Ref: 20230228JLAP

28 February 2023

Dale Johansen
Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001

Email: [redacted]

Dear Dale,

Intention to introduce additional battery tariff trials for the remainder of the 2019-24 regulatory period and confirmation of the structure for large business customer tariff trials included in last year's notification

This letter outlines Essential Energy's intention to utilise clause 6.18.1C in the National Electricity Rules (NER) in relation to introducing a tariff for both sub-transmission and high-voltage grid connected batteries as part of a trial project for the 2023–24 regulatory year.

It also confirms two trial tariff structures that will be trialled for large, seasonal, peaky load customers that were not yet finalised at the time of our 2022–23 sub-threshold letter.

These are in addition to the existing small customer and low-voltage grid connected battery tariff trials already proposed by Essential Energy in our 2021–22 and 2022–23 sub threshold letters.

Essential Energy will ensure that each tariff trialled does not recover more than one percent of the annual revenue requirement and that, together, all our tariff trials do not recover more than five percent of revenue each year, in accordance with the temporary increase applied to clauses 6.18.1C (a)(1) and 6.18.1C (a)(2), respectively, since 1 August 2021.

Tariff principles

Essential Energy's underlying tariff principles have been developed in conjunction with customers and stakeholders over a number of years. A visual of these tariff principles can be found in Attachment 1, and it is recognised that a balance must be sought between the principles:

- Avoid bill shock
- Easy to understand
- Fair
- Integrate renewables and new technologies
- Effective

Alignment with Tariff Structure Statement (TSS) strategy

The electricity industry is undergoing rapid change driven by changes in the way customers source and use energy, the push to decarbonise energy supply, and the increased decentralisation of the energy supply chain. Tariff trials are essential to Essential Energy successfully designing and testing network charges that recognise the characteristics of both our network and our customers.

Our 2019–24 Tariff Structure Statement indicated that we would be looking to trial tariffs over the 2019–24 period. The trials and associated learnings will form part of our engagement program for our 2024–29 Revised TSS expected to be lodged with the AER later this year.

The remainder of this letter summarises each of these trials with more details contained in the AER's tariff trial notification template which can be found in Attachment 2.

Overview of the grid connected sub-transmission and high-voltage battery tariff project

Since engaging with battery proponents in relation to Essential Energy's low-voltage grid connected battery tariff trial, the business has received a number of requests for an equivalent tariff for both sub-transmission and high-voltage connected batteries. The proposed tariff has similar characteristics to the low-voltage battery tariff and continues Essential Energy's technology neutral approach to cost and benefit attribution, which will:

- incentivise operation of such technologies in a manner that recognises the potential costs and benefits to Essential Energy and its customer base, and
- achieve a fair and efficient level of network cost recovery which recognises how such grid-connected assets will use and benefit from the distribution and transmission systems.

It also aligns with four of our five tariff principles: Easy to understand, Fair, Integrating renewables and Effective.

We believe the proposed tariff reflects the views of the Australian Energy Market Commission (AEMC) in its rule change for integrating storage into the National Electricity Market (NEM) which found that:

- exempting storage from Transmission Use of System (TUoS) and Distribution Use of System (DUoS) charges would not be technology neutral
- charging storage for TUOS and DUOS is consistent with the AEMC's proposed changes to the non-energy cost framework[1] which seeks to allocate costs on a consistent and technology neutral basis to the user of the service.

It is important to note that this trial does not encompass larger storage technologies where, to encourage efficient location decisions, Essential Energy may seek to provide a locational pricing signal on a case-by-case basis, either in the way TUoS charges are recovered or in an individually calculated tariff for DUoS.

The network problems this trial aims to solve

The behavioural incentives intended by the trial tariff will target storage operation that inversely responds to the network cost drivers being imposed by other customers — that is, consuming at times of distribution system daily minimum demand and exporting at times of distribution system daily maximum demand.

More background on Essential Energy's tariff principles and the network problems that tariffs can help solve can be found in our 2022–23 intention to introduce sub-threshold tariffs letter to the AER.

