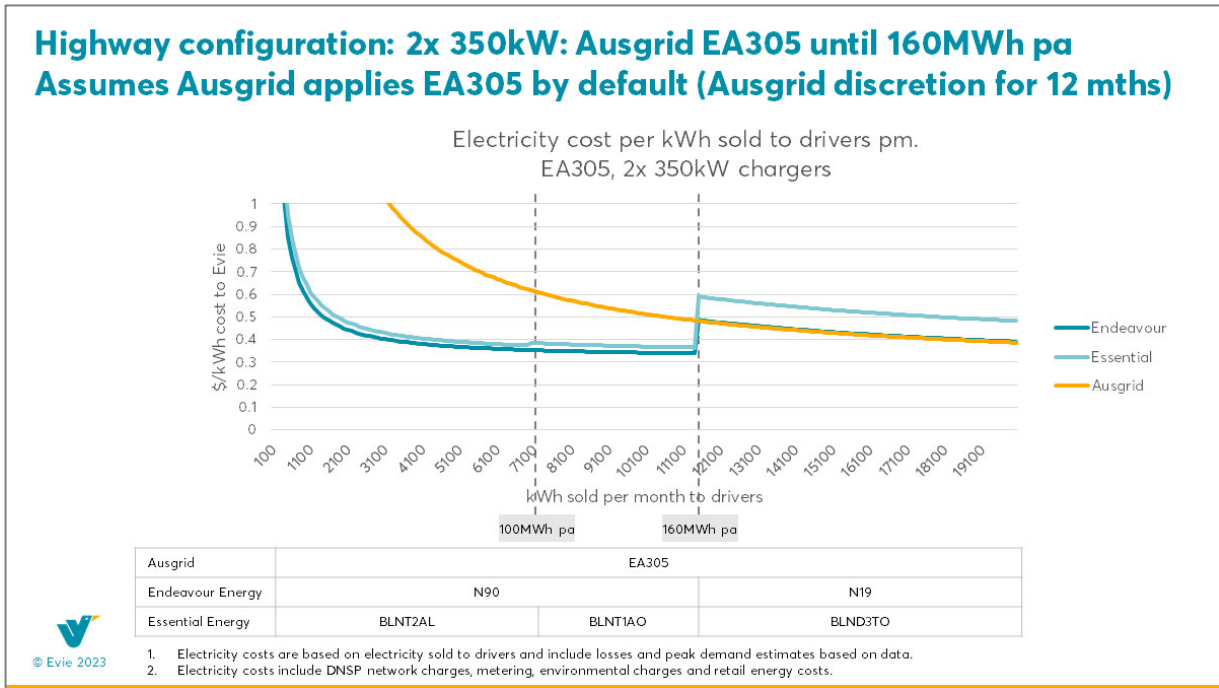
Some examples are presented below. Evie can provide the AER with these detailed materials for discussion on the adverse impact of the NSW DNSPs’ tariff proposals.

In materials presented by Ausgrid to the AER ahead of its formal change in its tariff proposals set out in its November 2023 revised TSS Explanatory Statement for 2024-29, Ausgrid particularly focused on changes to the following tariffs:

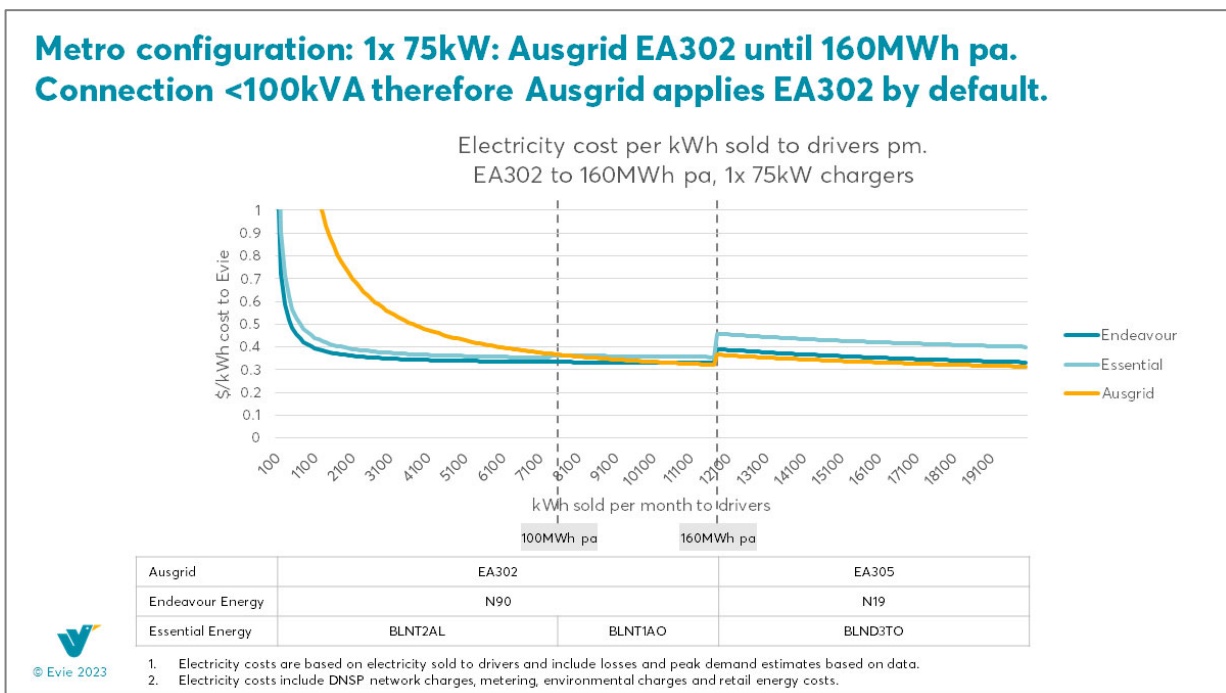
- EA256: Small business demand for connections > 100 kVA and up to 160MWh pa. Ability to opt out to EA225 until 160MWh pa.
- EA302: LV Capacity tariff for connections < 100kVA and usage between 40MWh and 160MWh pa. Note that also enforces this tariff for Small business customers (where usage is below 40MWh pa) for the first 12 months.

