From:	John Short
То:	AERresets2024-29
Subject:	An initial comment on the Ausgrid TSS Explanatory Statement for 2024-29
Attachments:	Ausgrid - TSS - Explanatory Statement
	Evie Networks submission to Ausgrid draft plan

I am writing in my capacity as a consultant to Evie Networks which is rolling out publicly available fast, and ultra fast, EV charging infrastructure across Australia, in metropolitan areas, regional/rural areas and on major highways. At present Evie has over 100 charging sites across Australia.

I am specifically writing to highlight key issues we have with 3 positions as set out in Ausgrid's TSS Explanatory Statement for 2024-29.

The first is very simple: The document describes Evie as "GoEvie", even though the submission we made to Ausgrid last year was on Evie letterhead.

More importantly, this TSS document totally misrepresents our position on the issue of tariffs for publicly available fast, and ultra fast, EV charging sites.

# **Tariffs for EV Charging Sites#1**

Ausgrid's TSS documents states:

In its submission, the EV Council said that the proposed reforms were moving slightly in the right direction. It recommended that new customers with greater than 100 amp connections be able to choose whether they receive a capacity, demand or TOU tariff. It also requested that the assignment threshold between demand and capacity tariffs be moved to 160 MWh per annum (instead of 100 MWh). GoEvie agreed with this position and also said that the 100 amp assignment threshold would create barriers to deploying higher power EV infrastructure.

However, this is a major misrepresentation of Evie's position, which we expressed as follows:

At the very least, Ausgrid should be required to immediately increase its capacity threshold to 160 MWh - in 1 step - in line with the other NSW DNSPs.

DNSP tariff structures with Demand or Capacity Charges are not appropriate for the fledging EV Charging Infrastructure Industry given its very different Load Profile relative to "traditional" businesses and low usage levels at this stage of the industry's development. This very different load profile would support the introduction of a technology specific or customer specific tariff in this area (ie, a specific tariff for publicly available EV charging sites) and this would be consistent with NER Clause 6.18.4 on Tariff Assignment.

Recognition should also be afforded to how 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. Technology to control public EV charging already exists and is in operation today. 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.

The introduction of a specific tariff for publicly available EV charging sites would not represent a subsidy and, thus, would not involve a cross-subsidy from one group of consumers to EV drivers. This is because the uptake of EVs – which is particularly assisted by public fast charging availability as it helps address the concerns by potential EV purchasers about Range Anxiety (ie, potentially running out of fuel) - will deliver significant benefits through network efficiency benefits, as well as significant avoided network costs, both now and in the future. These network benefits will ultimately flow through to all electricity consumers, not just EV owners.

Evie Networks notes that these arguments apply generally to all 3 NSW DNSPs, not just Ausgrid. Evie Networks therefore recommends that the State Government should initiate urgent action to require NSW DNSPs to develop specific tariffs for publicly available EV charging sites for the next 5 year Regulatory Period that:

1. Positively support the fledging EV Charging Infrastructure Industry.

**2**. Recognise the significant potential Network Benefits from EVs and the associated role of the EV Charging Infrastructure Industry in delivering these benefits.

3. Recognise the ability of Load Management Systems to address Peak Demand issues.

### **Tariffs for EV Charging Sites#2**

And the following extract from the Ausgrid document demonstrates that it has not addressed any of the arguments presented. Instead it effectively just dismisses them out-of-hand, without any real evidence or argument:

GoEvie responded that Ausgrid should introduce a specific tariff for the EV public fast charging industry. The submission says that such a tariff would not create a cross-subsidy as EV charging structure provides network benefits such as increased network utilisation and stability, more solar soaking load, and network support via load control. It also said that residential and small business charges should be more closely aligned.

We believe that our proposed amendments to our tariff assignment policy for medium businesses (Section 3.3) will provide an appropriate balance between fairness and the need to reflect cost reflective price signals.

