

**Submission by Evie Networks  
To  
Economic Regulation Authority  
On  
Western Power  
Revised Proposed Access Arrangement  
And  
Access Arrangement Information**

***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 100 sites in operation and has major expansion plans going forward.*

## INTRODUCTION

Evie Networks welcomes the opportunity to respond to the revised proposal by Western Power for assessing the access arrangements for the AA5 period. Evie notes that Western Power has sought to respond further to stakeholder comments and feedback on its initial proposal for the AA5 period and subsequent changes to the structure of the new tariff for dedicated Electric vehicle (EV) charging stations. Evie also wishes to again 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.

## **WHAT WESTERN POWER IS PROPOSING**

Western Power is proposing to introduce two new, technology specific tariffs for dedicated EV charging stations that are intended to support the public charging of EVs in Western Australia (in line with the ERA's final decision on the framework and approach for AA5 and the ERA's Draft Decision). These new proposed EV charging station tariffs comprise:

- A fixed, daily charge for access to our network that reflects the costs of providing connection assets.
- A fixed, daily metering charge per meter.
- A sliding scale of demand charges that increase with utilisation, and remain at zero until 15 per cent utilisation.
- A sliding scale of off-peak and on-peak energy charges that decrease with utilisation.

As set out by Western Power, a key consideration in the latest design of a tariff applicable to dedicated public EV charging stations is to strike a balance between:

- Their **potential to cause significant future network costs, due to their very high demand**, which has the potential to be exacerbated in a small, isolated electricity network like the SWIS, in comparison to a large integrated electricity network like the NEM; and
- Their **low utilisation during the initial uptake of EVs**, which can inhibit their ability to pay for the additional costs they impose on the network, while also making a fair contribution to the cost of our existing network.

Additionally, Western Power noted that it had responded to earlier feedback that its initial proposed tariff structures for dedicated EV charging stations would make dedicated EV charging stations uneconomic at this stage in the uptake of EVs. Ie, principally due to the costs imposed by the demand charges that formed part of the structure of these tariffs.

Western Power specifically noted:

“.....stakeholders emphasised that demand charges applied to the highest level of demand measured in the previous 12 months, combined with very high but infrequent load at EV charging stations, gave rise to network charges that were disproportionate to the revenue they derive at this early stage in the uptake of EVs, thereby potentially introducing a disincentive to early adopters of the technology. “

As a result (and as outlined above), it has now developed a revised EV tariff with a sliding scale of variable charges, which increase with the extent to which EV charging stations draw on the network (their network use), and it believes that this sliding scale of demand charges “strikes an appropriate balance between:

- Supporting EV charging stations during the initial uptake of EVs, when their utilisation is low; and
- Ensuring that EV charging stations make a fair contribution to the recovery of our costs as their utilisation increases, ie, a contribution that is commensurate with that of other end-users that impose similar costs on our network.”

Significantly, Western Power went on to say (emphasis added):

“During development of the sliding scale to apply to the EV tariff, some stakeholders expressed concern about the early introduction of demand charges as they had the potential to greatly increase network costs while EV numbers and the resultant network draw were low. Some stakeholders suggested that rather than a stepped increase in the demand charges above a threshold, a more gradual increase in these charges for every one or two percentage point increase in the utilisation would result in less risk for retailers and a more equitable outcome. While Western Power understands these concerns, we have not implemented these changes for the following reasons:

- **the intent of the tariff structure is to signal the efficient utilisation of the network, with the demand charges only to apply during the on peak period** after a baseline level of network utilisation has been achieved; ..... and
- the **added complexity and cost required for both Western Power and retailers’ billing systems to accommodate tariff structures with multiple charging parameters and prices would outweigh the benefits – particularly given the expected forecast demand for these services is expected to be low over the AA5 period.**

**“Further, Western Power has designed the measure of network use to provide strong support to EV charging stations during this access period, ie, the calculation of network use by an EV charging site:**

- **excludes the twelve 30-minute intervals between 9am and 3pm (being the solar soak period in other tariffs);** and
- excludes the first 10kW of demand in any 30-minute interval.....

