

**Submission by
Evie Networks
To
Economic Regulation Authority
On
Access arrangement for the AA5 Period:
Additional Information from Western Power**

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 the St Baker Energy Innovation Fund's commitment of \$100 million, 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 charging 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.

INTRODUCTION

Evie Networks welcomes the opportunity to respond to the additional information on Tariff Structures and Reference Services provided by Western Power for assessing the access arrangements for the AA5 period. Evie notes that Western Power has sought to respond to stakeholder comments and feedback on its initial proposal for the AA5 period and has made a number of changes to the structure of the new tariff for dedicated Electric vehicle (EV) charging stations. Evie also wishes to acknowledge the strong engagement by Western Power with Evie to assist it in understanding the operation of this proposed new tariff structure and the resultant electricity cost outcomes. Regrettably, however, this proposed new structure would produce unduly high electricity cost outcomes. As a result, it is Evie's assessment that Western Power's revised tariff structure and pricing would not facilitate or support the rollout of publicly available fast and ultra fast EV charging stations across the State. It is therefore considered that the revised Western Power tariff proposal continues to be inconsistent with the final decision on the framework and approach set out by the Economic Regulation Authority in its August 2021 "Framework and approach for Western Power's fifth access arrangement review: Final Decision". It is further noted that the rollout and continued maintenance of commercially viable EV charging infrastructure is critical to supporting the Government's EV Strategy by helping to remove Range Anxiety and enabling inter-regional and long-distance travel.

ASSESSMENT OF WESTERN POWER'S NEW TARIFF STRUCTURE

What Western Power is proposing

Western Power has proposed a sliding-scale based tariff consisting of both Time-of-Use (ToU) and Demand Charges that vary with utilisation, with the following 3 charging components:

- A fixed daily or monthly network access charge (\$/time period).
- A two-tiered time-of-use-based component (c/kWh) that steps down with increased utilisation:
 - An on-peak period rate operating from 3:00 pm to 9:00 pm.
 - An off-peak rate operating between 9:00 pm and 3:00 pm.
- A demand-based component (\$/kW) for the highest 30-minute demand in a month within the on-peak period only that steps up with utilisation. There are 3 steps: 0-10%, 10-20% and 20-30%.

"Utilisation" is defined as the proportion of intervals over a billing period that exceed a defined threshold. As explained by Western Power, "The intent of this approach to calculating utilisation is to only count those intervals across the day where active charging of electric vehicles is taking place."

Assessment of Resultant Electricity Costs

Analysis by Evie demonstrates that Western Power's new tariff structure would result in electricity cost outcomes that:

- Would not be commercially viable for EV charging infrastructure providers.
- Would be in excess of electricity costs under most other DNSPs, thus resulting in energy costs for EV drivers using publicly available charging sites being amongst the highest in Australia.
- Would result in electricity cost outcomes higher than with its Business ToU tariffs.

These high electricity cost outcomes are due to the combined impact of the definition of "Utilisation" proposed by Western Power and the proposed tariff structure continuing to contain a Demand Charge component.

Evie submits that the Utilisation method proposed by Western Power significantly overstates actual charging station utilisation, with this pushing EV charging sites onto Demand Charges at low levels of operation. It is submitted that Western Power should consider introducing a definition of Utilisation based on Capacity Factor, a well defined measurement of energy output.

As set out in Evie's submission to the ERA on its Issues Paper on Western Power's proposed access arrangements for 2022/23-2026/27, Demand Charges are based on a customer's highest recorded demand in a defined period. However the load profile of EV charging sites is very different from a traditional small or medium business as the usage is not reasonably consistent over the day and, instead, the daily load profile for EV charging sites is intermittent and for short durations. Additionally, during the early years of EV take up, the very low level of EVs on the road and the low number of EV drivers using publicly available EV charging sites means that electricity tariffs that contain a Demand Charge component will inevitably result in very high energy costs because of the very small number of charging events that these high Demand Charges can be amortised across.

ADDITIONAL CONSIDERATIONS

Curtailability

As also set out in Evie's submission to the ERA on its Issues Paper on Western Power's proposed access arrangements for 2022/23-2026/27, public charging infrastructure is highly curtailable and can be managed dynamically during the few periods of peak network demand during each year. Evie already adopts dynamic load management at a number of its sites. This is proven technology and can be deployed at any site today. Western Power has not considered this critical issue in the development of its revised tariff structure. Evie believes this should be an important part of tariff design for publicly available EV charging sites and would propose that Western Power specifically consider this in future tariff designs.