However Evie’s experience with Ausgrid highlights that the benefits Ausgrid has submitted will flow from its proposed changes will be blunted by discretionary decisions to assign sites to its EA 305 tariff – with the result that we would need to wait 12 months to demonstrate usage lower than 160MWh. In addition, if Evie requests a 100kVA connection, but Ausgrid refuses this application and assigns a lower amount, then Evie would not be eligible for the EA256/EA225 tariffs as the new 100kVA rule would not apply. **Evie submits that the AER is required to intervene to prevent such behaviour by Ausgrid.**

The figure below shows an example of high power charging where Ausgrid applies EA305 at its discretion, at least for the first 12 months, resulting in high costs compared to other NSW DNSPs, especially while usage is low.



The figure below shows an example of a lower power charging station with 1x 75kW charger, where Ausgrid applies EA302 at its discretion, at least for the first 12 months, resulting in high costs compared to other NSW DNSPs, especially while usage is low.

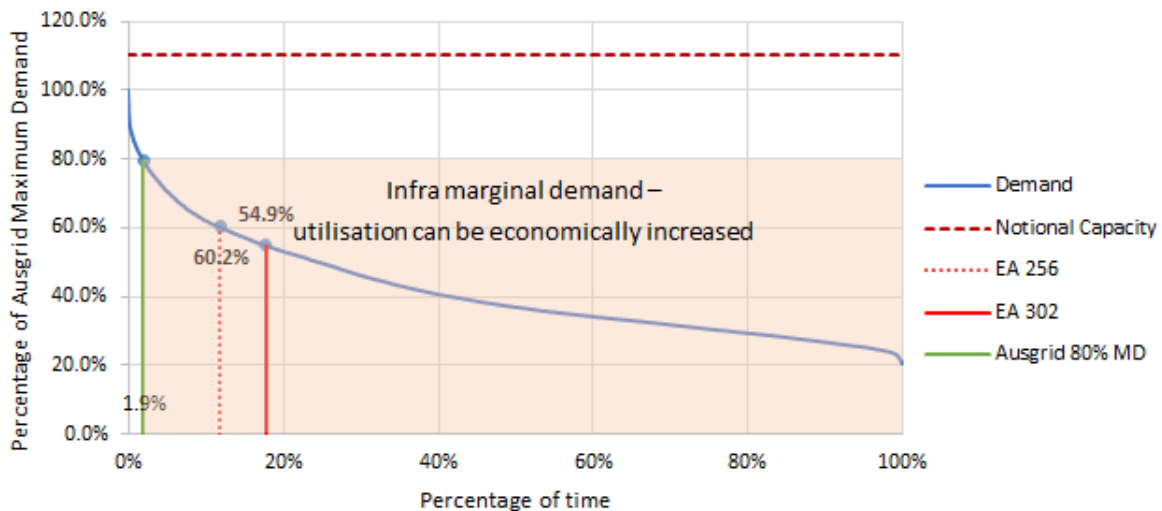


DNSP Tariffs Are Not Cost Reflective

The accompanying report prepared by Marsden Jacobs sets out in detail how network electricity tariffs with Demand and Capacity Charges are not cost reflective and, therefore, are not consistent with the Rules. The report particularly notes:

