

Draft Decision

Endeavour Energy

Electricity Distribution

Determination 2024 to 2029

(1 July 2024 to 30 June 2029)

Attachment 19

Tariff structure statement

September 2023

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19 Tariff structure statement

This attachment sets out our draft decision on Endeavour Energy’s tariff structure statement to apply for the 2024–29 regulatory control period.

A tariff structure statement applies to a distributor's tariffs for the duration of the 2024–29 period providing consumers and retailers with certainty and transparency in relation to their distribution charges. This allows consumers to make more informed decisions about their energy use. A tariff structure statement informs customer choices by:

- providing better price signals— network tariffs which reflect what it costs to use electricity at different times can allow customers to make informed decisions to better manage their bills
- transitioning tariffs to greater cost reflectivity—with the requirement that distributors explicitly consider the impacts of network tariff changes on retail customers, by engaging with customers, customer representatives and retailers in developing network tariff proposals
- managing future expectations—providing guidance for retailers, customers and suppliers of services such as local generation, batteries and demand management by setting out the distributor's tariff approaches for a set period of time.

In this round of tariff structure statements, all 6 participating distributors have continued to move towards more cost reflective tariff structures.¹ In particular, the tariff structure statements respond to the trend of increased consumer energy resources (CER) and the role network tariffs can play in assisting their integration into the grid by signalling how and when the use of those resources drives costs and benefits to the network. For example:

- the number of solar photo voltaic (PV) installations continues to increase, requiring distributors to manage minimum demand on their networks when solar generation is at its highest
- the uptake of electric vehicles (EV)s is ramping up in all jurisdictions, requiring distributors to consider how to encourage charging of electric vehicles in ways that minimise their contribution to existing demand peaks, avoid the creation of new peaks, and maximise their contribution to efficient use of the network
- there is increasing interest in residential, community and grid-scale batteries and several national and state level government programs encouraging their uptake.

Further supporting their path towards more cost reflective tariffs, distributors have been able to propose export reward tariffs for the first time in this round of tariff structure statements. It follows the Australian Energy Market Commission (AEMC) 2021 rule change, *Final determination - Access, pricing and incentive arrangements for distributed energy resources* to allow the introduction of two-way pricing (i.e. rewards and charges for exporting energy as well as consuming energy).

¹ Ausgrid, Endeavour Energy, Essential Energy (NSW), Evoenergy (ACT), TasNetworks (Tasmania) and Power and Water Corporation (NT).

In addition to proposed tariff changes, some distributors proposed 'contingent tariff adjustments' for the first time. These make specific changes to a tariff parameter in the event of an identified trigger event. They are a response to uncertainty over aggregate load curves in the 2024–29 period caused by the rapid pace of change in the energy sector, particularly from uncertain demand from electric vehicle charging.

Smart meters are essential for the application of most cost-reflective network tariffs. The percentage of residential customers with smart meters on Endeavour Energy's network has increased from 8.4% in 2018 to 30.9% in its latest reported data for 2022. It will accelerate further over the regulatory period given AEMC's report for its *Review of the regulatory framework for metering services* which recommends a target of 100% smart meter roll out by 2030. This level of smart meter penetration will see increased numbers of customers whose retailer is facing a cost reflective network tariff. We anticipate this will encourage retail competition and innovation in retail tariffs and service products for consumers.

In its report, the AEMC observed that the sooner smart meters are installed across the NEM the greater the benefits to consumers. The AEMC recommended safeguards to support customers through the transition to an energy system that features smart meters. These are focussed on retailer decisions, including a decision around providing sufficient notification and information of changes to a customer's retail pricing structure. While the recommended safeguards focused on managing customer risks associated with retailer decisions, we also considered the distributor's arrangements for transitioning retailers to cost reflective network tariffs on customer receipt of a smart meter.

Retail pricing interactions with network tariffs

The network tariff price signals we approve may not be directly passed on to end-use customers (i.e. the retail customer). This is because distributors charge the relevant retailers for the transport of electricity to serve end-use customers connected to their networks. Network costs and price signals are charged directly to retailers who then pass these costs on to end-use customers in their retail offers. A retailer may choose to pass on the network price signals exactly or repackage them into their retail offers (including in insurance style flat rate retail offers).