Tariff Trials

Western Power is proposing to adopt the Australian Energy Regulator's approach to Tariff Trials under the National Electricity Rules. Evie understands the basis of this decision, but believes there is significant uncertainty as to what actions would need to be adopted if the revenue caps applying were reached before the end of the AA5 period. Evie therefore requests the ERA to seek advice from Western Power on this matter.

Data

Evie welcomes the statement by Western Power that it intends to collect and monitor data on EV charging site usage over the AA5 period "with a view to the need for additional tariff options". However Evie believes that a formal data review process such be introduced to determine what data would be collected and how this would be reviewed in the context of developing specific EV charging site tariffs for the AA6 period.

EV Connection Product

Evie understands that the new EV connection product Western Power is proposing can only be used when creating a new connection to a lot. This would mean that an EV charging infrastructure operator installing a site at a lot with an existing connection would not be able to use the new products (ie, the EV connection product and the applicable EV tariff) due to Western Power's current policy of 1 connection per lot. As a result, most EV charging stations would be ineligible to use the new EV connection product or applicable EV tariffs. Evie therefore strongly recommends that the ERA request Western Power to remove this requirement.

CONCLUSION

Analysis by Evie of the new tariff structure for dedicated EV charging sites presented by Western Power demonstrates it would continue to produce unduly high electricity cost outcomes. In fact, the proposed new structure would lead to some of the highest electricity costs for EV drivers in Australia. As a result, the revised tariff structure and pricing would not support the rollout of publicly available fast and ultra fast EV charging stations across the State and, thus, would be inconsistent with the ERA's final decision on the framework and approach for Western Power's fifth access arrangement review.

As set out in Evie's submission to the ERA on its Issues Paper: Proposed revisions to the access arrangement for the Western Power Network 2022/23-2026/7, if the Government wishes to see the development and growth of a commercially viable EV charging infrastructure industry in the State as part of a strategy to promote the take up of EVs and the ERA wishes to support the rollout of this infrastructure, it will be important that:

- The cost of an EV driver charging at a publicly available charging site is not out of line with the cost of charging at home. This is because such an outcome would create an incentive to charge at home versus a publicly available site. Such an outcome would have the perverse effect of increasing pressure on the grid at Peak Times in the afternoon, with EV drivers deliberately choosing to charge when they return home from work and, therefore, not taking advantage of using a charging site that they had easy access to during the day. This risk is perhaps higher in WA than in other States as there is a far higher level of separate houses in the State (at 79.7% according to the 2021 Census) versus the national figure of 70%.
- EV owners that do not have access to on-site charging (eg, people living in apartments or without a garage) are not disadvantaged relative to an EV owner that can charge at home. This is an important equity issue.

Evie therefore submits, based on the assessment of Western Power's proposed new tariff structure and our original submission on the ERA Issues Paper, that the ERA should reject Western Power's revised proposed tariffs for dedicated EV charging sites on the grounds that it would not support the rollout of publicly available EV charging stations across the State and believes that the ERA should, instead:

- Require Western Power to set the tariff for publicly available fast and ultra-fast EV charging sites for the 5-year period 2022/23 – 2026/27 at a level that would produce an energy cost equivalent to that paid by an EV owner charging at home.
- Require Western Power to work with EV charging infrastructure providers to introduce appropriate arrangements during the 5-year period 2022/23 – 2026/27 to collect and analyse appropriate data from dedicated EV charging sites (including assessing the ability to dynamically reduce load on the network during peak network events) to develop, in conjunction with the EV charging infrastructure industry and engaging with both the ERA and Energy Policy WA, a specifically designed cost-reflective tariff (or tariffs) that reflects the special characteristics of electricity demand at EV charging sites and promotes the efficient use of the grid, with this tariff (or tariffs) to form part of Western Power's 2027/28 – 2031-32 access arrangement proposal.

ATTACHMENT 1: WP utilisation measurement overstates actual utilisation

Table 1 and Figure 1 below demonstrate how WP’s proposed asset utilisation method significantly overstates actual utilisation. The result is the higher demand charges commence earlier. To illustrate the overstatement of utilisation further, consider the following simple example:

Charging station characteristics	WP utilisation method	Actual asset utilisation
<ul style="list-style-type: none"> • 2 bays of concurrent charging • Typical charging duration: 30mins • 1 charging session per day. 	<ul style="list-style-type: none"> • 2x 30min intervals (a 30min charging session will span two intervals). • Total 48 min intervals / day. 	<ul style="list-style-type: none"> • 30min charging • 2 charging bays
	2 intervals / 48 total = 4%	30min / 24hr / 2 bays = 1%

Table 1: Simple comparison of WP utilisation and asset utilisation

For simplicity and clarity, Evie recommends that WP use industry standard Capacity Factor to measure utilisation.

