

Addendum 7.1.6: Tariff trials report

Regulatory proposal for the ACT electricity
distribution network 2024–29

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1. Introduction

Evoenergy trialled sub-threshold tariffs in 2021/22 and 2022/23, in accordance with 6.18.1C of the National Electricity Rules (NER). Evoenergy commenced these sub-threshold tariffs (hereafter ‘tariff trials’) with a view to making such tariffs more widely available in future regulatory periods as these tariffs have the potential to provide customers with more control over their network electricity bills, improve network utilisation, and enable efficient integration of distributed energy resources (DER)¹ in the distribution network. The tariff trialled during 2021/22 and 2022/23 are as follows.

- Residential battery tariff
- Large-scale battery tariff

In the remainder of this report, Evoenergy sets out:

- the tariff trial structures, eligibility and duration;
- engagement on the tariff trials;
- findings from the tariff trials; and
- alignment of the tariff trials with Evoenergy’s 2019-24 TSS strategy.

2. Structure, eligibility and duration of tariff trials

This section outlines the duration of the tariff trials, the structure of the tariffs, and the mechanisms by which customers were assigned to the trial tariffs.

2.1. Tariff trial period

Evoenergy notified the Australian Energy Regulator (AER) of its intention to commence tariff trials in February 2021, in accordance with Rule 6.18.1C, with an intended commencement date of 1 July 2021. The tariffs trials were planned to run over a three-year period, concluding on 30 June 2024. The three-year period was nominated so that:

- customers on the trial would be able to potentially transition to a similar new, AER-approved tariff (through the TSS process) on 1 July 2024; and
- the trials would provide data over an extended period to inform the 2024-29 tariff structure statement (TSS).

2.2. Residential battery tariff structure, eligibility and assignment

The residential battery tariff structure was specifically designed for the future residential customer. The tariff was designed for customers with behind-the-meter batteries, electric vehicles (EVs) and/or other energy technologies (such as home energy management systems (HEMS)²) that can be used to actively monitor energy use and generation, and dynamically respond to network prices.

The residential battery tariff comprised the following tariff components.

- Fixed supply charge
- Time of use (TOU) consumption charges

¹ DER is renewable energy that is generated by small generators including rooftop solar and home battery storage.

² The HEMS technology enables households to automatically respond to network price signals, with little or no ongoing input from the customer. This technology also allows Evoenergy to send sharper, more cost reflective price signals since the HEMS device will primarily be responsible for optimising import/export behaviour on the customers’ behalf.

- Seasonal peak demand import charge
- Seasonal export charge
- Critical peak export rebate

The residential battery tariff was established on an opt-in basis. To be eligible for the residential battery tariff, a customer needed to:

1. be a residential customer;³
2. have a behind-the-meter battery or an EV which is charged on the customer's premises; and
3. have a smart meter.

Customers could register their interest for the tariff trial by completing a form on Evoenergy's website and could opt-out to an eligible tariff at any time in accordance with Evoenergy's 2019-24 tariff assignment policy.

The ACT has a relatively high penetration of behind-the-meter batteries installed and electric vehicle (EV) ownership. Hence, Evoenergy considered it prudent to develop a network tariff suitable for customers with such technology. However, despite deep engagement with several retailers, there was a reluctance to pass the network tariff trial price signals through to end customers. Without a retailer to join the tariff trial project, there were no residential customers assigned to the residential tariff trial. Evoenergy understands from retailers that their decision not to participate is primarily a result of the transaction costs incurred by retailers, rather than any perceived shortcomings in the tariff design.

2.3. Large-scale battery tariff structure, eligibility and assignment

Several large-scale batteries are expected to connect to the ACT electricity network in the coming years. Many of these (listed below) are in operation, planning or construction stages.

1. 2.5MW/5MWh battery in the northwest of the ACT owned and operated by the Elvin Group.
2. 10MW/20MWh battery proposed by ITP for the Molonglo Valley in the western urban area of the ACT.
3. The Capital Battery⁴ that is under construction.
4. Funding for 250MW of battery storage announced by the ACT government in the 2022/23 budget⁵.
5. Funding for three additional network scale batteries in the ACT announced in December 2022⁶ under the Community Batteries for Household Solar program established by the Federal government.

Given these developments, Evoenergy considered it appropriate to develop a tariff designed for large scale batteries.

Large-scale batteries have the potential to both impose network costs (similar to other large customers) and reduce network costs (through their ability to address import or export related network constraints). In contrast to many of Evoenergy's other customers, large-scale batteries are not primarily 'consumers' of electricity. Rather, these batteries are typically commercial entities that import and export energy at different times, participate in wholesale electricity markets, and provide other services (e.g. Frequency Control Ancillary Services). The large-scale battery tariff trial intended to test cost-reflective charging arrangements within the unique operating capacity of large scale batteries.