Proposed high-voltage grid connected battery tariff structure

The proposed structure and pricing will combine elements of the existing large customer high voltage demand tariff with Essential Energy's trial Sun Soaker and export charge tariff developed for the small customer tariff trials and the trial low voltage grid-connected battery tariff.

Recognising the high degree of control that bi-directional storage technologies have around the pace at which they consume or export energy, demand-based charging has been applied to both consumption and exports. This will:

- allow the bi-directional storage technology to manage the pace at which it buys and sells energy to minimise network costs (charged in kW for exports and KVA for consumption demand) while still being able to profit from the scale of its energy trading, and
- ensure that if the technology has spikes in its rate of consumption or exports due to its provision of other market services, it will face the network costs of accommodating these spikes.

A basic export level of 1.5kW applies at all times of the day, with charges applied in bands for exports above this level.

The AER's tariff trial notification template for this trial, including an accompanying graphic, can be found in Attachment 2.

[1] These changes amend the framework to recover non-energy costs based on a participant's gross consumed and sent out energy over relevant intervals, irrespective of the participant category in which it is registered. It would not include the energy produced and consumed behind the connection point.

Overview of the large, peaky, seasonal load customer tariff project

Since late 2021 a working group comprising Essential Energy staff, large customers with short or seasonal peaky loads and their industry representatives has met four times. The group specifically considered alternative tariffs that could be applied to such customers and whether there were technologies that could assist customers to better manage their electricity use. The working group comprises Cotton Australia, cotton farmers, cotton ginners, farmers, irrigators, orchard farmers, fruit dehydrators and the Electric Vehicle Council as a representative for electric vehicle fast chargers. Staff from the AER and other relevant observers were also invited to attend.

We outlined our intention to trial a new tariff for these customers in our 2022–23 sub-threshold letter. At the time, the final form of the tariff was not yet confirmed, so our letter flagged a number of potential tariff structures. We have included this previously flagged trial project in this current letter along with two proposed tariff structures that may be trialled once the working group meets in March.

The network problems this trial aims to solve

In the initial workshop Essential Energy shared its network problems and customers then shared their experience working with our network tariffs. Essential Energy had previously identified five network problems that tariffs can assist with – these were outlined in our 2021 intention to introduce sub-threshold tariffs letter to the AER. Of the two tariffs that may be trialled:

- One aims to assist with managing our network challenges by adopting a Sun Soaker consumption window during the day, coupled with an export price.
- The other aims to assist short load or seasonally peaky customers to better manage their bills and business operations.

It remains imperative that the trial tariffs are suitably cost-reflective and do not inadvertently create new network problems.

Proposed tariff structures

Through the workshops, alternative ways for charging large, peaky load customers were raised. The final ideas included in this letter are a Sun Soaker tariff for large customers and a weekly demand charge.

The Sun Soaker tariff will incorporate a Sun Soaker consumption window from 10am to 3pm, consistent with our small customer Sun Soaker trial. It will also include an export price like our small customer trials, though with one main difference – the charge for exports between 10am and 3pm will be on a cents per kilowatt basis, rather than the maximum kilowatt export demand within a half hour in the month.

The weekly demand trial tariff will adopt an identical network access charge and consumption rates as the existing large customer monthly demand tariff, given the residual costs on which these tariff components are based is unchanged. The demand charge, however, which is based on long-run marginal cost and reset each week carries a higher revenue risk for Essential Energy, so it is proportionally higher than the underlying demand charge in the parent tariff.

More details around the trial and the tariff structure can be found in the relevant section of the AER's tariff trial notification template in Attachment 2.

Essential Energy is committed to keeping the AER, retailers and customers informed of the progress of tariff trials and is looking forward to working with the AER on these additional projects. Should you have any questions about the trials or the business' intended application of clause 6.18.1C, then please do not hesitate to contact Natalie Lindsay, Head of Regulatory Affairs on (02) [redacted].