**“Western Power considers the dedicated EV charging tariff developed and introduced in AA5 needs to be commensurate with the expected demand for this service, while remaining cognisant of the potential future network costs these facilities can impose with high coincident demand during the network peak period. Western Power will continue to monitor the uptake of EVs and the use the network by dedicated EV charging stations over AA5 and beyond and will revise the tariff structure appropriately when EV charging stations no longer require the same level of support, ie, because their utilisation is much higher.”**

## **ASSESSMENT OF WESTERN POWER’S DESCRIPTION OF THE CONSIDERATIONS LEADING TO THE PROPOSED NEW TARIFF STRUCTURE**

Although Evie Networks recognises the efforts undertaken by Western Power to further improve the design of its dedicated EV charging site tariffs, it would wish to make the following general comments on the position presented by Western Power:

Potential to cause significant future network costs, due to their very high demand:

Western Power states that it is concerned that publicly available EV charging sites have the potential to cause significant future network costs, due to their very high demand. The key words here are “potential” and “future”. We respectfully submit that Western Power is seeking to “solve” for a problem that does not exist yet, and based on other statements in the TSS, would be very unlikely to arise over the forthcoming 5 year regulatory period.

In terms of overall demand by EV charging sites, Western Power is only expecting a very small number of public charging sites over the next 5 year regulatory period - 50 sites in the SWIS. Additionally, in terms of any potential negative localised impact on the network and resultant increase in network costs, this prospect is specifically covered by the EV charging site operator paying for local augmentation.

Further, Western Power does not acknowledge the significant network cost (avoided cost) benefits from EVs, as well as the role of public charging as a "solar soak" which helps Western Power address issues such as voltage control when there is excess solar during the day. Evie would expect that this would have been a major consideration as to why its proposed tariffs favour public charging between 9am and 3pm (the solar soak period) – and, as such, this "solar soak" tariff arrangement may be more of a benefit to Western Power than Charge Point Operators.

#### Low utilisation of charging sites expected during the initial uptake of EVs:

Western Power specifically acknowledges that there should only be a low utilisation of utilisation of publicly available charging sites during the initial uptake of EVs. As a result, it is submitted that the impact on the network over the next 5 years would be low – and, as already noted, localised impacts are addressed through augmentation of the local grid funded by the Charge Point Operator. This reinforces our view that Western Power is trying to "solve" for a problem that does not exist yet, and based on other statements in the TSS, would be very unlikely to arise over the forthcoming 5 year regulatory period.

#### Recovery of Efficient Costs

Western Power's new tariff structure design is aimed at ensuring that EV charging stations make a fair contribution to the recovery of its costs as the utilisation of these charging sites increases, ie, make a contribution that is commensurate with that of other end-users that impose similar costs on its network. However the publicly available EV charging site sector is a totally new industry – and as presented by Evie in earlier submissions, this new industry:

- Has a very different load profile from other end-users on the Western Power network.
- Is curtailable (ie, via load management) – and, therefore, can be managed to minimise any adverse impacts on the grid at peak periods.
- Can provide significant network avoided cost benefits that benefit all electricity consumers, not just EV drivers.

Western Power has not recognised curtailability in its assessment of the impact of EV charging stations on the SWIS and in its tariff design.

Evie therefore continues to submit that the appropriate tariff for publicly available EV charging sites over the AA5 period – which will see low levels of EV take-up and utilisation of sites – is an Energy Only Tariff.

### Efficient Utilisation of the Network

The intent of the new tariff structure for publicly available EV charging stations is to signal the efficient utilisation of the network, with the demand charges only to apply during the on peak period. However, as noted above, the technology used by CPOs such as Evie is highly controllable. As a result, Evie continues to submit that Demand Charges should not apply to sites where this controllability technology is in place during peak periods.

### Monitoring the uptake of EVs and the use the network by dedicated EV charging stations over AA5

Evie supports the proposal by Western Power to monitor the uptake of EVs and the use of the network by dedicated EV charging stations over AA5, and acknowledges its statement that this monitoring could lead it to and potentially revise the tariff structure appropriately in the future. However this position presented by Western Power is in relation to the implementation of its latest tariff structures which, for the reasons set out above (and presented in more detail in our earlier submissions), we believe cannot be supported on a “first principles” basis.

Evie therefore believes that the more appropriate approach would be to introduce a technology specific tariff for publicly available EV charging sites (an Energy Only Tariff) during a period of low demand (as expected by Western Power itself over AA5) and monitor the impact on the grid and, associated with this, the performance of load management/curtailability – with the data collected to be used to help design an optimal tariff structure for AA6 (when EV usage could be expected to be hitting a tipping point).

### **ASSESSMENT OF IMPACT OF WESTERN POWER’S REVISED TARIFF PROPOSAL**

Evie continues to submit that the Utilisation approach being introduced by Western Power is inappropriate versus the traditional approach of a Capacity Factor definition.

