

**Ausgrid sub-threshold tariffs 2022-23**  
February 2022

28 February 2022



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Dear Dr Funston,

### **Sub-threshold tariff notification**

We are writing to notify the AER that Ausgrid's 1 July 2022 pricing proposal will include three new sub-threshold tariffs for 2022-23, and each trial tariff will operate for two years. The three sub-threshold tariffs are consistent with the NER requirements, as discussed in the explanatory statement. The three sub-threshold tariffs are:

- Residential two-way tariff (EA959/EA960) – a time of use tariff with export rewards and charges;
- Residential flexible load tariff (EA961) – a fixed charge interruptible supply tariff; and
- Community battery tariff (EA962/EA963) – a critical peak pricing and local use of system tariff.

Ausgrid will notify the AER of any material changes to our trial tariffs and of any new trial tariffs for 2023-24 by the end of February 2023.

The AEMC's decision to remove the prohibition on distributors to charge electricity exports is an important development in the energy transition and has allowed Ausgrid and our peers to explore the merits of charges and rewards for exports. Our trial tariffs will help Ausgrid and the wider industry learn more about customer acceptance and response to these tariffs. We believe this has the potential to lead to a step change in improving network utilisation while minimising long-term network costs for customers.

The tariff trials allow Ausgrid to progress towards our distribution system operator vision by:

- Testing tariffs that respond to dynamic system conditions, helping retailers build 'prices for devices' offers to better pass through the benefits DER customers can drive for our network and the broader energy market;
- Trialling the interruption of supply during network critical peak events to customers that agree to these flexible arrangements in exchange for lower network prices;
- Developing options for supporting community energy schemes through taking into account the depth of network use – further supported by our community battery trial; and
- Learning more about how customers, retailers and aggregators will respond to export charges and rewards to identify how we can promote efficient network utilisation.

Ausgrid is committed to offering our customers cost reflective tariffs that encourage innovation and ultimately lower costs for customers. These sub-threshold tariffs will give us insights into retailer and customer response to new tariff options. We intend to share our findings broadly to support tariff development throughout the NEM.

We appreciate AER staff involvement in our consultation and the feedback we have received to date. While we understand the AER does not need to approve trial tariffs, we would welcome any further feedback you provide. If your team has any questions about our trial tariffs please contact Justin Robinson, Pricing Innovation Manager, on [REDACTED] or [REDACTED].

Regards,

Rob Amphlett Lewis  
Chief Customer Officer

## Sub-threshold tariffs 2022-23

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## Sub-threshold tariff notification

28 February 2022

Distributor	Ausgrid
<b>Required information</b>	
<b>Name of trial</b>	Residential two-way tariff (EA959/EA960)
<b>Objectives of trial</b>	Learn how customers respond to export charges and rewards. Our tariff specifically looks at energy measures of export charges, rewards and basic export levels (in contrast to other NSW DNSPs).
<b>Retailer engagement</b>	We consulted with 11 retailers and will partner with at least 4 retailers for the trial.
<b>Consumer engagement</b>	We have extensively consulted with our pricing working group, and in joint consultations with other NSW DNSPs (and their customer representatives), AER staff and NSW Department of Planning, Industry and Energy.
<b>Proposed tariff (structure and pricing)</b>	Peak import 2pm-8pm every day with peak consumption charge and export reward; Solar soak 10am-2pm every day with off-peak consumption charge and export charge (with 6 kWh basic export level), all other times off-peak consumption charge and free exports.
<b>Forecast revenue (\$ and % AAR)</b>	\$1.9 million, equivalent to 0.1% AAR
<b>Trial start date</b>	1 July 2022
<b>Duration of trial</b>	Two regulatory years: 1 July 2022 to 30 June 2024
<b>Potential changes and triggers</b>	We will monitor uptake, adjusting customer caps every 3-months. We will review the structure and charges in collaboration with affected retailer and our customer representatives before each subsequent year and advise AER of changes agreed.
<b>Notification date</b>	28 February 2022

<b>Distributor</b>	
<b>Ausgrid</b>	
<b>Required information</b>	
<b>Name of trial</b>	Residential flexible load tariff (EA961)
<b>Objectives of trial</b>	Learn whether customers will accept interruptible supply tariffs to manage their costs of high demand appliances (including electric vehicle chargers).
<b>Retailer engagement</b>	We consulted with 11 retailers and will partner with at least 1 retailer for the trial.
<b>Consumer engagement</b>	We have extensively consulted with our pricing working group, and in joint consultations with other NSW DNSPs (and their customer representatives), AER staff and NSW Department of Planning, Industry and Energy.
<b>Proposed tariff (structure and pricing)</b>	For pricing model purposes it is our residential time of use tariff (EA025) with an additional capacity based fixed charge. Retailers will experience a fixed capacity-based charge for the device and no usage charges. We intend to use DMIA to refund usage. Customers will be told not to charge during peak demand events.
<b>Forecast revenue (\$ and % AAR)</b>	\$0.1 million, equivalent to 0.01% AAR
<b>Trial start date</b>	1 July 2022
<b>Duration of trial</b>	Two regulatory years: 1 July 2022 to 30 June 2024
<b>Potential changes and triggers</b>	We will monitor uptake, adjusting customer caps every 3-months. We will review the structure and charges in collaboration with affected retailer and our customer representatives before each subsequent year and advise AER of changes agreed.
<b>Notification date</b>	28 February 2022