Yours sincerely

[redacted]

Anne Pearson

Chief Corporate Affairs Officer

Attachment 1 – Tariff principles

	Principle	What this means
	**Avoid bill shock**	Tariffs minimise the risk of bill shock for customers (especially vulnerable customers)
	**Easy to understand**	Tariffs are relatively simple to interpret
	**Fair**	Customers pay their fair share of network costs (cost-reflective)
	**Integrate renewables and new technologies**	Tariffs accommodate changing technology, energy flows and greener customer choices
	**Effective**	Tariffs do the job - they solve network issues and don't create new ones

Attachment 2 – AER tariff trial notification template

Distributor	Essential Energy
Total cumulative revenue of all sub-threshold tariffs ($ and % AAR)	We expect to recover $1.053 million, equivalent to 0.1% AAR from all sub-threshold tariffs for the upcoming 2023-24 regulatory year. This includes sub-threshold tariffs which commenced in previous years and are continuing. [Measured against TAR during annual pricing per NER cl. 6.18.1C(a)(2).]
Confirmation for publication	We confirm that this document contains no commercial or private information and we provide permission for the AER to publish this notification on the AER website.

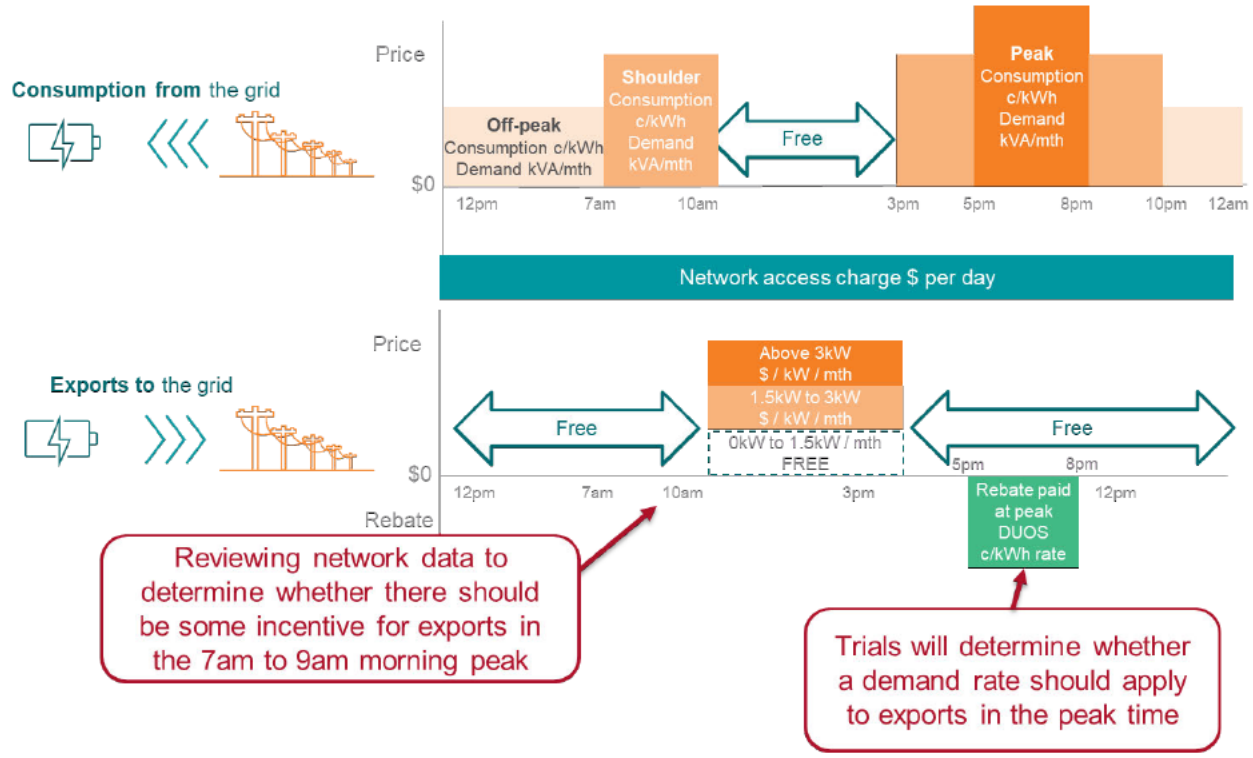
Name of trial	Sub-transmission and high-voltage grid connected battery tariff
Objectives of trial	To test whether the tariff encourages the efficient use of storage technologies on the high-voltage network to assist with managing network issues i.e. storage operation inversely responds to network cost drivers being imposed by other customers — that is, consuming at times of distribution system daily minimum demand and exporting at times of distribution system daily maximum demand and propose any changes to the National Electricity Rules if required.
Retailer engagement	Formal retailer engagement on the proposed tariff is yet to be undertaken. Retailer and aggregator engagement will be undertaken as part of the development of Essential Energy's 2024–29 Revised Tariff Structure Statement (Revised TSS). The Australian Energy Council, who is the peak body and advocacy association on behalf of the retail energy sector is a member of Essential Energy's Stakeholder Collaboration Collective (SCC) – our primary reference group for the 2024-29 Regulatory Proposal. In addition, a dedicated pricing group, the Pricing Collaboration Collective (PCC), was established to guide the development of our TSS, of which retailers are a part. Other PCC participants include consumer advocates, energy user and advisory groups. The tariff was included in our 2024–29 TSS proposal submitted to the AER on 31 January this year. The trial results will inform any tweaks or changes to be made ahead of submitting our Revised TSS.
Consumer engagement	No formal consumer engagement has been undertaken for this tariff yet. As mentioned above, any such engagement will be undertaken as part of the development of the Revised TSS as guided by our SCC and PCC. We expect broad tariff questions will be managed through customer forums and more specific tariff discussions will be undertaken through deep dives with a smaller subset of interested customers.
Expected consumer and/or retailer response	We expect retailers and aggregators will support this tariff given its similarity to the low-voltage battery tariff trial and its overlay with Essential Energy's existing Low Voltage Large Business – ToU three rate monthly demand tariff and the trial export charge tariff for small customers that was developed in conjunction with retailers. We expect customers will support such a tariff as the 2024–29 Regulatory Proposal engagement program has indicated very strong support for accommodating renewables and shifting to a 'greener' energy future.