The effect of the use of this approach will lead to high electricity costs that will be inconsistent with stated aim of introducing specific tariffs for dedicated EV charging stations that aim to support the public charging of EVs in Western Australia (in line with the ERA’s final decision on the framework and approach for AA5 and the ERA’s Draft Decision).

This would mean that Western Australia would have the lowest demand threshold in the country, and very high costs relative to other States. It is submitted that this would not favour investment by CPOs in WA.

Specifically:

The Utilisation definition continues to be problematic:

- It overstates utilization by a factor of ~3 (varies with utilization).
- Evie is not aware of any other jurisdiction or DNSP using this approach. There is no practical reason for not using a capacity factor definition for utilization, as in other jurisdictions.
- The capacity factor definition is given by:

$$\frac{\text{monthly kWh sold (in applicable demand period)}}{\text{nameplate capacity} * 24 \text{ hours/day} * 30.4 \text{ days/month}}$$

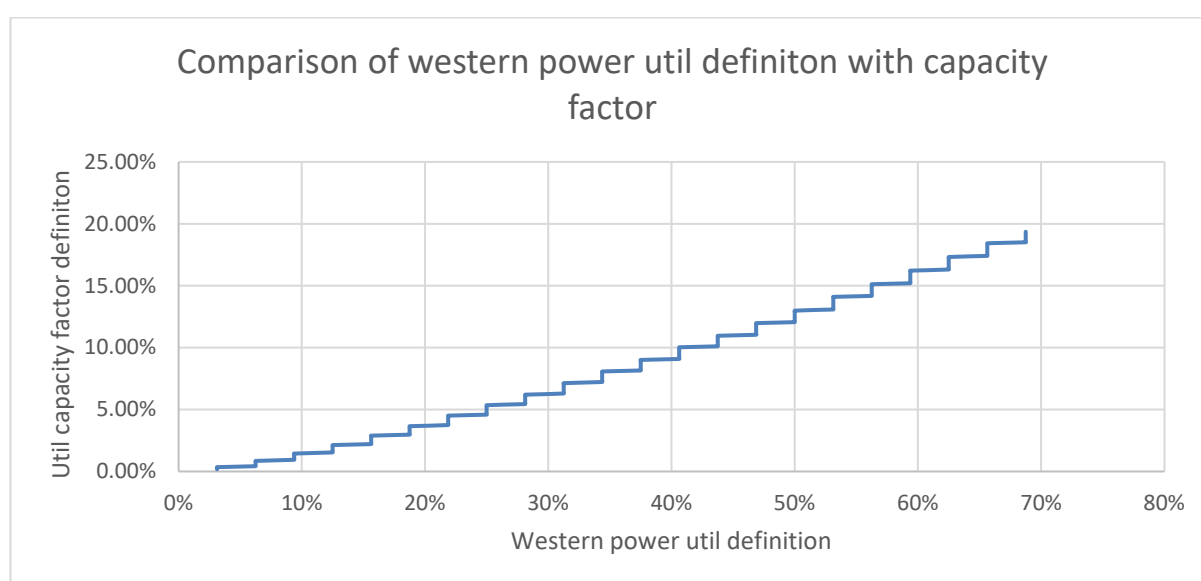


Figure 1: A comparison of Western Power's proposed definition as compared to the industry standard capacity factor definition. It can be seen that the Western Power definition overstates utilisation and we can't see any reason for using this approach.

Western power utilisation	Capacity factor utilisation	kWh sold PM
15%	2.21%	2834
25%	4.59%	5986