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

Figure 1 Ausgrid’s tariffs target inframarginal demand



AEMO Net System Load Profile, Ausgrid

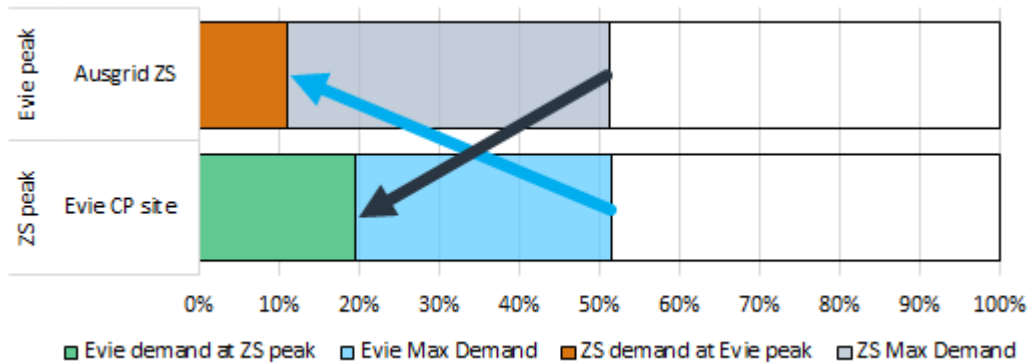
“The top 20 per cent of annual maximum demand (AMD) only occurs during 1.9 per cent of a year (vertical green line). By contrast, the charging window for both EA 255 (dotted vertical red line) and EA 302 (solid red line) during which a customer faces a peak charge on their usage correspond to times of 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.....

“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 2 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.....

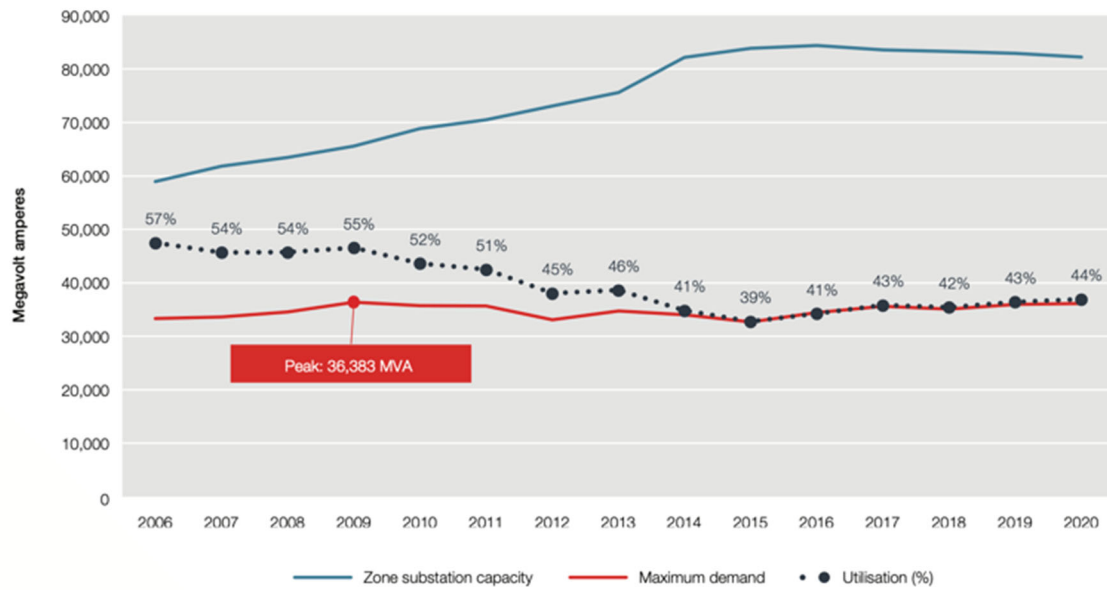
Figure 2 Example of peak demand diversity between Evie charging site and its Zone Substation



“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. ”

A more general exposition of significant gap between Zone Substation Capacity and Maximum Demand can be seen from the following figure from the AER’s 2021 State of the Energy Market Report:

Figure 3.29 Network utilisation – electricity distribution networks



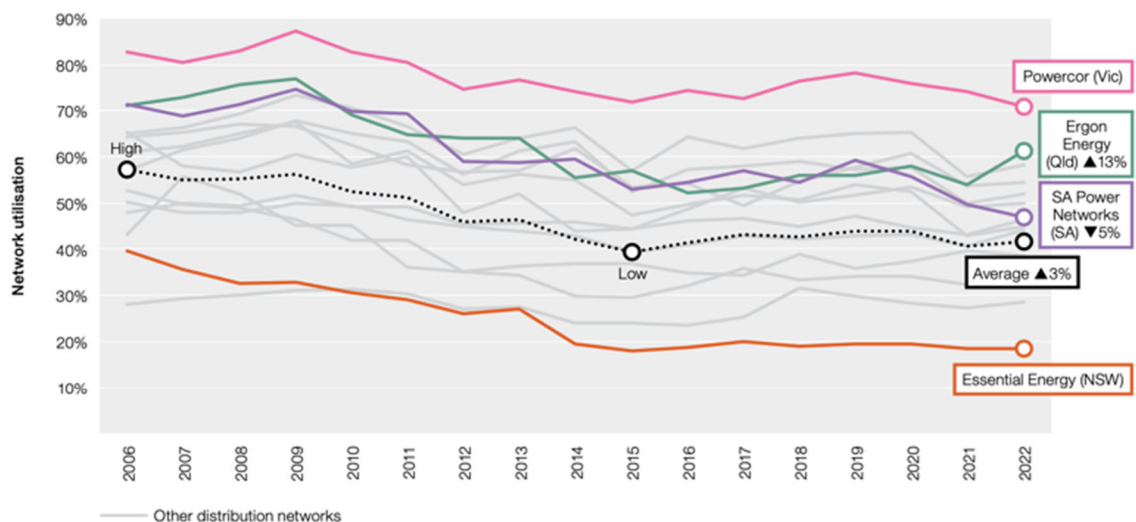
MVA: megavolt amperes.

Note: Network utilisation is the non-coincident, summated raw system annual peak demand divided by total zone substation transformer capacity.

Source: Economic benchmarking regulatory information notice (RIN) responses.

The above figure was not presented in the AER’s 2022 and 2023 State of the Energy Market reports. However the following figure from the 2023 report highlights the low level of utilisation of DNSPs’ networks.

Figure 4.31 Network utilisation – electricity distribution networks



Note: Network utilisation is the non-coincident, summated raw system annual peak demand divided by total zone substation transformer capacity.

Source: Economic benchmarking RIN responses.

DETAIL OF EVIE'S POSITION ON THE KEY CONSIDERATIONS FOR TARIFFS APPLYING TO PUBLICLY AVAILABLE EV CHARGING SITES

Based on the factors set out above and the accompanying MJA materials, Evie sets out its inter-related recommendations for consideration by the AER on the appropriate tariff structure that should be applied for publicly available fast, and ultra fast, EV charging sites. Evie particularly notes that under NER Clause 6.18.8, the AER has the ability to amend a TSS presented by a DNSP or amend a TSS itself. Evie submits that the AER should exercise this prerogative under this Rule. Evie would highlight that based on the arguments presented in this submission, this specific tariff for publicly available EV charging sites would not represent a subsidy for the industry.

Design Features

- Recognition of the adverse impact of the application of Demand Charges to publicly available EV charging sites at this point in the industry's development. This would necessitate a decision that Demand Charges would not be applied to publicly available EV charging sites at this point in the industry's current growth cycle. This is particularly supported by the MJA findings.
- Recognition of EV charging sites have a very different Load Profile from "traditional" businesses, and with a very different technology from "traditional" businesses – including "curtailability" – and, thus, recognition that the introduction of this special, specific tariff for the EV charging sector would, based on this special Usage profile, meet the requirements under NER Clause 6.18.4(a)(1) (ie, Tariff Assignment).
- Recognition of the availability of surplus capacity in areas of the grid, reinforcing the position that usage of publicly available fast, and ultra fast, charging sites will not put undue pressure on the grid over coming years – and, thus, that this usage will not drive the need for DNSPs to undertake expenditure to expand capacity. This is supported by the MJA findings.
- Consequential recognition that these factors support the application of an Energy Only Tariff to publicly available EV charging sites.
- Recognition that "curtailability" of publicly available EV charging sites during Peak Demand Days and the Coincident nature of usage patterns of publicly available EV charging sites with the daily pattern of Solar Generation would support the position that this Energy Only Tariff be applied at Off Peak Rate.
- Recognition that the Network Avoided Costs and Network Efficiency Benefits to be derived from EV charging sites, both directly and indirectly, which will benefit all consumers, not just EV drivers – and, thus, that these tariff design features would not involve a subsidy (or cross subsidy).

It is submitted that the following additional considerations should be adopted in line with the WA Regulator's recent determination that recognised the concept of a specific tariff for the EV charging infrastructure industry:

- This tariff to apply for a defined period of time (only), namely the current NSW DNSPs' 2024-29 regulatory period.
- During this defined time period, a mechanism be established along the lines adopted by the WA Regulator for the collection and analysis of appropriate data in order to develop, in conjunction with the EV charging infrastructure industry, and engaging with the AER and representatives of State and Federal Energy Ministers, tariffs that reflect the special characteristics of electricity demand at EV charging sites and that will promote the efficient use of networks.
- The tariff(s) established through this process be submitted to the AER for decision in its next 5 year NSW DNSP regulatory review.