<b>Distributor</b>	
<b>Ausgrid</b>	
<b>Required information</b>	
<b>Name of trial</b>	Community battery tariff (EA962/963)
<b>Objectives of trial</b>	To test Ausgrid's capabilities to operate both critical peak pricing events and local use of system pricing, and to explore how well commercially operated batteries can support the network.
<b>Retailer engagement</b>	We consulted with some retailers on this tariff for third party batteries. We have notified the retailer (that is our launch customer) of the tariff structure and principles behind the tariff.
<b>Consumer engagement</b>	This tariff is charged directly to a customer that happens to be a retailer. It is possible other customers will emerge during the trial. For this reason, we consulted with our pricing working group, and in joint consultations with other NSW DNSPs (and their customer representatives), AER staff and NSW Department of Planning, Industry and Energy.
<b>Proposed tariff (structure and pricing)</b>	Critical peak pricing for peak demand and export events, with LRMC based tariffs. Free consumption and export when using the local system (i.e. network downstream of the 415v transformer) and an off-peak charge for consumption at all other times.
<b>Forecast revenue (\$ and % AAR)</b>	\$0.0 million, less than 0.01% AAR
<b>Trial start date</b>	1 July 2022
<b>Duration of trial</b>	Two regulatory years: 1 July 2022 to 30 June 2024
<b>Potential changes and triggers</b>	We will monitor uptake, adjusting customer caps every 3-months. We will review the structure and charges in collaboration with affected retailer and our customer representatives before each subsequent year and advise AER of changes agreed
<b>Notification date</b>	28 February 2022

## Sub-threshold tariff explanatory statement

Ausgrid is submitting this sub-threshold tariff notification to the Australian Energy Regulator (AER) in accordance with the requirements of the National Electricity Rules (NER).<sup>1</sup>

We will trial three tariffs:

- Residential two-way tariff – EA959/EA960
- Residential flexible load tariff – EA961
- Community battery tariff – EA962/EA963

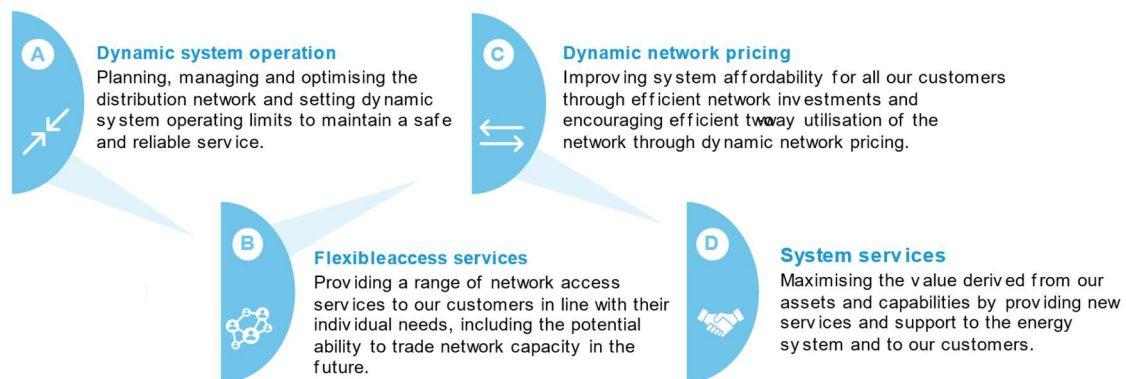
Pricing is critical to sharing value with customers and managing long-term network costs. Ausgrid is committed to investing in tariff development to support retailer innovation and ultimately give customers more choice regarding their energy usage and interaction with the network. The tariff trials contribute to Ausgrid’s strategy through:

- Helping us build the knowledge to accelerate tariff reform;
- Responding to emerging customer needs; and
- Preparing for the transition to a decentralised and low carbon electricity grid.

Our three tariff offerings will each contribute towards the knowledge and capabilities we need as we implement our Distribution System Operator (DSO) vision.

**Figure 1 Our DSO Vision**

**As a DSO we will dynamically manage capacity and operate the network to maintain an efficient, safe and reliable service while optimising value to our customers, the energy system and supporting the renewable energy transition. We will do this by**



**Things that we won't do as a DSO:**

- i** Run energy markets. The focus is instead on supporting DER participation in local and NEM energy markets as they evolve.
- ii** Aggregate and bid customer resources into markets. The focus is instead on supporting traders to do so through a flexible and reliable network service.

<sup>1</sup> NER 6.18.1C



### **Our trial tariffs are responding to emerging customer needs**

To ensure we take a customer centric approach in the development of new tariffs, we have actively engaged with customer representatives on our trial tariffs, including with our Pricing Working Group, as well as with trial partner retailers and solution providers. Additionally, we held joint consultations with Essential Energy and Endeavour Energy involving customer representatives, AER staff and the Department of Planning, Industry and Environment. A key focus has been on maximising what we can learn from trial tariffs across NSW.

#### **The role of efficient tariffs**

There are a range of ways that efficient tariffs help our customers. For example, they:

- Encourage customers to use spare capacity when it does not impose costs on the network, or when it helps avoid future costs;
- Enable customers to decide whether a change in their behaviour or behind the meter investment can meet their needs at a lower cost, in comparison to the network; and
- Signal to Ausgrid where customers value investments in additional network capacity or capability, i.e. where there is no cheaper alternative.