The sophisticated nature of their connection means that large-scale batteries can respond effectively to cost reflective price signals and contribute to improving network utilisation. In turn, improving network utilisation may require large scale batteries to respond differently, depending on where in the distribution network they are located (i.e. in a commercial or residential area).

³ As defined under Evoenergy's Statement of Tariff Classes and Tariffs.

⁴ <https://capitalbattery.com.au>

⁵ <https://www.climatechoices.act.gov.au/policy-programs/big-canberra-battery>

⁶ <https://minister.dcceew.gov.au/bowen/media-releases/powering-australian-communities-solar-storage>

The purpose of the large-scale battery tariff trial was to test new charging arrangements that give recognition to both the costs and benefits of large-scale batteries and encourage their efficient participation in the distribution network. The structure of the tariff trial was designed in accordance with three overarching principles.

- Each component of the tariff is cost reflective – that is, bills for battery customers will be based on their contribution to distribution and transmission costs.
- Equitable contribution to costs and avoiding double counting – all customers should make a contribution to the recovery of the efficient cost of the network, such that other customers still benefit if a battery elects not to provide network support, in pursuance of other revenue streams (such as providing wholesale market services).
- Prevent cross-subsidisation of network costs – Evoenergy maintains a technology agnostic approach to network charging, which preserves competitive neutrality in the market.

Based on these principles, the tariff structure of the large-scale battery tariff comprised the following components.

- Peak Demand Charge
- Net consumption charge
- Export critical peak rebate/charge
- Capacity charge
- Avoided / Incurred TUOS Charge

To be eligible for the large-scale battery tariff, a customer needed to fulfil all of the following criteria.

- Be a commercial low voltage (LV) or high voltage (HV) customer.
- Have a stand-alone grid-connected battery.
- Have a minimum battery size of 200kVA.

Customers on the large-scale battery tariff can opt-out to an eligible tariff at any time in accordance with Evoenergy's 2019-24 tariff assignment policy.

3. Tariff trial engagement

Evoenergy engaged with customers, retailers, aggregators, and the ACT Government about the network tariff trials. This engagement commenced in 2020, well before the trial start date of July 2021. A summary of the engagement and feedback is provided below. A more detailed outline of the engagement is covered in section 5 of Appendix 7.1.

3.1. Customers

Evoenergy engaged with a range of customers including large scale battery proponents and residential customers living in ACT suburbs that have high penetrations of behind-the-meter renewable energy technology. The engagement on the residential battery tariff was conducted via customer workshops, while the approach to engaging with large scale battery operators was via one-on-one meetings. Evoenergy also engaged via the Energy Consumer Reference Council (ECRC), reaching a wide spectrum of consumer representatives. At the engagement forums, Evoenergy discussed the principles, structure and indicative bill impacts associated with the trials.

3.2. Retailers

Evoenergy's tariff reform engagement with retailers is an ongoing conversation. Evoenergy commenced engagement with retailers about tariff trials for residential and large-scale batteries in 2020 with a series of one-on-one online and face-to-face meetings. The retailers included large national retailers, smaller local retailers and bespoke retailers.

The tariff trial engagement commenced with an overview of the concept and purpose of network tariffs and progressed to sharing the specific network tariff trial structures. For retailers interested in participating in the tariff trials, Evoenergy frequently met to discuss passing through the network tariff trial price signals to end customers.

This tariff trial engagement developed working relationships with retailers that enabled a smooth transition for engagement more broadly about the proposed TSS for the 2024–29 regulatory period. These one-on-one meetings provided active ACT retailers with a detailed explanation of the tariff reforms Evoenergy intended to include in the proposed TSS.

3.3. Aggregators

The aggregators were initially engaged during at the commencement of Evoenergy’s tariff trials. This is because the tariffs being trialed include highly cost reflective price signals intended for response by a HEMS, as operated by an aggregator. Aggregators welcomed the opportunity to trial new tariffs designed for HEMS.

Evoenergy met with two main aggregators operating in the ACT. The feedback was received via one-on-one, face-to-face and online meetings. The feedback was very positive and they were keen to assist with the introduction of the tariff trials. For aggregators to be involved in the trials, they required a retailer to pass through the network price signals.

4. Tariff trial findings

This section sets out Evoenergy’s findings from the tariff trials.

4.1. Residential battery tariff

The tariff trial process enabled Evoenergy the opportunity to undertake thorough stakeholder engagement and modelling to inform tariff reform in the 2019-24 regulatory period. During the trial period, Evoenergy implemented changes and drew on stakeholder feedback, as outlined below.

Cost reflective tariffs

Evoenergy heard that stakeholders agree the residential battery tariff was highly cost reflective, thereby enabling greater control over the network component of electricity bills. More generally, Evoenergy heard there was a need for network tariff simplicity. In light of this feedback, Evoenergy decided to apply the cost reflective elements of the residential battery tariff into the design of newly proposed demand and TOU tariffs for residential customers. The specific elements of the proposed residential tariff reforms that are derived from the residential battery tariff trial are outlined below and discussed further in section 7.4 of the TSS.

