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Economic Regulation Authority
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Submission on ERA's Issues Paper concerning Proposed Revisions to the Access Arrangement for Western Power Network 2022/23 – 2026/27

Dear Sir/Madam

Thank you for the opportunity to provide a public submission in response to ERA's issues paper on Western Power's proposed revisions to its network access arrangements for the AA5 period. My submission focusses on question 10 of the issues paper, which states:

10. The ERA is seeking:

• Stakeholder views on the proposed new tariffs and new tariff structures, including whether they will facilitate the connection of storage and electric vehicle charging stations and encourage demand patterns that will minimise the need for network augmentation.

• Stakeholder views on, and any information to assist in the review of, the tariff structure, future cost estimates, cost allocation and rebalancing of tariffs.

My perspective on these tariff related issues comes from my experience as Tariff Policy Officer with SECWA and Western Power in the late-1980's to the mid-1990s. Having undertaken several Cost-of-Service studies, covering the whole electricity business of generation, transmission and distribution, I am able to provide informed comments on network tariffs, tariff structures and cost allocation methods. As I was directly involved in the business electricity tariff restructuring program in the early 1990s, I am able to also provide informed comments on the restructuring of tariffs.

My key recommendations concerning Western Power's AA5 submission are:

1. ***Western Power should make it clear in its AA5 submission that its network tariff customers are fundamentally seven electricity retailers, not the million plus electricity end-use customers that its submission tends to convey.***

   Western Power, as the electricity network service provider, does provide important physical network services such as network control and fault rectification, building and maintaining network infrastructure, metering and providing network connections for nearly all end-use electricity customers on the south-west interconnected system (SWIS). However end-use electricity customers are not Western Power's customers when it comes to its network tariffs.

Western Power's fundamental customers for its network tariffs are seven electricity retailers who provide their retail tariffs and bills to nearly all SWIS end-use electricity customers. Western Power's network tariffs are a cost input to retailers along with energy and retail costs. The network tariffs can influence retailers, but it is the retailer's tariffs that have the potential to directly influence end-use electricity customer behaviour.

In Western Power's 333-page AA5 submission the important position that retailers play seems to be downplayed, with them mentioned only 21 times in the whole submission and their role in tariffs only mentioned in a couple of paragraphs. Western Power conveys the impression that its network tariffs directly impact end-use electricity customers. This impression is amplified by the multitude of network tariffs it provides, which tend to be structured to mirror Synergy's retail tariffs, and with the development of new technology specific network tariffs. Western Power should rectify this impression in its submission to provide the correct balance of the importance of its network tariffs with the importance of the tariffs provided by retailers for end-use electricity customers.

2. ***Western Power should provide its detailed Cost of Supply model used for its AA5 submission, for public scrutiny.***

   This is to assure stakeholders that the methodology of apportioning network costs across its defined network tariff customer groups is fair and reasonable. The last time Western Power provided enough detail for its Cost of Supply model was in its 2016/17 Price List information. This document included customer class demand estimates, which are needed to allocate costs correctly. The informative format used in the 2016/17 Price List should be reinstated for Western Power's AA5 submission.

3. ***Western Power's division between network demand related costs and customer use of system (non-demand) costs in the AA5 Cost of Supply study should be modified to include a comparison of underground network costs.***

   The allocation between demand and customer use of system costs for the HV network has historically relied on a 2004 cost comparison between a minimal capacity overhead line verses a high-capacity overhead line. The same type of cost comparison should be undertaken for and underground network. Then the percentage of demand to customer use of system costs could be determined to reflect Western Power actual overhead and underground network asset mix, and applied the required cost pools.

4. ***The model which translates the network costs derived from the Cost of Supply model to the individual network tariffs should be published for public scrutiny.***

   This is to assure stakeholders that each network tariff has been set fairly, firstly by showing that the projected revenue for each customer class yields the same revenue requirement calculated in the Cost of Supply study and secondly by enabling the tariff structures and rates to be scrutinised, to ensure the tariffs are cost reflective across customers within the customer classes.