The way customers use our network is changing, driven by rapid changes in the development and uptake of new technologies. In particular, we see increasing customer investment in solar, uptake in electric vehicles and development of distributed energy storage solutions have the potential to significantly change network load profiles.

Our trial tariffs look to test more efficient pricing signals, indicating to customers when their consumption and exports drive costs for Ausgrid as well as sharing value with customers that use the network efficiently. This will help inform our future direction in network tariffs. We expect to learn more about:

- Customer and retailer enthusiasm for different types of cost reflective tariffs;
- Capabilities and information Ausgrid need to operationalise more efficient tariffs;
- The strength of demand response from customers, retailers, aggregators and batteries, to changes in price.

What we learn from our trial tariffs will flow through to our tariff strategy and the role this plays in managing and optimising network assets, helping inform how we face the emerging challenges of the energy transition.

#### **Two trial tariffs will pay customers to support the network**

We are trialing two two-way tariffs, that pay customers for exporting electricity at times when electricity exports can reduce Ausgrid's long-term costs of providing a safe and reliable electricity network for electricity consumers. These tariffs will also charge customers for exporting electricity when that adds to Ausgrid's long-term costs of managing network voltage and export capacity.

We are trialing two forms of two-way tariffs:

- Our residential two-way tariff is a time of use tariff with fixed peak, export soak and off-peak windows for consumption and generation – signaling to customers when their consumption and exports support the network and allowing retailers to develop more sophisticated 'prices for devices' offers; and
- Our business community battery tariff is a critical peak pricing tariff with free LUOS usage to encourage the use of local network assets to reduce strain on substations and the HV network.

### **Two trial tariffs will teach us about targeting critical peaks with tariffs**

We are trialing two tariffs that we have designed to reduce network demand when the network is reaching its capacity. This can reduce the network's long-term costs of providing a safe and reliable network for electricity consumers.

We are trialing two forms of critical peak tariffs:

- Our flexible load tariff is a controlled load tariff that allows unlimited consumption for a fixed fee, with supply interrupted up to 20-times a year during critical peak events; and
- Our community battery tariff is a two-way tariff that rewards batteries (and potentially in future business load customers) for dispatching their load or generation in a way that supports the network during critical peaks (both for demand and hosting capacity).

### **Our trial tariffs will provide valuable insights**

All our tariff trials will teach us important lessons about our customers, both retailers and end-use-customers. Following the AEMC's recent lifting of the ban on export charging, there is very limited real-world evidence of how customers are likely to respond to export charges and rewards. Before we can consider wide-scale implementation of two-way tariffs, we need to better understand how traders (both traditional retailers and emerging virtual power plants) and customers react to export charges and rewards.

Similarly, with growing electrification of the NSW vehicle fleet it is important for Ausgrid to understand what tariffs appeal to electric vehicle owners. With our trial and other tariffs in our TSS residential EV owners will have options to pursue:

- Time of use tariffs;
- Demand tariffs;
- Two-way time of use trial tariffs; or
- A flexible load trial tariff.

Each of these tariffs could help Ausgrid manage the network impacts electric vehicle charging, and it's important that we understand what tariff options appeal to electric vehicle owners and retailers. This will help Ausgrid support the growing electrification of NSW's vehicle fleet while avoiding significant cost increases on our wider customer base.

# 1. Customer and retailer engagement

Ausgrid is committed to working closely with customers and retailers to maximise the insights from these trials and to contribute to broader awareness of the advantages and disadvantages of alternate tariff structure designs.

## 1.1 Extensive customer engagement has informed our tariff design

We have discussed our trial tariffs with key stakeholders through our Pricing Working Group and joint consultation with Endeavour Energy and Essential Energy.

**Table 1 Summary of trial tariff customer engagement**

Meeting	Trial tariff topic	Attendees (in addition to Ausgrid)
<b>Pricing Working Group 22 October 2021</b>	We introduced our early thinking on trial tariffs and help breakout rooms with our pricing working group on the proposed trial tariffs.	Customer representatives (the Ausgrid pricing working group), AER staff & Department of Planning, Industry and Environment.
<b>Pricing Working Group 24 November 2021</b>	Customer representatives provided Ausgrid significant feedback on priorities we should consider. This feedback was instrumental to developing the final design for the three trial tariffs we have proceeded with. For example, this discussion led to our solution to avoid the need to hard-wire to connect to our flexible load tariff.	Customer representatives (the Ausgrid Pricing Working Group), AER staff & Department of Planning, Industry and Environment.
<b>AER meeting 10 December 2021</b>	Ausgrid provided an update on trial tariff development.	AER staff, Endeavour Energy & Essential Energy
<b>Pricing Working Group 17 December 2021</b>	AER hosted a meeting with the NSW DNSPs. We discussed the tariff trials the three NSW DNSPs were exploring, priorities for all four parties and how DNSPs will share what we learn from tariff trials.	Customer representatives (the Ausgrid Pricing Working Group), AER staff, Department of Planning, Industry and Environment & Embedded Network Operators.
<b>Joint consultation 13 January 2022</b>	Ausgrid provided an update on trial tariff development	Customer representatives, Endeavour Energy, Essential Energy, staff & Department of Planning, Industry and Environment.
<b>Joint consultation 31 January 2022</b>	Ausgrid, Endeavour Energy and Essential Energy discussed our two-way tariff trials and sought feedback from attendees.	Customer representatives, Endeavour Energy, Essential Energy, staff & Department of Planning, Industry and Environment.
<b>Pricing Working Group 18 February 2022</b>	We added a basic export level to our two-way tariff trial as a direct result of this consultation.	Customer representatives (the Ausgrid Pricing Working Group), staff & Department of Planning, Industry and Environment.

