20 April 2022

Ms Elizabeth Walters
Economic Regulation Authority
4th Floor Albert Facey House
469 Wellington Street
Perth 6000

Private submission on Western Power's published fifth access arrangement submission and the ERA's Issues Paper

Dear Elizabeth,

I appreciate the opportunity to comment on Western Power's AA5 submission and the matters raised in the Economic Regulation Authority's (ERA) Issues Paper.

There are many positives in Western Power's AA5 submission, including the proposed introduction of new better-structured super-off-peak reference tariffs RT34 - RT37, and grandfathering/transitioning from existing tariffs that are not structured efficiently. These new network tariffs should allow retailers to offer tariffs that help customers better manage their energy costs at the same time as reducing costs of supply.

In this submission I only comment on a few matters. I would like to discuss these matters in more detail with the ERA and Western Power.

More detailed comment can be found in the Expert Consumer Panel's submission to the ERA.

Yours sincerely,

Noel Schubert

Member of the Expert Consumer Panel[1]

[1] The opinions expressed in this submission are the author's, and do not necessarily reflect the views of the ECP as a whole. The ECP is a group focussed on consumers, supported by the Western Australian Advocacy for Consumers of Energy Program to contribute consumer perspectives on energy sector matters of a technical nature.

Submission on Western Power's published fifth access arrangement submission and the ERA's Issues Paper

Tariff cost allocation methods

I, and others, are concerned about Western Power's tariff cost allocation methods as described in its AA5 submission documents. Western Power has not provided sufficient information and detailed models publicly to allow proper scrutiny of how costs are proposed to be allocated. This means we do not have confidence in the proposed methods.

We would like to discuss the proposed methods with the ERA and Western Power.

The proposed approach seems to justify lower variable charges (perhaps by leaving out valid costs from the forward looking long-run-marginal-costs) and then allocating the higher remaining costs to the 'catch-all' fixed costs which increase them more than is valid. The long-term impact of this will be less-focused attention by users and end-use customers on managing the main long-term drivers of network costs (coincident kVA demand) which then results in more capex, an increased Regulated Asset Base (RAB) and higher costs to consumers. This is not efficient.

Network charges to customers – treatment of gifted network assets

Western Power's explanations of how it allocates costs and sets tariffs - in the TSS Overview and Technical Summary documents - 'attributes' network values to different customer groups as part of the cost allocation and tariff setting process.

I understand that when a developer of a new subdivision or other development installs electricity and other assets (water, sewerage, gas etc.) within the subdivision or development, normal practice is for the developer to 'gift' the electricity assets to Western Power for it to operate and maintain.

Purchasers of land lots in the subdivision pay for the capital cost of those assets in the purchase price of the lots, and similarly for other developments. Charging electricity customers within those subdivisions or developments for the capital cost of those assets, through network tariffs, would in-effect be charging twice for the capital costs.

In setting network tariffs, how does Western Power allow for the fact that the capital cost of those electrical assets within these subdivisions or developments have already been paid for by the owners of the lots or their part of a development?

Does it matter if the value of network that Western Power attributes to (say) residential customers' use of the network in this process includes the (replacement?) value of gifted assets that many residential customers have already paid for when they purchase properties in gifted asset subdivisions or developments? Does this over-estimate the value and so distort the cost allocations, invalidly?

Western Power estimates of long run marginal costs

Western Power's LRMC estimates in the following AA5 extract (from the TSS technical summary page 7) seem low compared to other industry figures determined in the past for electricity networks (including by Western Power).

"**2.4.2 Results of our analysis**
We present below our estimates of LRMC by reference to the voltage level to which customers using each reference service connect.

Table 2.2: Estimates of LRMC

Low voltage residential	$22.70 per kW
Low voltage business	$23.65 per kW
High voltage	$24.70 per kW

Our reasonably similar estimates of LRMC on the high and low voltage network reflect that the majority of growth-related expenditure relates to the high voltage network, with the consequence that an incremental unit of demand on either the high or low voltage network results in a similar level of future costs".

The low WACC used for discounting in AA5 could be one reason, but I am concerned that Western Power is not including all costs in the derivation, or that the time period of 10 years used for costs is too short to capture all likely expenditure in the long term from network augmentation due to demand growth.

After the recent summer, forecast demand growth is likely to be higher than assumed in Western Power's AA5 submission, and so capex will likely be higher than assumed.

A kW of demand growth in the low voltage distribution system will in the long term cause the need for a kW of network augmentation of the LV distribution system, plus the HV distribution system, plus the transmission system because the latter two both supply the LV system - aside from demand being supplied by local generation in the distribution system. This is even more likely if there is significant 'electrification' of customer energy use to abate greenhouse gas emissions, and high take-up of electric vehicles.

Transmission costs don't seem to be mentioned, but the transmission system does need augmenting as demand grows. There are a number of locations at present in the SWIS where transmission capacity constrains customers from connecting larger loads (e.g. in the Albany transmission supply area). In the long term there would be more need for transmission augmentation in more areas.

Also, shouldn't these figures be $/kW/annum since the costs have been annualised rather than just $/kW?

New tariffs (RT40 and RT41) for dedicated electric vehicle charging stations based on the existing RT5 and RT6 reference tariffs, and a new high voltage distribution storage service tariff (RT39) based on RT5

Western Power is proposing that the new reference tariffs for dedicated electric vehicle charging stations be based on the existing RT5 and RT6 anytime maximum demand reference tariffs.

Western Power is also proposing that the new high voltage distribution storage service tariff (RT39) be based on the existing RT5 anytime maximum demand reference tariff.

> I ask the ERA and Western Power to not prolong the deficiencies in the current RT5 and RT6 tariffs by basing new EV charging station or storage tariffs on them, but rather to improve the RT5 and RT6 tariffs so that they are a suitable basis for the new tariffs, or offer new, better-structured tariffs for these new applications.