<table>
<tr><th>Name of trial</th><th colspan="2">High-voltage grid connected battery tariff</th></tr>
<tr><td rowspan="3">Proposed tariff (structure and pricing)</td><td colspan="2">The proposed structure combines Essential Energy's large customer high-voltage monthly demand tariff with aspects of the export charge tariff and Sun Soaker tariff developed as part of the small customer tariff trials.

A graphic of the proposed tariff structure and indicative prices is shown below. For the purposes of this notification these figures are based on the current 2022-23 prices. Essential Energy will inform the AER of the updated 2023-24 prices when they become available (after April 1) and subsequent years.</td></tr>
<tr><td>Energy consumed from the network</td><td>☑ Network access charge
☑ Consumption charge: Cents per kWh rate based on time of day
▪ Peak 5–8pm
▪ Shoulder 7am–10am, 3pm–5pm and 8–10pm
▪ Off peak – 10pm – 7am
▪ Free between 10am and 3pm
☑ Demand charge: Dollars per kVA based on the highest measured half-hour kVA demand registered in each of the peak, shoulder and off-peak periods during the month</td></tr>
<tr><td>Energy exports into the network</td><td>☑ Demand charge (exports): Stepped $/kW capacity payment is based on the relevant band that the highest level of energy exported (kW) into the network between 10am and 3pm in the month falls into
▪ 0–1.5kW free basic export limit
▪ Band 1 rate applies to the next 1.5–3kW exported
▪ Band 2 rate applies to all kW exported above 3kW
☑ Rebate (exports):
▪ c/kWh payment from Essential Energy for exports into the network between 5pm and 8pm
☑ Exports at all other times are free</td></tr>
<tr><td>Links to TSS strategy and export tariff transition strategy (if applicable)</td><td colspan="2">> The learnings from this tariff trial, along with those from the low-voltage grid connected battery trial, will help inform the design of an appropriate tariff for grid-connected batteries. The tariff includes an export charge that is structured similarly to that being trialled for small customers as part of our export tariff transition strategy.
> Batteries are a necessary addition to achieve net zero carbon emissions and an appropriate tariff must incentivise them to operate in a manner that recognises the potential costs and benefits to Essential Energy and its customer base, as well as achieve a fair and efficient level of network cost recovery that recognises how these assets use and benefit from the distribution and transmission systems.
> It is important to note that this trial does not encompass larger storage technologies where, to encourage efficient location decisions, Essential Energy may seek to provide a locational pricing signal on a case-by-case basis, either in the way TUoS charges are recovered or in an individually calculated tariff for DUoS.</td></tr>
</table>