The proposed design features would:

- Facilitate the rollout of this infrastructure that is recognised as being critical to the achievement of Government Emission Reduction Objectives and associated policies, particularly noting that the NEO now includes an Emissions Reduction Objective and that the AER is required to have regard to Federal and NSW Government policies that contain specific elements dealing with EVs and EV charging infrastructure.
- Be critical to the development of a sustainable business model, with this then ensuring that this charging infrastructure is fully maintained and operational – a critical element in seeing on-going (and increasing) demand for EVs which is necessary to achieve Government 2030 emission reduction targets.

CONCLUSION

Evie has demonstrated in detail that the AER's analysis – and conclusions – in its September 2023 Draft Decisions on NSW DNSPs' 2024-29 Tariff Proposals is fundamentally flawed. It is based on an outdated precedent in terms of the AER's 2021 Victorian DNSPs' tariff determinations. That decision was decided under the "old" National Energy Objectives (NEO) which did not contain a specific Emissions Reduction Objective. As a result, the AER's September 2023 position is inconsistent with the new NEO and the mandatory application of this new NEO to the AER's deliberations.

Evie's principal focus has been on the AER's draft decision on Ausgrid as Ausgrid subsequently amended a number of its tariff proposals following that draft decision. However the arguments presented apply to all 3 NSW DNSPs.

Drawing on this Ausgrid draft determination, Evie demonstrates that the AER's Draft Decision contains a number of errors with respect to its interpretation of the National Electricity Rules and misrepresents Evie's position as set out in detail in its May 2023 submission to the AER. Ausgrid has also misrepresented Evie's position.

In addition, drawing on analysis prepared by Marsden Jacobs, Evie demonstrates that Ausgrid's proposed tariff structures that would be applied to Evie are not cost reflective and, therefore, are inconsistent with the Rules. This is particularly because the effect of these tariffs apply a price premium through the use of Demand and Capacity Charges that cannot be justified.

The analysis presented supports the adoption of a specific tariff for publicly available EV charging sites because of their unique Load (Usage) Profile and Technology – which is very different from "traditional" businesses where Capacity or Demand Charges are applied. The submission demonstrates that such a specific tariff would not represent a subsidy.

The analysis presented with Evie's May 2023 submission and this current submission strongly supports the view that publicly available EV charging sites should be enjoying significantly lower electricity costs than currently being incurred and that Demand Charges should not be applied.

Evie recommends that the AER endorse the positions presented in this submission:

1. The introduction of a specific tariff for the publicly available EV charging infrastructure industry that is designed to facilitate the rollout of this infrastructure critical to increased EV take up, and recognises the ability of this new technology to respond to Peak Demand Periods through Curtailability/Dynamic Load Control.
2. Demand and Capacity Charges should not be applied to Charge Point Operators as they are not cost reflective and are inconsistent with the correct application of the Rules.
3. An Energy Only Tariff be applied at Off Peak Rate for a defined number of years.
4. In line with the position adopted by the WA Regulator in its 2023 decision on Western Power's tariffs, the AER agree to the establishment of a mechanism (with membership drawn from DNSPs, the EV charging infrastructure industry, the AER and State and Federal Energy Departments) that would collect and analyse data from dedicated EV charging sites over, say, 3-4 years to then develop tariffs that reflect the special characteristics of (i) electricity demand at EV charging sites and (ii) the technology employed, and promote the efficient use of DNSP networks for subsequent consideration by the AER.

Evie strongly believes this set of proposals would not only be consistent with the new Emissions Reduction Objective in the NEO, but that the AER is actually required under this new NEO and the accompanying arrangements put in place by the AEMC to endorse these proposals given the significant role the EV charging infrastructure industry plays in helping Governments achieve their Emission Reduction Targets and accompanying policies.

Redacted

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

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Contents

Executive summary	4
1. Introduction	10
1.1 Purpose and scope	10
1.2 AER approved Ausgrid's proposed tariffs, with some reservations	10
1.3 Report structure	11
2. Ausgrid's revised TSS	12
2.1 Current and proposed price discrimination is substantial	12
2.2 No basis for very high price discrimination in current and revised Ausgrid TSS indicative prices	13
2.3 Ausgrid's proposed peak charging windows do not target maximum demand	15
2.4 Existing and proposed tariff structures do not reflect demand diversity	17
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	17
2.6 Tariff assignment outcomes appear to contradict the NER and a review of tariff assignment policies is necessary	18
2.7 None of Ausgrid's proposed LV business tariffs are cost-reflective for Evie and other customers	19
3. AER's Draft Decision on Ausgrid's TSS	20
3.1 AER's Draft Decision is unreasonable	20
3.2 Dismissal of evidence without reference to NER	20
3.3 Proposed tariffs are distortionary	21
4. Actions required to ensure tariff proposals contribute to compliance	23
Appendix 1. Deriving average unit prices	24