5. ***Demand-based network tariffs should be determined from the 2022 Cost of Supply study modelling as an alternative to the current kWh consumption tariffs.***

   In my submission to the AA4 process in 2017, demand-based network tariffs for customer groups were calculated as an alternative to the kWh-based network tariffs. The tariffs developed ensures that these demand-based tariffs received the same revenue-as the existing kWh-based network tariffs. The demand rates ($/kW) were based on the customer group's ADMDs (After Diversity Demand Maximum Demand) that were available from the 2016/17 Price List information. To determine the demand rate ($/kW) applicable for an individual end-use electricity customer in each customer group, an additional step is required. The relationship between the sum of the individual end-use customer demands and the customer group ADMD is needed. This relationship together with 2022 Cost of Supply model would allow demand-based network tariffs to be calculated and available for consideration as alternatives to the kWh-based tariffs.

6. ***Western Power should set all its network tariffs based upon its actual cost drivers, being electricity demand (kW) and customer related (non-demand) costs. The existing consumption (kWh) based network tariffs should be converted to demand-based tariffs to be more cost reflective.***

   While the Western Power's network tariffs applicable to most large electricity consumers are already demand-(kW) based, the network tariffs applicable to the smaller electricity consumers are still consumption (kWh) based and need conversion to demand-based tariffs.

   The costs for the transmission network are generally demand-based, while the costs for the distribution network are a combination of customer use of system costs and demand-based costs.

   For the distribution system, the customer use of system costs not only relate the

provision of meters and billing systems but also to the elements of electricity network that ensure the consumer has access to electricity, at their location, at a usable voltage. The incremental cost of increasing the sizing the network elements to meet the consumer's kW demand are the network's demand related costs. Both the consumer's peak demand and their demand co-incident with the network peak impact on network costs.

The any- time electricity usage (kWh) of an individual consumer does not directly affect the type or size of the network components, and therefore is no substitute for consumer demand (kW) in providing cost reflective network tariff structures.

Thus, to make the small business and residential network tariffs cost reflective, the current kWh-based tariffs need to be converted to demand (kW)-based tariffs which would comprise a fixed component ($/customer) reflecting customer use of system (non-demand) costs and a variable demand component (typically $/kW) based on the consumers kW demand and/or the consumers kW demand contribution to the network peak demand.

The time is right to convert the small business and residential kWh-based network tariffs to demand (kW)-based tariffs. While currently most electricity consumers have meters that cannot record demand (kW), the new digital meters being installed, with the Advanced Meter Infrastructure (AMI) program will have this demand (kW) recording capability. Western Power should convert its kWh-based network tariffs to demand-based tariffs, even before all customers have metering with demand recording capability. This only able to be successfully implemented currently, because these retail customers are non-contestable and so do not see Western Power's network tariffs in their electricity bill. The restructure of these network tariffs could be designed to ensure Synergy's network tariff bill would remain the same.

The window for Westen Power to change its kWh-based network tariffs to the more cost reflective demand-based tariffs will not last forever. Once Synergy's million plus residential and small business electricity customers become contestable and retail billing shows explicit network tariffs, Western Power will be stuck with their current kWh-based network tariffs. These network tariffs will be extremely difficult to structural change due to dealing with political problem of "customers being made worse off". This will also result in Western Power's revenue being adversely affected from the energy transformation process, similar to that experienced by Synergy, due

to increased solar based distributed energy generation reducing the billed electricity kWh consumption of these customers.

7. ***The forward-looking efficient cost of the network calculated in the AA5 submission is flawed, and should be re-examined.***

   The flaws in Western Power's forward-looking network cost estimate include:

   a. The growth costs used in the calculation are not just demand related but include customer use of system related costs.

   b. The forecast costs of meeting the future demand growth are artificially suppressed. This is because in previous years, increased solar electricity input into the network has reduced network reinforcement costs required to meet increasing air-conditioning load in summer This was true when the summer peak was at 2pm, but this has changed as air-conditioning load continues to increase and so the peak load has shifted to 6pm on extremely hot summer weekdays.

   c. It is unclear whether the costs of the new underground sub-division networks, which are gifted to Westen Power have been included.

   d. No network costing for developing a new greenfield load area has been provided as a sense check for these macro estimations. A simple sense check based on Western Power's stores equipment catalogue from 2017 shows that a 1000 kVA transformer costs $30,000, giving a cost of $30/kW. So, the forward-looking $23/kW figure looks wanting.

While time has constrained my submission, I would be happy to discuss these points and other issues with the ERA or Western Power.

Again, thank you for the opportunity to present my submission.

Yours Faithfully

Craig Hosking