# <u>The AER's Forthcoming Issues Paper On the NSW DNSPs' 2024-29 Regulatory</u> <u>Proposals</u>

Evie looks forward to the release of its the forthcoming Issues Paper as this will give the AER the opportunity to re-visit - and address - a number of the issues it presented in its Determination on the Victorian DNSPs' from 2021 - and most particularly:

At that time, the AER stated that there was not sufficient data to properly assess the position that Evie (and the EVC) presented in terms of charging stations being materially different in their load characteristics (Load Profiles) and, therefore, the AER dismissed our position that the EV Charging Infrastructure Industry should not be saddled with tariffs structures that included Demand Charges. The situation now is very different. Evie, for example, has over 100 charging sites in operation, and the industry has expanded considerably over recent years. Therefore there is significant data now available to test our proposition that the Load Profile of publicly available EV charging sites is very different from traditional business, and very different from the examples quoted in the Victorian DNSPs decision, namely irrigators and medical imaging facilities.

Many thanks and best regards,

John Short



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# **Submission by Evie Networks**

On

# Ausgrid 2024-29 Draft Plan

#### About Evie Networks

Evie Networks was founded in 2017 by the St Baker Energy Innovation Fund with the aim of building Australia's largest Electric Vehicle fast and ultra-fast charging network across all Australian States and Territories as part of a strategy that recognised the need for, and societal benefits of, the electrification of the Australian Transport Sector and the associated need to address concerns about "Range Anxiety" with EVs. Evie therefore has a strong focus on building quality charging stations, located on sites that are convenient for customers and underpinned by the Evie team's relentless pursuit of reliability and customer satisfaction. Its initial rollout was on national highways and is now being expanded into major metropolitan areas and regional centres. Evie currently has over 70 sites in operation and expects to have over 200 sites by July 2023.

Evie Networks is backed by funding from the St Baker Energy Innovation Fund, which is accompanied by significant grants from the Australian Renewable Energy Agency (ARENA) and the Federal Government's Future Fuels Fund. Evie Networks has also been successful in being selected to help rollout EV charging sites under a number of State Government and Local Government EV infrastructure programs. This makes Evie Networks the most well-funded EV charging operator in Australia, providing confidence that it will continue to grow and support its network across all Australian States and Territories.



# **Executive Summary**

Evie Networks welcomes the opportunity to make comments on Ausgrid's 2024-29 Draft Plan, and specifically the elements therein dealing with tariffs for publicly available fast and ultra-fast EV chargers. As a result, we do not respond to every question listed in Ausgrid's consultation document.

Beyond the well-documented societal benefits of EV uptake (including emissions reduction, public health and national fuel security), EV uptake is one of the few sources of future growth for networks at a time of increasing household solar PV generation that is driving down Minimum Demand to critically low levels. Greater network utilisation from EV uptake will deliver network efficiency benefits and significant avoided network costs, particularly in relation to networks managing low minimum demand resulting from increased solar energy during the middle of the day. These network benefits can ultimately be passed through to all electricity consumers, not just EV owners.

Public fast and ultra-fast charging infrastructure is essential to support the uptake of EVs in Australia and, therefore, essential to realise the network benefits that EVs will bring. It is critical that tariffs applying to EV charging sites do not stifle investment due to high electricity costs for EV charging infrastructure providers, while EV uptake is still in its infancy.

However, Evie's experience, more so in Ausgrid areas than for any other DNSP areas, is that electricity costs are prohibitively high due to tariff structure and tariff assignment policies. This is because Ausgrid applies capacity tariffs from day one and follows with an extremely low threshold for continuing with capacity tariffs. The Load Profile of public fast charging is very different from "traditional" small and medium businesses and at such an early stage of EV uptake, Ausgrid's current tariffs and assignment policies create a very large, fixed cost for charging network operators that must be shared across a small number of drivers.

Unfortunately, based on real data and forecasts, it is clear that Ausgrid's draft plan will not address the current high prices for public fast charging. Ausgrid has acknowledged the problems with current tariffs and policies in its draft plan, stating in its "Our Pricing Directions Paper for 2024-29 for consultation" document) page 35):

"New EV charging stations typically have a lower utilisation of the network and can therefore experience a higher cost per unit of energy than other customers on the same tariff."