Tables

Table 1 Comparison of estimated Evie average unit prices against network reference prices	13
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Figures

Figure 1 Evie NSW CP site unit network prices	4
Figure 2 Ausgrid's tariffs target inframarginal demand	6
Figure 3 Evie NSW CP site unit network prices	12
Figure 4 Ausgrid's comparison of LRMC between regulatory periods	14
Figure 5 Ausgrid's tariffs target inframarginal demand	16
Figure 6 Example of peak demand diversity between Evie charging site and its Zone Substation	17
Figure 7 Estimated average unit price of Ausgrid LV business tariffs, 2023-24	19
Figure 8 Average unit price of Ausgrid tariffs	25
Figure 9 Continuing high proportion of revenue from premium components of Ausgrid tariffs	25

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

[Redacted – Commercial 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.

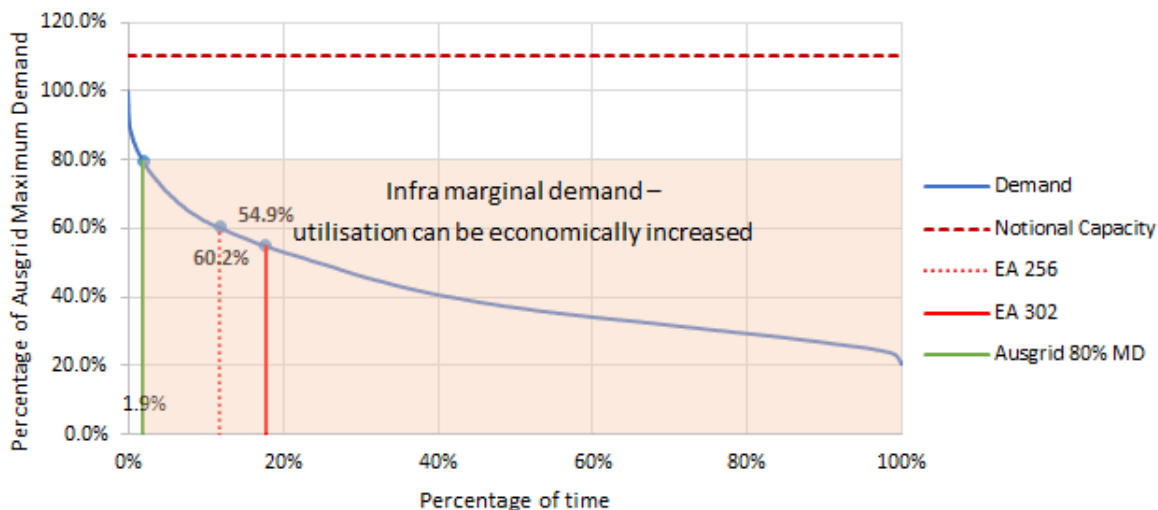
Ausgrid's assertions there is a cost basis for its proposed network price discrimination appear to be **misleading**. Current and proposed prices appear to reflect **charges for services that are not being supplied**. Any misrepresentation of the cost basis for prices, or charges for services that are 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 2023⁴, 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 2023⁵, 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 Determination 2024-29, 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

[Redacted – Commercial 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 LRM value is based on a present value of forecast growth expenditure used in the LRM 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 LRM.

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 LRM 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 LRM based price discrimination during 2019-24 was excessive and inefficient.

The unit LRM 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 LRM 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 LRM between regulatory periods

Table 2. Comparison of LRM 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 LRM between the 2019-24 and 2024-29 periods implies that the LRM 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 LRM forecasts

¹² This information is not included in Ausgrid’s TSS compliance document but is available at cell D50, LRM growth sheet from Attachment 8.4: LRM 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 LRM 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 LRM will be higher where capacity is constrained and lower in areas where there is significant excess capacity.¹⁶ Nevertheless, the LRM 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 LRM 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 LRM estimate were correct, this suggests that network charges authorised under Section 6.18.5(f) – LRM – 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-LRM 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 LRM applies a 26-year forecast horizon and appears to be running at a higher annualised amount than import LRM. 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 LRM is not the main driver of the substantial reduction in import LRM for 2024-29 compared with Ausgrid's approved TSS for 2019-24.