We are happy to provide any of the consultation material on request.

Ausgrid is currently developing its trial engagement strategy to ensure that there is ongoing engagement throughout the trials. This will be an important measure of success for the trials.

## **2.2 We have discussed our trial tariffs with a wide range of retailers**

We believe we can learn the most about our tariffs by having a broad range of retailers who supply customers with differing levels of engagement and have subsequently engaged with a range of retailers on the three tariff designs. We have confirmed multiple retailer partners for our two-way tariff trial, one retailer for our flexible load tariff and will be trialing the community battery tariff with our community battery trial market partner. We continue to engage with retailers, seeking to recruit more partners.

We have discussed our proposed tariff trials with the following retailers:

- AGL
- Alinta Energy
- Amber Electric
- EnelX
- EnergyAustralia
- Enova
- Nectr
- Origin Energy
- Red Energy
- Simply Energy

We have also met with two major battery suppliers: Sonnen and Tesla.

We have adjusted our tariff offerings as a direct result of retailer feedback. For example, lack of retailer interest in December 2021 and January 2022 led to Ausgrid deciding not to proceed with a business two-way tariff.

We continue to work with retailers for future trial tariff offerings.

## **1.3 We applied a multi-stage design process**

In addition to our consultation with customers and retailers, we went through several steps in developing our trial tariffs:

- A review of emerging consumer and network challenges for which existing tariff structures distort incentives or impede the energy transition;
- Development of a short list of possible tariff trials to address the identified challenges;
- Testing the short list of tariff trials against criteria including appropriateness for addressing the identified challenge, simplicity and practical application, and eligibility and consumer support; and
- Engaging HoustonKemp to conduct an economic assessment and assistance designing tariffs, including export payments.

## 2. Residential two-way tariff

Efficient tariffs signal the costs (and benefits) of using the network. The residential two-way tariff is our first tariff that signals to customers the costs (and benefits) of their exports.

Our two-way trial tariff for residential customers is an extension of our standard time-of-use energy tariff (EA025). We will submit our proposed prices for 2022-23 by the end of March as part of the AER annual pricing process. We show our indicative structure and prices (based on 2021-22 prices) below.

**Table 2 Indicative structure and prices for residential two-way tariff**

	Applicable time	Consumption charge	Export reward / charge
<b>Peak import period</b>	2pm – 8pm everyday	EA025 peak charge <i>25.37 c/kWh (2021-22)</i>	Reward equal to EA025 peak charge <i>-25.37 c/kWh (2021-22)</i>
<b>Solar soak period</b>	10am – 2pm everyday	EA025 off-peak charge <i>3.77 c/kWh (2021-22)</i>	Export LRMC with a 6kWh basic export level <i>1.85 c/kWh</i>
<b>Off-peak</b>	8pm to 10am everyday	EA025 off-peak charge <i>3.77 c/kWh (2021-22)</i>	
<b>Fixed charge</b>		EA025 fixed charge <i>48.72 c/day (2021-22)</i>	

*Note: Italics are current estimates*

We selected a time of use energy tariff as a reference point for this trial because:

- The trial involves a more advanced tariff structure;
- Time of use energy tariffs are generally more readily understood than time of use demand tariffs in our network area; and
- The AER found in 2019 time of use tariffs were highly cost reflective.<sup>2</sup>

We actively consulted on our sub-threshold tariffs with Essential Energy and Endeavour Energy. As we understand it, their two-way tariff trials will test other combinations of time of use and demand charges. A diversity of structures will help all distributors learn more about customer response and acceptance of different two-way tariff structures.

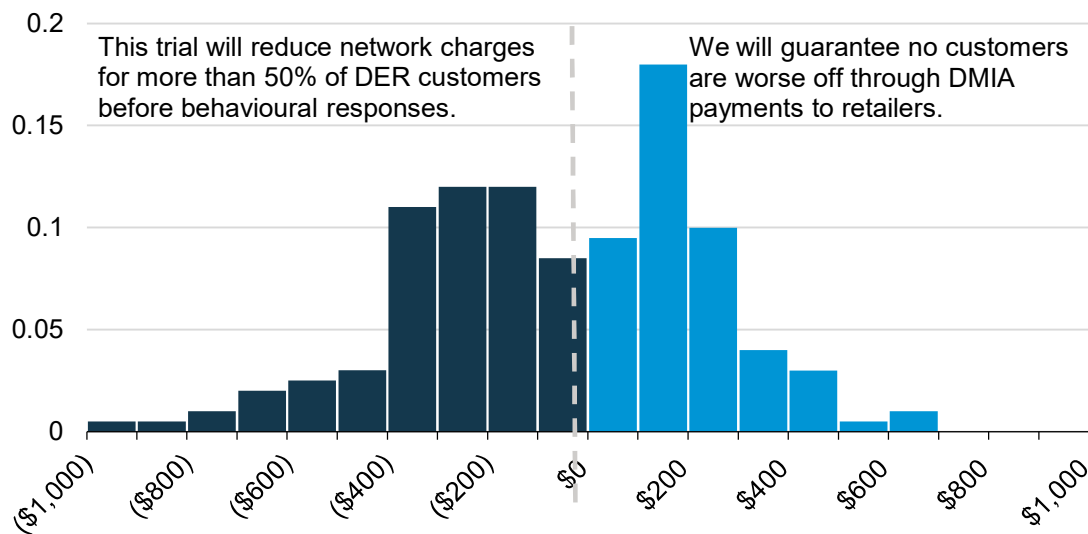
We made a series of design changes to make the time of use tariff structure easier to understand for the trial:

- The charging windows are the same every day; and
- The shoulder period has been removed.

This will make the tariff easier to understand. However, it increases the cost of this tariff to customers with high usage between 2pm and 8pm in April to October. Figure 2 below shows our analysis of 200 existing DER customers.

<sup>2</sup> AER, *Final decisions Ausgrid Distribution Determination 2019 to 2024*, Attachment 18, p 18-12.

**Figure 2 Customer impacts with no behavioural impact without the 'no customer worse off' guarantee<sup>3</sup>**



In this analysis we found:

- The median network charge falls by 10% from \$560 to \$504 (based on current and indicative prices).
- Most customers in our sample (just over 50%) saw network charges decrease before any behavioural response.
- A large minority of customers network charges increase, typically driven by the expanded peak charging windows of the trial tariff.

We have mitigated the risk of customers paying more in the trial tariff in three ways:

1. The tariff is available as “opt-in” meaning customers and retailers should only have an incentive to move to the two-way tariff if it is in their benefit.
2. Customers that join the two-way tariff can mitigate the costs by changing their behaviour.
3. We have offered all partner retailers a “no customer worse off” guarantee. We will pay retailers that agree to this guarantee the difference between charges under the two-way tariff and a customer’s network tariff before the trial (if that customer is worse off). We intend to use our demand management innovation allowance (DMIA) to fund the “no customer worse off” guarantee, as learning more about demand response to export charges and rewards is important to understand our ability to use export charges and rewards for demand management.

We expect that this tariff will appeal to a wide range of customers including:

- Customers with western facing solar panels or batteries because these customers will stand to benefit from the peak import period rewards.
- Customers that want to actively optimise electricity charges and export revenue, including through smart devices.
- Customers with high usage within shoulder charging periods because shoulder periods will be charged as off-peak for this trial tariff.
- Retailers and aggregators offering simple ‘prices for devices’ offers where they manage electricity consumption and export across their customer base to minimise network charges and maximise network rewards.

<sup>3</sup> 1% of customers are omitted from this graph. Their bills increased by over \$1,500. The increases were due to less than 6 kWh/year of exports and over 5 MWh/year of consumption between 2pm and 8pm.

### **2.1 The two-way tariff recovers less than 0.2% of our revenue requirement**

The NER allows Ausgrid to recover up to 1% of its revenue from a trial tariff (and up to 5% of its revenue from all trial tariffs).<sup>4</sup> Our retailer partners have agreed to customer caps for the two-way tariff. This will allow Ausgrid to monitor revenue throughout the 2-years of the trial to ensure we do not recover more than our revenue allowance.

We estimate average DUOS revenue of just under \$470 per customer per year (based on 2021-22 prices). We plan to impose an initial customer cap of 4,000 customers, meaning we expect 2022-23 revenue of up to \$1.9 million, which is around 0.1% of our annual revenue requirement.

If we increase our customer cap, which could occur if customer selection reduces the costs of our “no customer worse off” guarantee, we will ensure it does not approach 1% of our annual revenue requirement.

### **2.2 Efficient network utilisation is part of our demand management strategy**

Ausgrid sees two-way tariffs as an important component of future demand management. The two-way tariff signals to customers the costs of export during periods of high voltage and the benefits of export during periods of high demand. Customers who modify their usage or invest in new DER to take advantage of these price signals will reduce long-term costs to all customers.

In the 2-year trial period, we will support this tariff with our demand management innovation allowance (DMIA). The DMIA will pay for our “no customer worse off” guarantee. We consider that this is a prudent use of DMIA. We expect to learn, and share what we learn, about customer willingness to change their export behaviour. The DMIA allows us to do this without dampening our price signals to customers.

### **2.3 The two-way tariff is cost reflective consistent with our TSS strategy**

Ausgrid is committed to transitioning all our customers to cost reflective tariffs. Ausgrid is the only NSW electricity distributor to move to mandatory cost reflective tariff assignment (with customers having choice of demand, time of use or hybrid demand time of use tariffs).<sup>5</sup> Trialling a two-way cost reflective tariff is a way for Ausgrid to further increase the cost reflectivity of our tariff offerings

In 2018-19, when our TSS was approved when the NER prevented distributors from charging customers for exports. Therefore, we did not consider or propose a two-way tariff.

Sub-threshold tariffs do not need to comply with the pricing principles within the National Electricity Rules. However, in the interests of ensuring our tariffs are efficient, flexible and fair we have tested our trial tariffs against the NER’s pricing principles. This helps us prepare for the possibility of introducing similar or the same structures in the next regulatory period.