The RT5 and RT6 kVA anytime maximum demand tariffs have a peak period from 3pm to 9pm on weekdays, which is appropriate as it coincides with high network demand times, but high demand can also occur on weekends during these times.

However, the on-peak and off-peak time periods of the tariffs are only used for calculating a poorly-focussed, blunt signal to customers (a discount to the demand charge of up to 30%) to encourage them to increase their proportion of off-peak energy (kWh) consumption relative to their total energy consumption, not focussing on demand (kVA).

These energy consumption quantities are irrelevant to network costs. It is kVA demand at peak network demand times (coincident demand) or minimum network demand times (due to rooftop PV) that drive network costs. The blunt demand charge discount, based on the off-peak energy proportion of total energy consumption, is not related to network costs or cost drivers at all.

Customers on the RT5 and RT6 tariffs have no effective signal to reduce their coincident demand (rather than their anytime maximum demand, or energy use across peak periods), or to encourage higher demand/usage at low-demand times (when there is spare network capacity) because the kVA demand charge applies to their highest half-hourly demand any time of the year on-peak or off-peak.

Examples of customers on current RT5 or RT6 tariff structures

1. Water Corporation has pointed out that it has flexible pumping loads on these RT5 and RT6 tariffs. These flexible loads could increase pumping demand during low network demand times, like the middle of the day in mild weather, when rooftop PV output is high and low network demands are causing issues. However the application of the rolling 12-month anytime maximum demand charges of the tariffs mean Water Corporation would incur significant extra demand charge costs for a whole year if they did increase their demand during the middle of the day above their normal managed anytime maximum demand. They would be penalised by the current structures of the RT5 and RT6 tariffs for helping the network overcome low demand problems. If the full demand charge only applied in the on-peak period it would resolve this significant structural inefficiency in these tariffs.
2. Two customers with the same anytime maximum demand at 6pm on the highest-network-demand day of the year will be charged the demand charge for a whole year less any discount as

discussed above. If customer A receives the 30% discount and customer B receives little or no discount, because of their respective kWh energy consumption profiles off-peak versus on-peak, then why is there a difference in charges when Western Power's cost to supply them both will be the same – driven by their anytime maximum demand at 6pm?

3. Similarly, if a distribution connected battery storage installation has its peak demand in the middle of the day (by charging when network demand is low and helping to avoid reverse power or voltage issues due to the low demand), it will be charged for its peak (mid-day) demand (less a likely 30% discount) for a whole year. If it is also discharging at network peak demand time (around 6pm), it will be helping to lower network peak demand and defer network capacity augmentation capex. The network cost to supply this battery installation will be a lot lower than for both customers A and B in example 2. above, and yet this battery installation will be charged the same as customer B, assuming they both have the same maximum (anytime) half-hourly demand.

These examples illustrate that the poorly-focussed energy-based discount, and the anytime application of the demand charge, of the RT5 and RT6 tariffs result in inappropriate charges to customers.

I acknowledge that Western Power has to provide sufficient network capacity to supply a customer's anytime-maximum-demand – the rationale for charging for this.

However, only a small part of the network nearest to the customer has its required network capacity determined by the customer's anytime-maximum-demand, which incidentally happens to be equal to its coincident demand on those network elements anyway. Upstream of those elements, where the network capacity is shared with other customers, the network's required capacity is determined by the aggregated coincident demands of all customers supplied by each network element. It is only a single customer's coincident demand for each network element supplying the customer that drives its share of required capacity of each element, and so what should be charged to that customer.

It would be relatively simple to improve the RT5 and RT6 tariffs so that their structures are more effective and efficient and a suitable basis for the new EV charging station and storage tariffs.

For many years the gazetted S1 and T1 retail tariffs had their demand charges based on the higher of the on-peak maximum half-hourly demand or 30% of the off-peak maximum half-hourly demand – whichever was greater, in a billing period. This enabled higher off-peak demand than on-peak demand to occur without a financial cost to the customer. Such a structure would provide the right incentives for network

The full demand charge of the RT5 and RT6 tariffs could be changed to apply only to demand occurring during the on-peak period (3pm to 9pm), any day ideally rather than just on weekdays, which would then make the demand charge a little closer towards a 'coincident demand' charge (coincident with network peak demand times), although it would apply throughout the year rather than only at annual network peak demand times.

To further improve these tariffs, application of the demand charge only to peak periods on the few highest network demand days of the year would make it even more of a coincident demand charge and incentivise customer demand to be managed on those days that actually matter to the network.

demand now, with a peak period of 3pm to 9pm, to allow increased demand in the middle of the day as needed in low-demand situations caused by rooftop PV.

Many customers make investment decisions for things such as their buildings, appliances and equipment, business operating patterns, and solar PV systems taking into account energy price signals. More recently some are making choices to invest in newer technologies such as batteries and electric vehicles. The viability of these choices, which can have long term implications for both the customer and the network, is determined by the electricity tariffs among other factors.

Tariffs are an important foundation to electricity supply and consumption, with signals that drive many outcomes over time which are not easy or quick to rectify, so ongoing poor tariffs prolong ongoing poor outcomes.

The demand profiles we currently see in the network and wholesale market, and important challenges we are working hard to manage (e.g. peak demand, network overload outages, steep demand ramp rates, low minimum demand, voltage management and more) are the cumulative result of customer decisions based on less-than-optimal retail and network tariffs over many years.

It is important that electricity tariffs provide signals that are in the long-term interest of consumers as the new Access Code objective requires.

I would like to work cooperatively with Western Power, the ERA, EPWA and Synergy to help implement better tariffs.