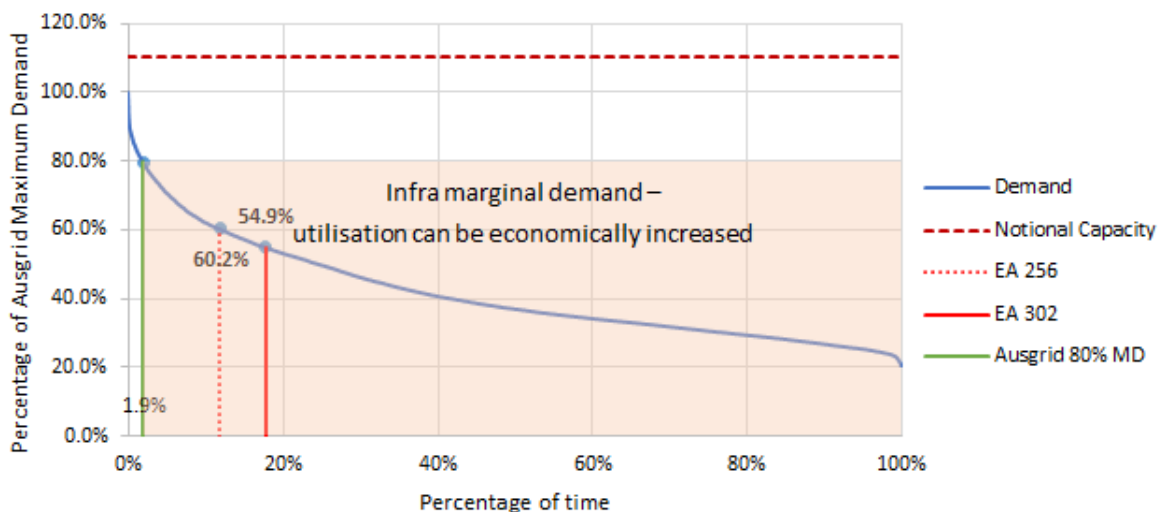
2.3 Ausgrid's proposed peak charging windows do not target maximum demand

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.

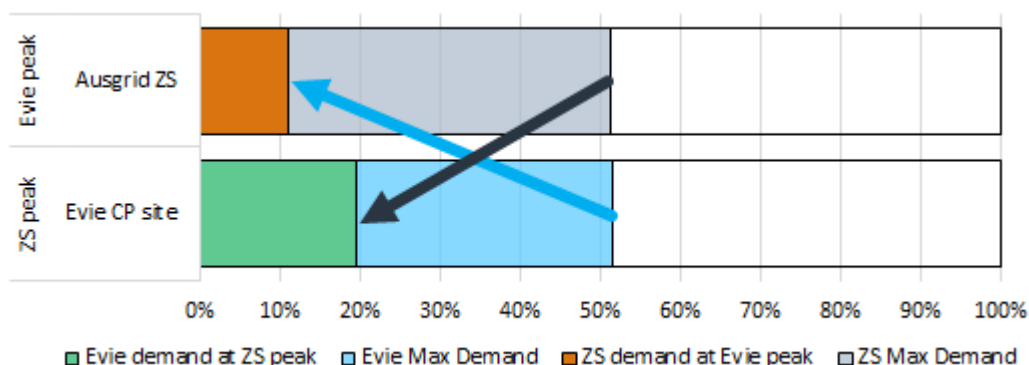
2.4 Existing and proposed tariff structures do not reflect demand diversity

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 policies 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.

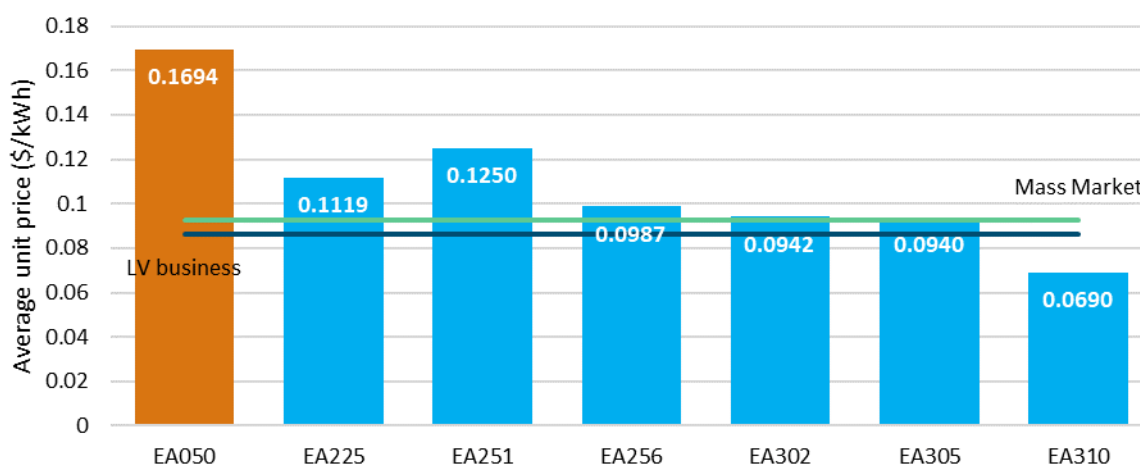
2.7 None of Ausgrid’s proposed LV business tariffs are cost-reflective for Evie and other customers

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 auxex 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

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 its 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 subtotaled 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.