Name of trial	High-voltage grid connected battery tariff
Forecast revenue ($ and % AAR)	$0.165 million and 0.015% of AAR.
Trial start date	Any time from 1 July 2023 – depending on the proponent
Duration of trial	One year
Potential changes and triggers	We will review the tariff and make any tweaks and adjustments in collaboration with proponents and stakeholders ahead of submitting our Revised TSS to the AER later this year.
Notification date	28 February 2023
Optional information	
Forecast volumes	The forecast volumes are expected to be 2.6GWh, but this may differ by the time we lodge our 2023-24 pricing proposal with the AER on 1 April 2023.
Potential additions	None identified
Location of trial	All trials will be within Essential Energy's network footprint. More precise locations will be determined as proponents are engaged.
Other	The trial tariff will be applied to new customers whose sole purpose is to operate a high-voltage grid connected battery with no co-located load behind their meter.

The form of our proposed Sub-transmission and high-voltage battery tariff is shown below.

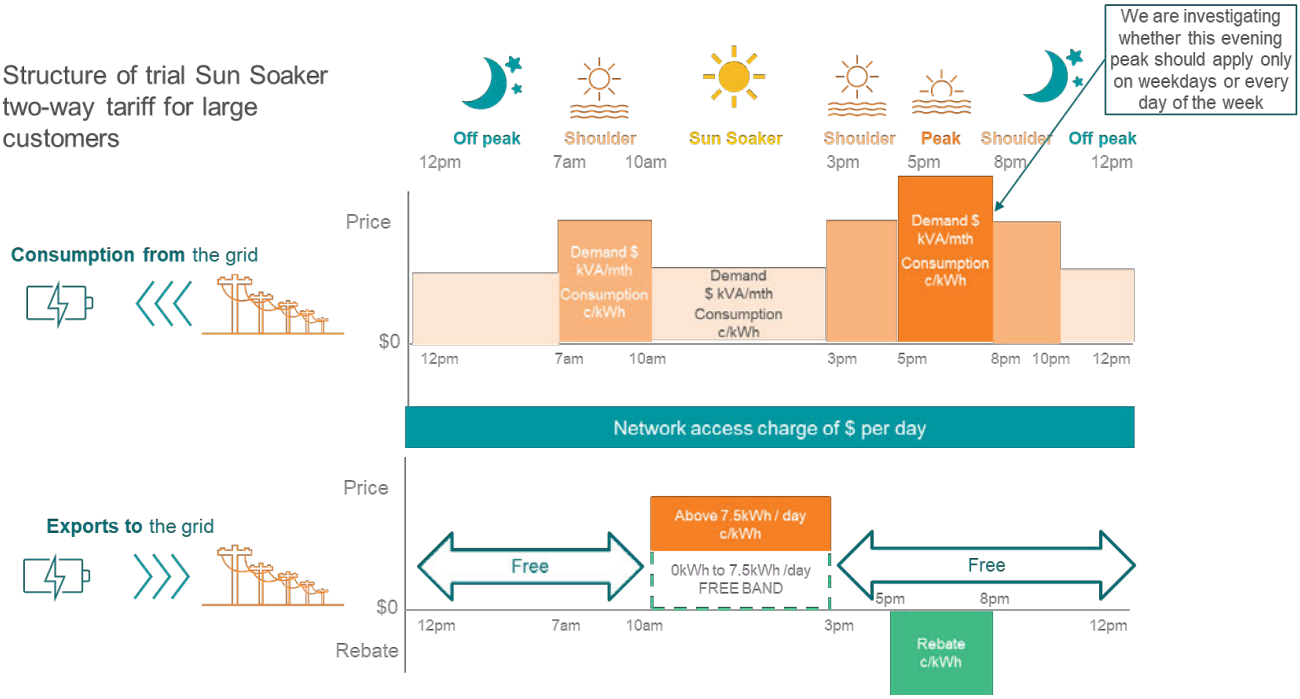


Name of trial	Large, peaky, seasonal load customer tariff project
Objectives of trial	To test an alternative tariff structure for large customers, especially those with seasonal high load operations and those with short but large peaky loads and propose any changes to the National Electricity Rules if required. Our current tariffs for large customers are all based on average monthly demand and this trial will test: > An alternative tariff that contains both a Sun Soaker consumption window and an export price > Whether a more frequent demand window better assists the business operations for these customers.
Retailer engagement	Formal retailer and aggregator engagement on the proposed tariffs is yet to be undertaken and will form part of the engagement programme for Essential Energy's 2024-29 Revised Tariff Structure Statement (TSS). The Australian Energy Council, who is the peak body and advocacy association on behalf of the retail energy sector, is a member of Essential Energy's Stakeholder Collaboration Collective (SCC) – our primary reference group for the 2024-29 Regulatory Proposal. In addition, our dedicated pricing group for the Regulatory Proposal, the Pricing Collaboration Collective (PCC), will guide the development of our Revised TSS, of which retailers are a part. Other participants include consumer advocates, energy user and advisory groups. The trial results will inform whether any tweaks or changes need to be made and whether it should be included as a tariff in our Revised TSS.
Consumer engagement	The tariff has been developed in conjunction with a working group of large customers who have short or seasonal, peaky loads and their industry representatives. The working group includes Cotton Australia, cotton farmers, cotton ginners, farmers, irrigators, orchard farmers, fruit dehydrators and the Electric Vehicle Council as a representative for electric vehicle fast chargers. Essential Energy's PCC will also guide the business in relation to consumer engagement for these trials and potential inclusion in the Revised TSS.