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<sup>4</sup> NEW 11.141.8(b)

<sup>5</sup> Since 2019, residential customers assigned to a cost reflective tariff can no longer opt out to an anytime tariff.

**Table 3 Two-way tariff's performance against the NER pricing principles**

NER clause	Principle (summarised)	Ausgrid's assessment
<b>NER 6.18.5(e)</b>	Revenue for tariff classes must be between avoidable cost and standalone cost	The two-way tariff would be part of the low voltage tariff class. The tariff is largely in line with existing residential low voltage tariffs, and we ensure our tariff class revenue is between avoidable and standalone costs each year as required by the NER.
<b>NER 6.18.5(f)</b>	Each tariff must be based on the long run marginal cost of providing the service	Our export charge is based on our current best estimate of the long run marginal cost of exporting during peak export hours.  We have based the consumption charges (and export reward) on our existing residential time of use tariff's (EA025) charges.
<b>NER 6.18.5(g)</b>	The tariff reflects the total efficient costs of serving the retail customers, without distorting efficient pricing signals.	Our export charge, due to the peak period payments, will generate \$190 in credits, on average, to customers with exports (without modelling any behavioural change). This may result in other consumption customers paying export customers to generate. Depending on AER advice, we may need to reduce export payments in a TSS if negative revenue does not meet this principle.  We have based the consumption charges (and export reward) on our existing residential time of use tariff's (EA025) charges.
<b>NER 6.18.5(h)</b>	We must consider the impact on retail customers	This tariff has a wide range of customer impacts, with around 46% customers estimated to be worse off – due to the peak wider consumption window. However, we have offered retailers a 'no worse off' guarantee, where we will pay retailers the difference between charges from the trial tariff and the customers' previous tariff (if the customer is worse off). We expect these payments to be limited given likely behavioural responses and positive selection of customers.  We will carefully consider customer impacts in any TSS proposal.
<b>NER 6.18.5(i)</b>	The tariff must be reasonably capable of being understood by customers or incorporated by retailers.	This tariff applies a simplified time of use structure, to compensate for the added complexity of export rewards and charges. We consider it should be capable of being incorporated by retailers. We will monitor performance of this tariff to confirm our assessment during the trial period.
<b>NER 11.141.12</b>	Export tariffs must have a basic export level	We have included a basic export level between 10am and 2pm, when customers are charged for exports.
<b>NER 11.141.13(b)</b>	Basic export level should be set regarding intrinsic hosting capacity and expected demand for export capacity.	We have calculated a range of potential basic export levels based on NER 11.141.13(b). Our basic export level is within the range we found. We have applied an energy measure (kWh) over a demand measure (kW) as it is consistent with previous tariff structures, and therefore minimises costs to our billing system for a two-year tariff trial.  Our 6 kWh basic export level is equivalent to the maximum output within a 1.5 kW basic export level.



### 3. Residential flexible load tariff

During most times of the day and year, use of our network has relatively little impact on our asset augmentation costs. In 2013 the Productivity Commission estimated that peak demand events occurring for less than 40 hours per year were responsible for 25% of retail electricity bills. Our flexible load tariff seeks to test whether load control is an effective way of managing consumer demand during these peak period events, particularly for new devices, such as EV chargers that could add to coincident peak demand.

The flexible load tariff will allow customers to consume unlimited electricity outside of these peak demand events, in exchange for paying a fixed priced charge. Customers who have 7 kW electric vehicle chargers will be encouraged to participate in the trial. Ausgrid will effectively not charge for the connected device’s consumption but will have the ability to interrupt supply up to 20 times a year between 4pm and 8pm, for up to 2-hours.

We will provide customers with at least 24-hours’ notice before interrupting supply. We are finalising the notification procedure with our participating retailer.

Our flexible load trial tariff for residential customers is based on our time-of-use energy tariff (EA025). We will submit prices for 2022-23 by the end of March as part of the AER annual pricing process. We show our indicative structure and prices (based on 2021-22) below.

**Table 4 Indicative structure and prices for residential flexible load**

	Household consumption	Device consumption
<b>Consumption charges</b>	Equal to EA025	Free
<b>Fixed charge</b>	Equal to EA025	Around 7.5c/kW capacity/day
<b>Operational note:</b>	To avoid rewiring costs for the trial tariff period, we will charge retailers for all consumption based on EA025 plus the additional fixed charge, and refund retailers for the device’s consumption.	

This is a new approach to a controlled load tariff. Controlled load tariffs have historically been, and continue to be, an important demand management tool for Ausgrid and other electricity distributors. Controlled load works well with energy storage devices, like hot water systems, and background tasks, like pool pumps.

Ausgrid has more than 450,000 controlled load customers who mainly use the service for hot water heating. Given these customer numbers decline slightly each year it provides an incentive to explore alternative pricing structures that feature load control. We know that many customers are not actively engaged in managing their electricity consumption and the controlled load “set and forget” proposition may be suitable for new discretionary loads such as electric vehicles.

We have designed our tariff to be 25% lower than the costs of EA025 for a typical residential EV customer that charges their vehicle during peak window around 75% of the time. This tariff enables Ausgrid to simultaneously reduce peak demand and improve the utilisation of excess capacity, without having high prices during peak periods and associated unacceptable customer bill impacts.