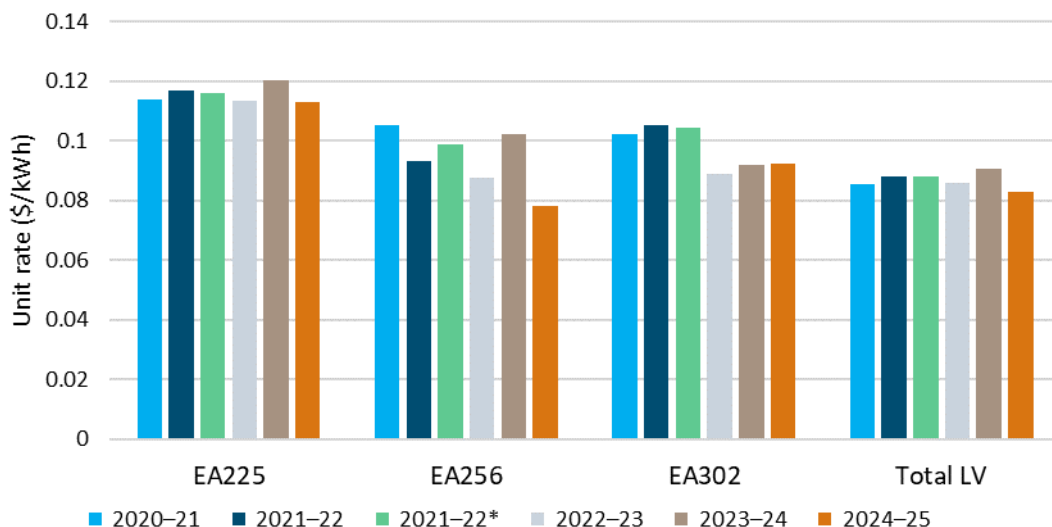
The extrapolation from 2023/24 volume forecasts to derive 2024/25 unit prices using revised TSS charging parameters introduces some errors, due to the data not being coincident with either the Evie quantity data and preceding tariff rates. However, this error is small compared with the size of price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

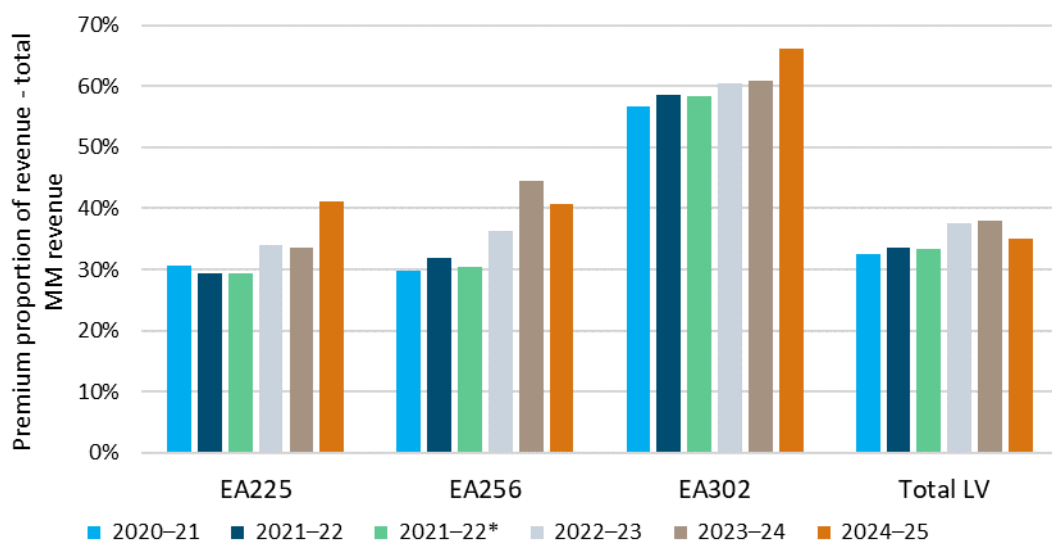
This highlights substantial price discrimination to the detriment of EA 302 and moderate discrimination to the detriment of EA 225 and EA 256 under the proposed tariff structure for 2024-25.

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.²⁴²⁵²⁶ 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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