However, it does not address the problems in a way that will provide any tangible outcomes and, in fact, Ausgrid clearly states in the above-mentioned consultation document (page 35) that its proposed changes to the tariff applied to publicly available charging stations will not fully address the issue, stating (emphasis added):

#### ".....<u>our proposed reform</u> of raising the threshold at which capacity tariffs apply.... will go part of the way in addressing the feedback from the EV industry."

In this response and separate confidential attachment, Evie Networks lays out the significant network benefits that can be realised through accommodating public fast charging infrastructure and demonstrates why Ausgrid's plan will not reduce the current barriers to the growth of this critical new industry that undermine the State Government's efforts to increase the uptake of EVs. The identified significant network benefits that can ultimately be passed on to all electricity consumers support the need to introduce a specific tariff for the EV public fast charging infrastructure industry and would not represent a cross-subsidy from one group of consumers to EV drivers.



# Why traditional business tariffs deliver very high costs for publicly available EV charging sites

The EV public fast charging infrastructure industry is still relatively new in in Australia. The Load Profile of public fast charging is very different from "traditional" small and medium businesses. Tariffs that are currently applied to small and medium businesses are not suited to this new industry and, in fact, result in very high electricity costs.

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



Figure 1: Illustrative example of ultra-fast load profile while EV uptake is low.

EV charging load profiles do not resemble typical Commercial and Industrial (C&I) use cases. If demand or capacity tariffs are assigned, as they are today by Ausgrid, the result is very high electricity costs. This is because the demand or capacity charges are necessarily amortised over a small number of users. In addition to the obvious high costs for charging network operators and the adverse impact on returns on investment, this will have significant consequences for drivers in Ausgrid areas:

- Public fast charging availability will be very limited as the infrastructure will not prove commercially viable. Investment in public fast charging will, therefore, be directed to other areas; or
- Costs must be passed on to drivers, rendering public fast charging unaffordable and undermining the incentive for people to switch from an ICE vehicle to an EV.

Given the importance of public fast charging availability for addressing Range Anxiety concerns of potential EV purchasers and the relative costs of "fuel" for an EV versus an ICE vehicle, these outcomes would act as a major brake on the EV transition. This would also mean that expected network benefits would not be fully realised in Ausgrid areas.

Evie Networks is already seeing the adverse impact of Ausgrid's tariff structure and tariff assignment policies on its operations.



Attachment A provides a Case Study of a site in Sydney that incurs electricity costs of over \$1 per kWh sold to drivers. Clearly, if Evie were to pass on this cost to drivers, utilisation of the charging infrastructure would be extremely low.

As highlighted in the Executive Summary, the adverse impact of its capacity charges on publicly available EV charging sites is clearly recognised by Ausgrid in its "Our Pricing Directions Paper for 2024-29 for consultation" document. Despite this, Ausgrid goes on to state in the abovementioned consultation document that its proposed changes to the tariff applied to publicly available charging stations will not fully address the issue. Ausgrid does not provide any detailed explanation as to why it believes it should not fully address the key issue for the EV public fast charging infrastructure industry that it has already fully acknowledged, but provides some negative commentary around how "Most stakeholders indicated that Ausgrid should not embed cross subsidies in our pricing to overcome transitional technology challenges".

## Publicly available EV charging sites can provide significant network benefits and are not a threat to electricity grids

Evie Networks strongly disputes the view that a specific tariff for publicly available EV charging sites would involve a cross-subsidy.

The uptake of EVs, enabled by the availability of well planned, affordable public fast charging, will deliver significant long-term benefits for electricity networks and, ultimately, electricity consumers. In summary, the benefits include:

- Long term increased utilisation of electricity networks, creating 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.