Customer representatives have raised concerns that electric vehicle customers may be better off under the two-way tariff or our TSS cost reflective tariffs. We acknowledge that many customers can potentially reduce their electricity costs through smart systems taking advantage of solar generation and off-peak tariffs. We expect that this tariff may appeal to customers:

- that want certainty of the cost of their electric vehicle;
- who consume a large quantity of electricity for their electric vehicle or vehicles; and/or
- that want a simple, “set and forget” solution.

We note that many customers with installed solar generation have remained on controlled load tariffs. This suggests there may be a sizeable market for a flexible load tariff.

### **3.1 The flexible load tariff recovers less than 0.1% of our revenue requirement**

The NER allows Ausgrid to recover up to 1% of its revenue from a trial tariff (and up to 5% of its revenue from all trial tariffs). Our retailer partner has agreed to customer caps for this tariff. This will allow Ausgrid to monitor revenue throughout the 2-years of the trial to ensure we do not recover more than our revenue allowance.

Our flexible load tariff customers will pay around \$580 more than a typical residential customer on EA025 – around \$1,150 based on 2021-22 prices. This is less than we'd expect a customer with an EV to pay on EA025.

We expect an initial customer cap of 100 customers. Total revenue is forecast at around 0.01% of our revenue requirement.

### **3.2 Controlled load is a demand management tool**

Like the two-way tariff we intend to use DMIA funding to assist with our flexible load tariff trial. Typically to install a controlled load device, customers would need to rewire their connections. This is expensive, and a significant impediment to uptake, for a 2-year trial tariff.

We will use DMIA to refund the retailer for the interruptible device's usage. This avoids the need to rewire for controlled load. We have made this decision for three key reasons:

4. We estimate that the costs of refunding usage will be less than the costs of rewiring connections.
5. We would not be funding a permanent improvement to customer premises via DMIA;
6. Customer representatives have expressed concerns that this tariff may not find viable customer base. If insufficient customers are interested in this tariff we may not offer a flexible load tariff in the future.

### **3.2 The flexible load tariff is important to the future direction of our tariffs**

Ausgrid proposed a flexible load tariff as a placeholder tariff as part of our revised pricing proposal in January 2019 for our current tariff structure statement. The AER did not allow this tariff as we were not able to propose a price structure at the time. Our proposed trial flexible load tariff is the result of Ausgrid consulting with our stakeholders and is a key step towards deciding whether to propose a flexible load tariff in the future. Unlike our 2019 placeholder tariff, this tariff does not have an energy charge.

Sub-threshold tariffs do not need to comply with the National Electricity Rules' pricing principles. However, in the interests of ensuring our tariffs are efficient, flexible and fair we have tested our trial tariffs against the NER's pricing principles. It also reflects that we may implement this tariff from 2024, if there is customer demand and it is effective in helping us manage our network demand.

**Table 5 Flexible load tariff's performance against the NER pricing principles<sup>6</sup>**

NER clause	Principle (summarised)	Ausgrid's assessment
<b>NER 6.18.5(e)</b>	Revenue for tariff classes must be between avoidable cost and standalone cost	The flexible load tariff would be part of the low voltage tariff class. The tariff is largely in line with existing residential low voltage tariffs, therefore even without the sub-threshold revenue constraints we consider there is very little risk it would breach this principle.
<b>NER 6.18.5(f)</b>	Each tariff must be based on the long run marginal cost of providing the service	Our flexible load tariff allows Ausgrid to interrupt supply when usage contributes to the need for network augmentation. Therefore, free energy use at other times is largely consistent with other controlled load tariffs that have a low, or zero LRMC.
<b>NER 6.18.5(g)</b>	The tariff reflects the total efficient costs of serving the retail customers, without distorting efficient pricing signals.	The tariff recovers 75% of the revenue of EA025 would recover where a customer consumes 75% of its energy in peak charging windows. We consider that this reflects total efficient costs, using the Productivity Commission's 2013 finding that 25% costs are driven by 40 hours of peak demand events as a guide.
<b>NER 6.18.5(h)</b>	We must consider the impact on retail customers	This tariff will always be opt-in (like controlled load tariffs) and provide network price certainty.
<b>NER 6.18.5(i)</b>	The tariff must be reasonably capable of being understood by customers or incorporated by retailers.	The biggest challenge for this tariff is explaining to customers that their device's electricity supply will be interrupted 20 times a year. We consider that most customers will understand this however there will be a risk long-term that some customers do not see their notification and do not understand why their device is not working. The actual charges are very simple, being a single fixed charge.

<sup>6</sup> Amended from 28 February 2022 submission: Replaced content of table to refer to the flexible load tariff. The content is identical to the draft notification provided to the AER on 21 February 2022.

## 4. Community battery tariff

Local dispatchable demand and supply can support Ausgrid’s distribution network. Dispatchable demand and supply can help us supply hosting capacity to local exporters and reduce strain on network assets during peak demand.

Ausgrid is trialing community batteries to explore how well batteries can support the network and whether alternative network price structures can help support their operating model and improve overall commercial viability.

Our community battery tariff is a critical peak pricing tariff. It is:

- **dynamic** – it signals marginal cost only at the specific (not predetermined) times when there are network costs or benefits at hand;
- **two-way** – it provides rewards and charges for both battery charging and discharging decisions that have an effect on our network costs;
- **local use of system** – it contains price signals that reflect when the battery is using only the local system, i.e. the battery can charge for free when it drives no additional load on the 415-volt transformer, that is it is absorbing local generation; and
- **least distortionary** – it recovers residual costs to minimise distortions to the highly efficient price signals.