- Introduction of a solar soak period in the middle of the day.
- Introduction of TOU charges into a demand tariff.
- Introduction of a separate export tariff with both a charge and rebate.

To address concerns about simplicity, Evoenergy has significantly improved consistency between the structure of the proposed residential demand and TOU tariffs, with both tariffs containing the following aligned features, some of which were derived from the tariff trial.

- Solar soak period between 11am and 3pm AEST;
- Off-peak period to between 8pm and 11am, and between 3pm and 5pm AEST.

To further address concerns about simplicity, and the take-up of the residential battery tariff by retailers, Evoenergy decided not to introduce this as a standalone tariff in the 2024-29 regulatory period. Consequently, Evoenergy intends to cease the residential battery tariff trial at the end of

2022/23 and will advise the AER accordingly in February 2023, through the sub-threshold tariff notification, in accordance with Section 6.18.1C of the Rules.

Export pricing

The residential battery tariff trial provided an opportunity for Evoenergy to trial export pricing. Stakeholder engagement revealed that the ACT community were generally supportive of introducing export pricing, and their feedback shaped the design and conservative introduction of the proposed export tariff for the 2024-29 regulatory period (see section 4 of the TSS).

As a result, Evoenergy is proposing to introduce a secondary export tariff for residential exporting customers. This secondary tariff will apply alongside residential customers' (primary) demand or TOU tariff, as residential customers on the export tariff will need to have a smart meter installed. This secondary tariff is designed to promote efficient export decisions during the solar soak period and to incentivise exports during the evening peak.

Eligibility criteria

When the residential battery tariff commenced in 2021/22, the residential customers with behind-the-meter batteries were eligible to opt-in. Evoenergy extended the eligibility requirements in 2022/23 to include customers who owned electric vehicles (EVs). This change was made because some EVs have the capability to operate as a battery with two-way flows, and this is likely to become more common in the future. Customers with EVs are also well placed to respond to the various price signals, such as lower network charges during the middle of the day.

4.2. Large-scale battery tariff

During the tariff trial period, Evoenergy has initiated two key changes to the large scale battery tariff trial, both of which were prompted through stakeholder engagement.

Capacity charge

During the first year of the tariff trial (2021/22), some large scale battery operators voiced concern about the price level of the capacity charge.⁷ The battery operators were concerned this charge could generate a significant cost that was difficult to forecast. In response, Evoenergy developed three options to address the concern. These options were internally modelled and analysed. The outcome of this process was a rebalancing of the capacity and peak demand charges. The advantages of this approach were as follows.

- No alteration to tariff structure.
- No discounting the tariff relative to other tariff classes as residuals are still contained in demand charges (no cross subsidisation).
- If a battery behaves in a way which imposes costs, its network bill remains comparable to other HV customers.
- Strong cost reflective price signals maintained.

This approach was applied to the tariff trial for large scale batteries located in primarily residential areas.

Extension of trial to LV connected batteries

The large scale battery tariff trial was initially developed for large scale batteries connected to the high voltage (HV) network. Evoenergy noted the increasing focus on community batteries, many of which

⁷ The capacity charge is based on customers' highest demand recorded over a 30-minute clocked interval during the previous 13 months inclusive of the current billing month.

may be connected to the low voltage (LV) network. Hence, Evoenergy extended the tariff trial to include large scale batteries connected to the LV network in the tariff trial in 2022/23. The same tariff structure is applied to HV and LV connected batteries, however, the price levels differ. This is primarily because LV connected batteries utilise both the HV and LV network, whereas HV connected batteries utilise only the HV network.

5. Alignment to 2019-24 TSS strategy

Evoenergy's 2019-24 TSS continues Evoenergy's strategic goal of transitioning its network tariffs towards greater cost reflectivity over time. This strategy recognises that cost-reflective price signals are critical to improving network utilisation and driving more efficient network augmentation. At the same time, Evoenergy is looking to the future and the emergence of new technologies, such as batteries, that can change the way customers interact with the distribution network. The proposed tariff trials set the path for ensuring Evoenergy can provide its future customers with more choices and pricing structures that reflect customers' changing technological preferences and energy-usage behaviours.

The transition to greater cost reflectivity comes at a time when there is a growing uptake of solar panels, batteries, and other DER in the ACT. This has aligned with the roll-out of smart meters and energy management technologies that have made it easier for customers to engage with their electricity supply, understand their consumption patterns and respond to price signals.

The tariff trials represent a continuation of Evoenergy's 2019-24 TSS strategy by allowing Evoenergy to future-proof its tariff structure, so that it is ready to accommodate a growing number of customers with batteries, EVs and advanced energy technologies.

The tariff trials are also aligned to Evoenergy's TSS through the NER pricing principles which underpin both the TSS, and the design of the trials.