We particularly note that Endeavour Energy, in their Preliminary Proposal for the 2024-2029 period, specifically recognises the benefits from EV uptake, stating that EVs will:

"rapidly enhance the flexibility of consumption and will form a crucial component of the dynamic architecture of the future network. They will become a very useful tool to balance loads...".

Network efficiency benefits through greater utilisation, as well as significant avoided network costs (through minimising the costs to manage minimum demand created by excess solar energy during the day), will mean lower costs can be passed on to all electricity consumers, not just EV owners.

Additionally, it is submitted that (1) the very different usage profile of publicly available EV charging sites would justify the introduction of a specific tariff for this new industry, consistent with the National Electricity Rules (Clause 6.18.4) and (2) the network benefits provided through the operation of EV charging sites would mean that the introduction of a technology-specific tariff for publicly available EV charging sites would also be consistent with the NEM Rules (Clause 6.18.5 on Pricing Principles).



The above-mentioned Ausgrid consultation document also signals its concerns that EV charging will, with an increasing number of EVs on the road, add to peak demand on its network, resulting in increased investment to address this increase in peak load.

Evie Networks submits that this view is misplaced, as EV charging can act as a "solar soak". Specifically, usage of publicly available EV charging sites is concentrated during off-peak periods, and principally during the periods of excess solar generation. Ie, charging site utilisation is broadly co-incident with the solar peak period and, thus, as noted above, can act as a "solar soak" with consequential avoided network cost benefits.

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



Source: ChargeFox, Evie, Energeia

Figure 2: Charging frequency by time of day.

Further, new technologies, including public EV charging infrastructure, are inherently more controllable than legacy technologies:

- Charging technology is easily controllable.
- 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.
- Technology to control public EV charging already exists and is in operation today.

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



# What is Ausgrid proposing and Impact on EV Charging Station Electricity Costs (Response to Consultation Questions #7 (Embedded Networks), #9 (Tariff Assignment) and #10 (Technology Specific Tariffs))

The proposed changes to the tariffs applying to EV public charging sites result from the proposed changes by Ausgrid to its small and medium business tariff assignment policies. This is explained by Ausgrid in the above-mentioned consultation document in the following terms (Extract, page 34; emphasis added):

# Reform our small and medium business tariff assignment policies

In our consultations to date, retailers and customers have raised two concerns about the bill impacts for small and medium business customers, when we transfer them to another tariff in line with our current tariff assignment polices.

First, when a small business customer on our demand tariff (EA256) uses more than 40 MWh per annum over a 2-year period, our policy is to transfer them to a medium business capacity tariff (EA302). This tariff has different structure to the demand tariff, and this can create adverse bill impacts for customers who use the network infrequently (such as electric vehicle charging stations).

Second, when new business customers connect to our network, they do not have any existing metering data to guide us in assigning them to the most appropriate network tariff. Our current policy assigns them to a demand tariff if they\_have a single-phase connection, and to a capacity tariff if they have a three-phase connection. However, we understand that many small business customers (using less than 40 MWh pa) are on three-phase supplies. Under this policy, they are assigned to a capacity tariff that is likely to be inappropriate. In addition, under our existing assignment policies a new customer must wait 12 months before they can request a tariff transfer.

To respond to this feedback, we are proposing the following reforms:

• Increasing the consumption threshold for transferring existing customers from a demand tariff to a capacity tariff from 40 MWh per annum to 100 MWh pa. This will align with the National Energy Retail Law (NSW) definition of a small customer and improve our annual review of tariff assignments by reducing the number of tariff transfers occurring. It will also enable customers using between 40 and 100 MWh per annum to be assigned to the business demand tariff EA256 (and to opt out to time of use tariff, should they choose too). We propose to <u>move the threshold to 100 MWh</u> in 20 MWh steps over three years (FY25, FY26 and FY27) to limit rebalancing of tariff components and possible customer bill impacts.

• When assigning new business customers to a tariff, we propose to replace the 'three-phase rule' with a 'greater than 100 amp rule' for assigning customers to capacity tariffs. This will ensure that smaller business customers who have three-phase supply sites are assigned to the business demand tariff (EA256) instead of the capacity tariff (EA302). These customers would still be able to opt out of this demand tariff, and move to the business TOU tariff EA225, should they choose to.