**Table 6 Indicative structure and prices for residential two-way tariff**

	Applicable time	Consumption charge	Export reward / charge
<b>Peak demand</b>	Up to 10 4-hour events per year	Demand LRMC estimate 141 c/kWh	Demand LRMC estimate -141 c/kWh
<b>Peak export</b>	Up to 10 4-hour events per year	Export LRMC estimate -75 c/kWh	Export LRMC estimate 75 c/kWh
<b>Anytime</b>	When adding load to LV transformer	<i>Off peak charge</i> 1.6 c/kWh (2021-22)	0 c/kWh
<b>LUOS</b>	All other times	0 c/kWh	0 c/kWh
<b>Fixed charge</b>	Balancing charge to make battery revenue neutral if supporting network \$1.72/kW/month (approx)		

*Note: Italics are current estimates and negative charges reflect payments from Ausgrid to the community battery.*

We have designed the fix charge to equal the expected revenue from a typical battery:

- charging during all peak export events
- discharging during peak demand events, and
- charging during LUOS events.

A battery that operates this way supports our network, reducing costs to load and export customers over the long run. We therefore consider it is appropriate that a battery operating to support the network would receive the same amount in rewards as its annual fixed charge.

### 4.1 The community battery tariff will recover very little revenue

The NER allows Ausgrid to recover up to 1% of its revenue from a trial tariff (and up to 5% of its revenue from all trial tariffs). We are in the process of installing 3 community batteries. We will also make the tariff available to other community battery proponents over this period. However, given the commissioning time, we consider it is unlikely additional customers will emerge over the 2022-23 or 2023-24 period.

Our tariff is designed to strongly incentivise the battery operator to maximise network support. Therefore, it should raise little to no revenue – reflecting that we have historically paid third parties to provide network support. Therefore, this tariff will not approach the 1% revenue threshold.

#### **4.2 This tariff is consistent with the NER's TSS tariff requirements**

In its TSS decision, the AER noted that critical peak pricing is a very efficient tariff structure. Additionally, with the increased two-way flows there is a growing opportunity for local electricity trading. This tariff tests two concepts that have technical challenges. Ausgrid needs to address these before we can make either concept available to a broader customer base:

- Peak events – we need to know how confidently we can predict these events and how much notice we can give.
- Local use of system – we need to address the challenges of metering and billing for local use of system.

These concepts were not part of our 2019-24 TSS, but successful trials may drive future tariff offers for a broad business and residential customer base.

Sub-threshold tariffs do not need to comply with the National Electricity Rules' pricing principles. However, in the interests of ensuring our tariffs are efficient, flexible and fair we have tested our trial tariffs against the NER's pricing principles.

**Table 7 Community battery tariff's performance against the NER pricing principles<sup>7</sup>**

NER clause	Principle (summarised)	Ausgrid's assessment
<b>NER 6.18.5(e)</b>	Revenue for tariff classes must be between avoidable cost and standalone cost	The community battery tariff would be part of the low voltage tariff class. We forecast raising a small amount of revenue from this tariff, based on when the customer imposes costs, rather than avoids costs to our system, it therefore has an insignificant impact on tariff class revenue. We consider there is very little risk it would breach this principle.
<b>NER 6.18.5(f)</b>	Each tariff must be based on the long run marginal cost of providing the service	Our peak demand and peak export tariffs are based on our estimates of LRMC for demand and export over a 40-hour charging window.
<b>NER 6.18.5(g)</b>	The tariff reflects the total efficient costs of serving the retail customers, without distorting efficient pricing signals.	The community battery tariff sends very strong incentives for batteries to provide network support. Historically we have paid service providers to provide this level of network support. Therefore, we consider designing tariffs that have no net charge for operating in a way to provides maximum network support reflects efficient costs. We have preserved the LRMC pricing signals.
<b>NER 6.18.5(h)</b>	We must consider the impact on retail customers	This tariff is designed for sophisticated customers that can support the network alongside any other revenue generating opportunities. A responsive customer will attract no net charge for its network support.
<b>NER 6.18.5(i)</b>	The tariff must be reasonably capable of being understood by customers or incorporated by retailers.	This tariff will only apply to very sophisticated customers who can understand this tariff.
<b>NER 11.141.12</b>	Export tariffs must have a basic export level	We have not included a basic export tariff for our trial community battery tariff during the peak export events. We consider it creates an unnecessary distortion during that time. In addition the battery receives unlimited free exports 99.5% of the year, could satisfy a broader interpretation of the free allowance.  We seek feedback from the AER if this would be acceptable in the next TSS.
<b>NER 11.141.13(b)</b>	Basic export level should be set regarding intrinsic hosting capacity and expected demand for export capacity.	We will call peak export events when we are at or very near peak export capacity. Peak export events will typically occur when expected demand for export services in the distribution network exceeds the network's intrinsic hosting capacity. This is the rationale for paying the battery to charge. Therefore, we see no justification for a non-zero basic export level according to the NER. <sup>8</sup>

<sup>7</sup> Amended from 28 February 2022: Updated table caption to refer to community battery tariff.

<sup>8</sup> NER, cl. 11.141.13 (b)(1)