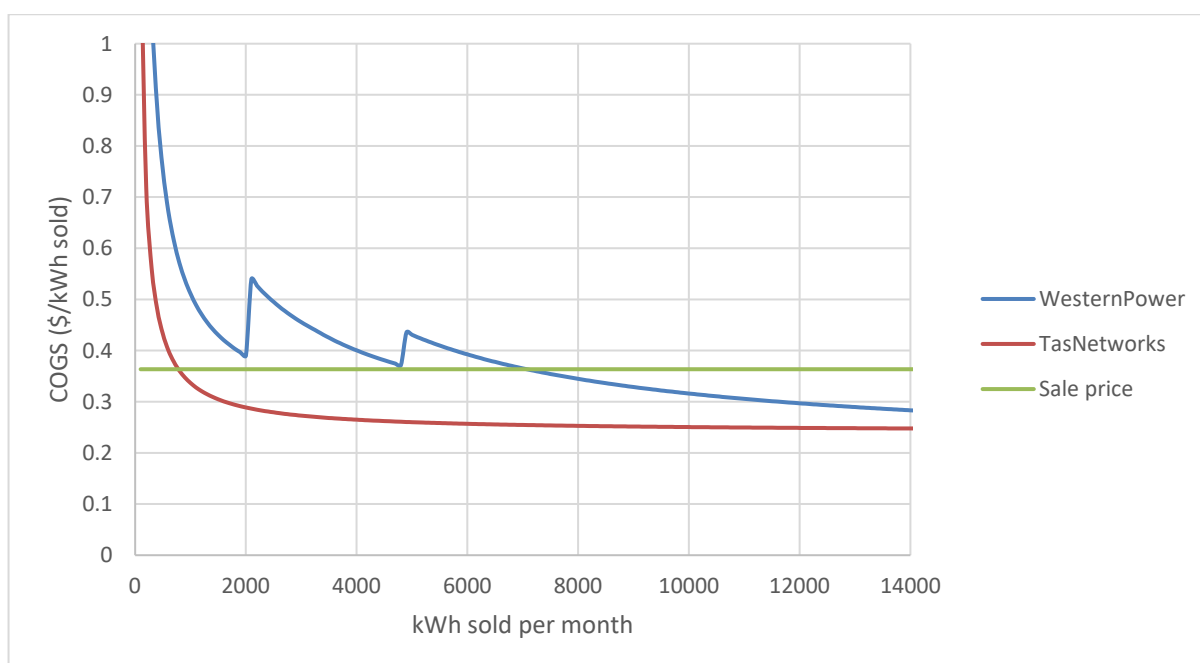
Figure 2: Even under current low utilisation we expect Evie sites to be paying full or part demand charges from day one.

Analysis of the expected outcomes under the new tariff proposal:

Detailed analysis undertaken by Evie shows that:

- The first demand band steps in at 2834 kWh/mo – which equates to 34MWh/pa. This would be the lowest demand threshold in the country. The nearest demand charge threshold is Ausgrid EA302 and 40MWh - which is being progressively raised to 100MWh.

- Given the problematic definition of utilisation, Evie's sites would already be in the first demand band and, for many sites, would already be at the second maximum demand rate.
- It could be expected that at this stage that most of Evie's chargers would incur Demand Charges on day 1, despite the current low network utilisation.
- The expected COGS under the proposed new tariffs would be high compared to other DNSPs; an illustrative example is presented below. The point at which the expected COGS under the latest Western Power proposed EV charging site tariff would equal Evie's sale price to customers is well in excess of the average utilisation rate on its network.



## **CONCLUSION**

Analysis by Evie of this latest tariff structure for dedicated EV charging sites presented by Western Power continues to demonstrate it would produce unduly high electricity cost outcomes.

Evie therefore continues to submit, as it has in its previous submissions, that the tariff structure and pricing being put forward by Western Power would not support the rollout of publicly available fast and ultra fast EV charging stations across the State.

Evie therefore further submits that Western Power's latest EV charging site tariffs would be inconsistent with the ERA's final decision on the framework and approach for Western Power's fifth access arrangement review.



Evie has demonstrated that on a “first principles” basis, the general arguments presented by Western Power in its latest tariff proposal documents cannot be supported.

Western Power has submitted that its new tariff structure design is aimed at ensuring that EV charging stations make a fair contribution to the recovery of its costs as the utilisation of these charging sites increases. However the publicly available EV charging site sector is a totally new industry that:

- Has a very different load profile from other end-users on the Western Power network.
- Is curtailable (ie, via load management) – and, therefore, can be managed to minimise any adverse impacts on the grid at peak periods.
- Can provide significant network avoided cost benefits that benefit all electricity consumers, not just EV drivers.

Western Power has not taken these factors into account with its tariff design. Curtailability should be an important consideration in assessing the impact of EV charging stations on the SWIS and in tariff design. Evie therefore continues to submit, 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 latest revised proposed tariffs for dedicated EV charging sites on the grounds it would not support the rollout of publicly available EV charging stations across the State.
- The appropriate tariff for publicly available EV charging sites over the AA5 period – which will see low levels of EV take-up and utilisation of sites – is an Energy Only Tariff, with this being set at a level that would produce an energy cost equivalent to that paid by an EV owner charging at home.

As a result, Evie continues to submit that the ERA should:

- 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 (ie, curtailability) 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.

16 December 2022