#### Analysis by Evie Networks of Ausgrid's proposed tariffs and its associated low capacity thresholds demonstrates that Ausgrid's position will result in very high costs for publicly available EV charging operators, in both absolute terms and relative to the other 2 NSW DNSPs.

This high cost outcome is in both metropolitan areas and public highway sites, but the impact on public highways is greater.

This will:

- 1. Make investment in public EV charging in the Ausgrid network area going forward commercially challenging.
- 2. Create the risk that public charging costs for EV drivers in the Ausgrid network area (covering Greater Sydney, the Central Coast and the Hunter) will be unduly high. This would:
  - a. Be highly inequitable for EV owners who are not able to charge their EVs at their residence.
  - b. Potentially blunt the incentive to purchase an EV (ie, it would reduce the benefits of driving an EV versus an ICE vehicle), undermining the NSW Government's policies designed to increase the uptake of EVs.

This analysis is set out in a confidential attachment containing 6 graphs showing the impact of Ausgrid's tariff arrangements, including a Case Study comparing an EV charging site in the Ausgrid network area with a comparable site in the Endeavour Energy network area.

# The Case Study provided highlights how electricity costs at the site in the Ausgrid area are well in excess of double the cost at the comparable site in the Endeavour Energy area.

In addition:

1. Ausgrid is not proposing to address the issue it has identified with its 40MWh capacity threshold immediately in terms of increasing this threshold to 100 MWh. Instead, it proposes to make this change in 3 steps, with the result that the new 100MWh threshold would not apply until FY27; ie, 5 years from now.

Evie's data and forecasts demonstrate that utilisation of chargers will track ahead of Ausgrid's proposed timing of threshold increases. As a consequence, most charging stations will still incur capacity charges and Ausgrid's proposed threshold increases will have very limited tangible impact.

If Ausgrid is to address the problem it has identified then, at the very least, the threshold increases need to occur immediately and in one step.

Evie has illustrated the forecast utilisation for charging stations relative to Ausgrid's scheduled threshold increases in a separate confidential attachment.

2. Even at 100MWh, Ausgrid's capacity threshold would be out of line with that of other NSW DNSPs, at 160MWh.

Ausgrid provides no reasons for why it should continue to apply the lowest volume thresholds for capacity tariffs of all the DNSPs in Australia.



- 3. The proposed tariff assignment policy that applies to new connections, with EA302 tariff applying for 3-phase connections greater than 100A, will create a barrier to deploying the higher power and multi-bay charging infrastructure that is in line with driver needs and preferences. The proposed 100MWh limit could, in fact, incentivise providers of charging infrastructure to build many single charging stations to avoid Ausgrid's tariff structure. This would result in a poorer experience for drivers and poor capital efficiency. Further, the long-term capacity factor of a multi-head configuration is much greater than for small, single head configurations and, therefore, more efficient for the network, than a single head configuration.
- 4. We note that the proposed 100A limit would appear to unduly favour Ausgrid's own electric kiosk solution which provides single port, low power, advertising-funded charging (through Ausgrid's partner, JOLT).
- 5. Ausgrid's Tariff Assignment Policy position of automatically assigning new business customers to its EA302 capacity tariff on the basis that this new customer does not have any existing metering data to guide it in assigning them to the most appropriate network tariff is regarded as unduly arbitrary and, as a result, punitive.
  - a. Charging stations are often very similar to existing infrastructure that is already operating.
  - b. Evie Networks has attempted on multiple occasions to demonstrate likely utilisation based on actual data from operating charging stations. We have also provided data within the first 12 months of operation.
  - c. Ausgrid has rejected Evie's tariff reassignment requests despite an abundance of data.
  - d. It is therefore submitted that if a CPO can demonstrate data from a similar charging site to support a requested tariff assignment, Ausgrid should be required to accept that data, rather than imposing punitive network charges for 12 months.