Expected consumer and/or retailer response	Sun Soaker two-way for large business customers > Given strong customer and retailer support for a Sun Soaker tariff for small customers, we expect they will support a similar consumption tariff for large customers. > Unlike our small customer export price, our proposed trial for large customers will test a stepped export charge on a cents per kWh measure, rather than a capacity charge based on the maximum half hourly export in kW in the month. Customers found the kW measure difficult to comprehend and many retailers indicated their systems would not be able to pass through such a charge to customers. We expect this simpler form of export charge to be more readily accepted by retailers and aggregators. Weekly demand tariff for large, peaky, seasonal load customers > We have been unable to secure a retail partner who is willing to accept customer billing data on a weekly basis. As such, we do not expect retailers and aggregators to support this tariff unless the associated network billing data remains part of the monthly billing process. > We do not expect customers to have an issue with this tariff, so long as it can be demonstrated that it is cost-reflective.

<table>
<tr><th>Name of trial</th><th colspan="2">Large, peaky, seasonal load customer tariff project</th></tr>
<tr><td rowspan="2">Proposed tariffs (structure and pricing)</td><td>Sun Soaker two-way tariff for large business</td><td><u>Energy consumption from the network</u>
☑ Network access charge
☑ Consumption charge: Cents per kWh rate based on time of day
▪ Peak: 5 to 8pm*
▪ Shoulder: 7am to 10am, 3pm to 5pm and 8pm to 10pm
▪ Off peak: 10am to 3pm and 10pm to 7am
☑ Demand charge: Dollars per kVA based on the highest measured half-hour kVA demand registered in each of the peak*, shoulder and off-peak periods during the month
* We are still investigating whether an evening peak period should apply to large customers only on weekdays or every day of the week. Once the final tariff is determined the preferred structures and prices will be shared with the AER and other stakeholders.
<u>Energy exports into the network</u>
☑ Export charge based on the total amount of energy exported into the network between 10am and 3pm:
▪ First 7.5 kWh each day is free of charge
▪ Cents per kWh payment above this free threshold
☑ Export rebate in cents per kWh based on the total amount of energy exported into the network between 5pm and 8pm:
☑ Exports at all other times are free
A graphic of the proposed tariff structure is shown below, but the final structure and prices for this tariff are still being established. Essential Energy will inform the AER of the updated 2023-24 prices when they become available (after April 1 2023).</td></tr>
<tr><td>Weekly demand tariff</td><td>☑ Network access charge $ per day
☑ Consumption charge: Cents per kWh rate based on time of day
▪ Peak: 5pm to 8pm
▪ Shoulder: 7am to 5pm and 8pm to10pm
▪ Off peak: all other times
☑ Demand charge: Dollars per kVA based on the highest measured half-hour kVA demand registered in each of the peak, shoulder and off-peak periods during the week
The prices for this tariff are still being established. Essential Energy will inform the AER of the updated 2023-24 prices when they become available (after April 1 2023).</td></tr>
<tr><td>Links to TSS strategy and export tariff transition strategy (if applicable)</td><td colspan="2">The Sun Soaker two-way tariff for large customers does link to our TSS and export tariff transition strategy.
> The addition of a Sun Soaker consumption tariff aligns with our two-pronged approach to managing the challenge of increasing exports into our network. We have based the tariff on our existing large customer demand tariff, but with the addition of a 10am to 3pm off-peak Sun Soaker window as we are offering in our small customer Sun Soaker tariff.
> We have flagged in our 2024–29 Regulatory Proposal the need to add export prices to all our low voltage connected customers. The form of the export price for this tariff largely mirrors what we are trialling for small customers and grid connected batteries, but applies a simpler cents per kWh measure for exports between 10am and 3pm, rather than a stepped capacity tariff.</td></tr>
</table>