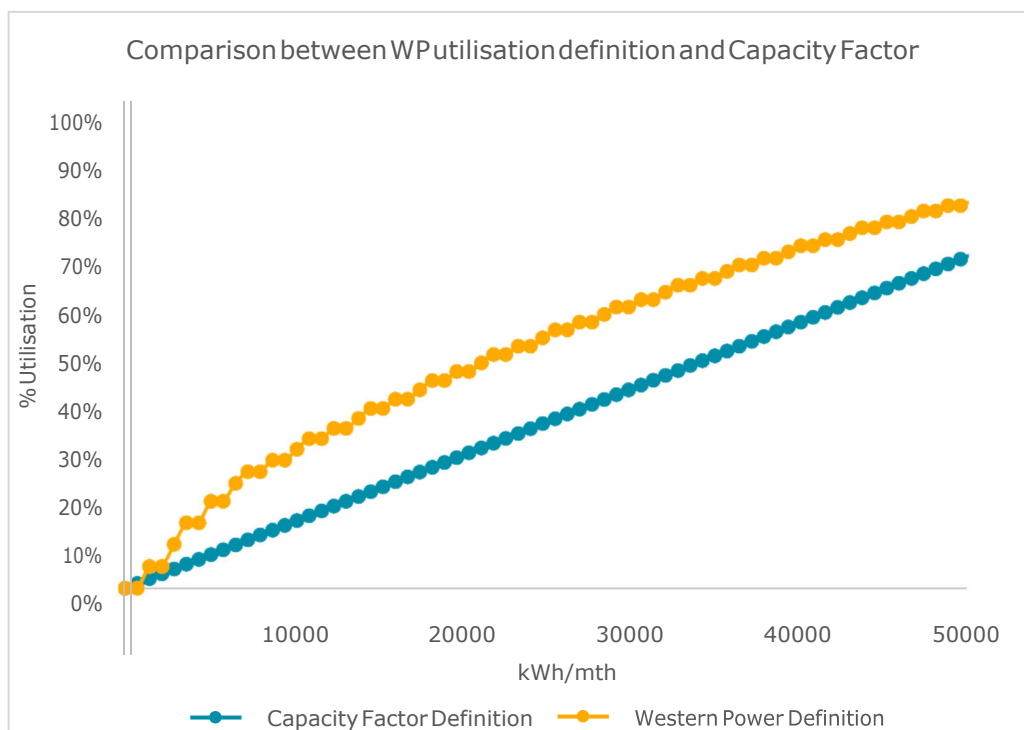


Figure 1: WP utilisation measurement significantly overstates asset utilisation

ATTACHMENT 2: Comparison of cost of WP proposed tariff RT46 with existing TOU tariff

Figure 2 and Figure 3 below illustrate the cost of the proposed RT46 tariff compared with existing TOU tariff (L1 transitioning to R3). Figure 2 is for metropolitan sites and Figure 3 is for ultra-fast charging at highway locations. Also noted is the current price of public fast charging that Evie charges nationally. The charts are illustrative and make assumptions of peak demand values, based on data from Evie’s network.

It is clear that the proposed RT46 tariff is prohibitively expensive and would necessitate pricing of public charging that is well beyond what drivers would be willing to pay. The result would be very low utilisation of public charging, to the extent that charging network operators simply won’t invest in WA.