Evie has illustrated the real world cost of Ausgrid's connection policies in its separate confidential attachment.

- 6. Capacity charges limit the ability to control equipment. Once a capacity charge has been incurred, customers have no incentive to reduce peak demand in subsequent months.
- 7. Ausgrid is not offering incentives to CPOs to reduce costs as its tariff arrangements do not afford any recognition that the technology is highly controllable.
- 8. Ausgrid has not recognised that public EV charging aligns with solar peaks and the potential benefits from avoided network costs.
- 9. Embedded Networks: Evie Networks does not support the position presented by Ausgrid on embedded networks, and would particularly highlight that this would make it harder for CPOs to deploy charging sites at locations that are convenient for drivers, such as shopping centres. Evie Networks further notes that Ausgrid is proposing to treat a particular class of customer differently without considering the different types of loads and the flexibility of loads that are connected to the embedded network.

We would welcome engagement with Ausgrid about how electric vehicle charging can be connected via embedded networks in a way that reduced the current barriers to infrastructure investment.



# **Conclusion**

Ausgrid has clearly identified how its tariff structures disadvantage publicly available EV charging sites, and result in these sites experiencing a higher cost per unit of energy than other customers on the same tariff. Despite this, it also clearly states that the changes it is proposing will only go part of the way in addressing this issue that is so critical to ensuring the commercial viability of this new industry, and an industry that is seen by the NSW Government as playing a fundamental role in supporting government policy to promote the increased take up of EVs.

Evie Networks therefore does not support the tariff changes presented by Ausgrid as they simply will not provide tangible benefits.

Our analysis, presented in our confidential attachment, demonstrates that Ausgrid's changes will continue to result in very high electricity costs, both in absolute terms and compared with the other 2 NSW DNSPs. At the very least, Ausgrid should be required to immediately increase its capacity threshold to 160MWh – in 1 step – in line with the other NSW DNSPs.

DNSP tariff structures with Demand or Capacity Charges are not appropriate for the fledging EV Charging Infrastructure Industry given its very different Load Profile relative to "traditional" businesses and low usage levels at this stage of the industry's development. This very different load profile would support the introduction of a technology specific or customer specific tariff in this area (ie, a specific tariff for publicly available EV charging sites) and this would be consistent with NER Clause 6.18.4 on Tariff Assignment.

Recognition should also be afforded to how 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. Technology to control public EV charging already exists and is in operation today. 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.

The introduction of a specific tariff for publicly available EV charging sites would not represent a subsidy and, thus, would not involve a cross-subsidy from one group of consumers to EV drivers. This is because the uptake of EVs – which is particularly assisted by public fast charging availability as it helps address the concerns by potential EV purchasers about Range Anxiety (ie, potentially running out of fuel) - will deliver significant benefits through network efficiency benefits, as well as significant avoided network costs, both now and in the future. These network benefits will ultimately flow through to all electricity consumers, not just EV owners.

Evie Networks notes that these arguments apply generally to all 3 NSW DNSPs, not just Ausgrid. Evie Networks therefore recommends that the State Government should initiate urgent action to require NSW DNSPs to develop specific tariffs for publicly available EV charging sites for the next 5 year Regulatory Period that:

- 1. Positively support the fledging EV Charging Infrastructure Industry.
- 2. Recognise the significant potential Network Benefits from EVs and the associated role of the EV Charging Infrastructure Industry in delivering these benefits.
- 3. Recognise the ability of Load Management Systems to address Peak Demand issues.



Additionally, it is submitted that this new tariff structure should ensure that - for driver equity and optimal Network usage reasons - electricity costs for publicly available EV charging sites are in line with the cost of charging an EV at home.

Evie Networks therefore proposes that the Government, the NSW DNSPs and the EV Charging Industry agree to work together to develop this new tariff structure over the next 4 months for presentation as part of their proposed 2024-2029 tariff proposals, and that the NSW Government specifically endorse this position in submission to the Australian Energy Regulator.

### October, 2022