Name of trial	Large, peaky, seasonal load customer tariff project
Links to TSS strategy and export tariff transition strategy (if applicable) continued	The weekly demand tariff is not linked to our TSS or export tariff transition strategy as, unlike our other tariff trials which aim to assist with the management of our identified network problems, it aims to offer infrequent short load or seasonally peaky customers with better management of their bills and business operations. Regardless, it remains imperative that the trial tariffs are suitably cost-reflective and do not inadvertently create new network problems.
Forecast revenue ($ and % AAR)	$0.215 million and 0.02% of AAR.
Trial start date	Weekly demand tariff will begin anytime from 1 July 2022 Sun Soaker two-way tariff for large customers will begin from 1 July 2023
Duration of trial	Up to 16 months (ending 30 June 2024), given neither trial is yet operational
Potential changes and triggers	We will review the tariff trial results and consider whether any tweaks and adjustments are required ahead of deciding whether either or both the tariffs should be incorporated into our Revised TSS due to be submitted to the AER later this year.
Notification date	Weekly demand tariff: 28 February 2022 – this tariff was included in our sub-threshold letter lodged last year. Inclusion this year is a courtesy given the final tariff structures were not known at the time of last year's letter. Sun Soaker two-way tariff for large customers: 28 February 2023
Optional information	
Forecast volumes	The forecast volumes are expected to be 2.6GWh, but this may differ by the time we lodge our 2023-24 pricing proposal with the AER on 1 April 2023.
Potential additions	None identified
Location of trial	All trials will be within Essential Energy's network footprint. More precise locations will be determined as customers are identified and retail partners agree to participate.
Other	The trial tariff will be applied to low voltage connections at business premises where consumption exceeds 160MWh a year. Essential Energy is still considering the specific eligibility requirements that may need to apply to these tariffs, especially the weekly demand charge.

The form of our proposed Sun Soaker two-way tariff for large customers tariff is shown on the following page.


Structure of trial Sun Soaker two-way tariff for large customers
We are investigating whether this evening peak should apply only on weekdays or every day of the week
Off peak
Shoulder
Sun Soaker
Shoulder
Peak
Shoulder
Off peak
12pm
7am
10am
3pm
5pm
8pm
12pm
Consumption from the grid
Price
$0
Demand $ kVA/mth
Consumption c/kWh
Demand $ kVA/mth
Consumption c/kWh
Demand $ kVA/mth
Consumption c/kWh
12pm
7am
10am
3pm
5pm
8pm
10pm
12pm
Network access charge of $ per day
Exports to the grid
Price
$0
Rebate
Free
Above 7.5kWh / day c/kWh
0kWh to 7.5kWh /day FREE BAND
Free
5pm
8pm
Rebate c/kWh
12pm
7am
10am
3pm
12pm