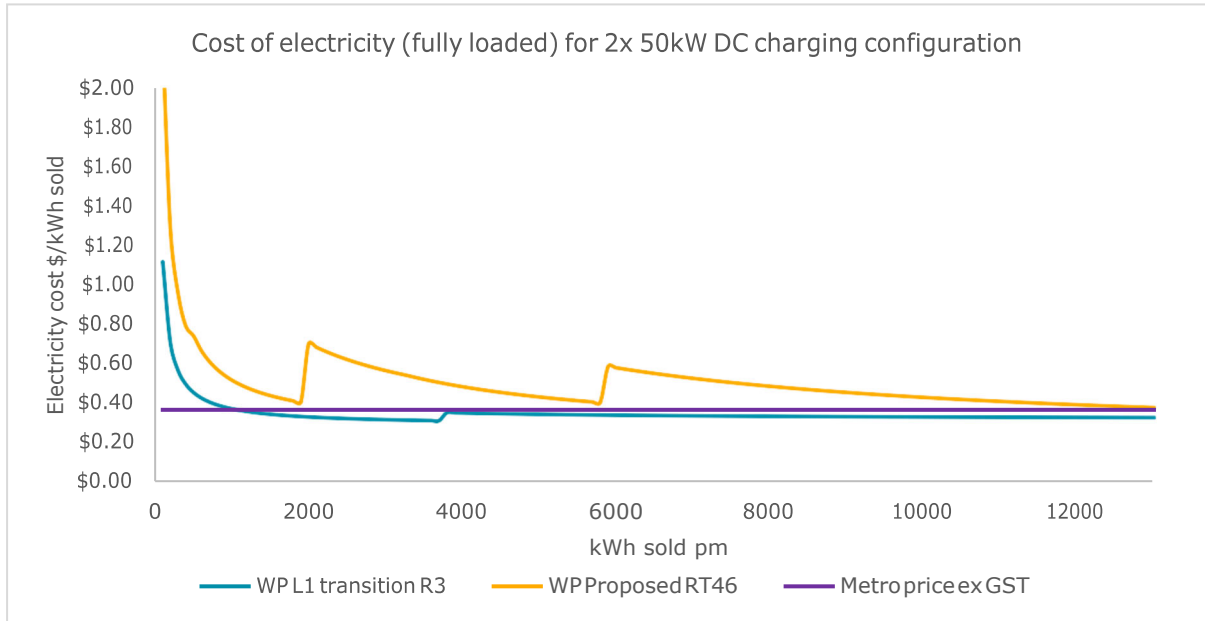


Figure 2: Cost of electricity for a metropolitan style DC fast charging configuration (2x 50kW chargers)

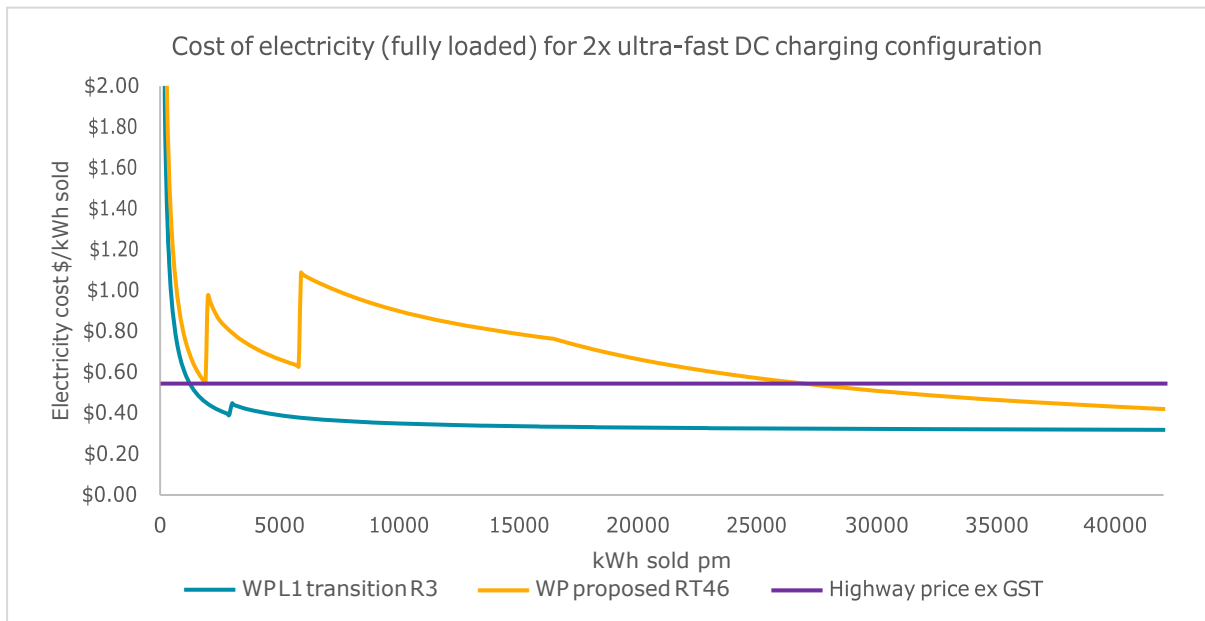


Figure 3: Cost of electricity for an ultra-fast highway style DC fast charging configuration (2x 350kW chargers)