Cost reflective network tariffs provide signals to retailers of the costs of using the network at different times and encourage retailers to design retail tariff offers that reflect network costs and signal to end-use customers when it is more or less costly to use the network. Ultimately cost reflective network tariffs encourage retailer competition and innovation in how they reflect these network costs in diverse retail offers. Importantly, customers can then choose the retail tariff structure that best suits their needs and preferences.

Our discussion in this report may talk about (retail) customers being assigned to a network tariff and these customers having choice in tariffs or the ability (or inability) to opt in to or out of particularly tariffs. We also talk about customer impacts under the distributor's assignment policies. These customer impacts assume the network price signals are directly passed on to the end-use customer by the retailer. We acknowledge that it is the retailer who may seek reassignment where choice is provided through network tariff opt-in or opt-out provisions, rather than the customer. Actual customer outcomes as a result of our approval of the proposed tariff structure statements, and the incentive for any customer behavioural change associated with our approval of these tariffs, will also depend on the retailer, the retail tariff

the customer chooses, and how the retailer chose to package or pass on the network tariff costs.

For ease of communicating particular issues, our language may not always accurately reflect the indirectness of the relationship between a customer and their network tariff. We occasionally refer explicitly to retail tariffs but any reference to tariffs generally refers to network tariffs.

The distributors' customer consultation processes have improved over successive resets and the AER's Better Resets Handbook (Handbook) published in 2021 supports this improvement. The Handbook encourages network businesses to better engage with stakeholders and to have customer preferences drive the development of their regulatory proposals.

The distributors have generally engaged well with stakeholders in developing their 2024–29 tariff structure statements. Customer input is important in developing tariffs since their ultimate objective is to influence consumer behaviour. We acknowledge it is challenging for distributors to engage consumers on network tariffs they will not see directly and that may be complex and not structured for consumer understanding.² When it comes to customers' real experience, it is the retailer's role to develop and communicate retail tariffs that are appealing and understandable, appropriate to their customers' circumstances and incentivise customer behaviour to support efficient use of the network (i.e. to reduce the network bill that the retailer is charged for their customers' use of the network).

There is no State-wide pricing order or legislation in NSW that influences how retailers can set prices. As such, retailers in NSW set their own retail prices. These cover the network costs of transporting electricity through the networks, as discussed above, as well as wholesale costs of electricity, their own retail costs and margin, and any environmental costs. The network component of a customer's retail bill makes up approximately 45% of the final bill.

Because there is no other retail price regulation, retailers' default standing offer contracts must adhere to the default market offer. This is the maximum price a retailer can charge for its standing offer contracts and is determined by the AER each year. The DMO price for each area also acts as a 'reference price' for residential and small business offers in that area. When advertising or promoting offer pricing, retailers must show the price of their offer in comparison to the DMO/reference price. This helps customers more simply compare the price of different offers.

NSW's Independent Pricing and Regulatory Tribunal (IPART) monitors the prices and competition in the electricity and gas markets but does not set them.

19.1 Draft decision

Our draft decision is to not approve Endeavour Energy's proposed 2024–29 tariff structure statement, as we are not satisfied that all elements comply with or contribute to the pricing

² The NER allows for tariffs that may not be understood by retail customers, if the tariffs instead are capable of being understood and incorporated by retailers in retail tariffs, NER, cl. 6.18.5(i).

principles for direct control services in the National Electricity Rules (NER) and other applicable requirements of the NER.

We are satisfied that most elements of the proposed tariff structure statement comply with the pricing principles and contribute to the achievement of the network pricing objective. We consider the tariff structure statement that Endeavour Energy proposed is among the best that we have seen. It provides for a transition to tariffs that support efficient use of its network while including appropriate measures to manage adverse impacts to its customers.

Our draft decision is to approve the following elements of Endeavour Energy's proposed 2024–29 tariff structure statement:

- tariff assignment and tariff structures for residential and small business customers, including the proposed export reward tariff (two-way prices) for residential and small business customers (noting further changes Endeavour Energy has informed AER staff it will include in its revised tariff structure statement, detailed below)
- tariff assignment and tariff structures for low voltage (LV) and high voltage (HV) commercial customers, except for the proposed new embedded network tariffs (also referred to below)
- network tariffs for utility scale storage (grid-scale batteries) connected at the LV and HV distribution network
- tariff assignment and tariff structures for commercial customers on site-specific (individually calculated) tariffs
- the policies and procedures for assigning retail customers to tariff classes, or reassigning retail customers from one tariff class to another
- the contingent tariff adjustment to extend the peak charging window.

We are not approving the following element of Endeavour Energy's tariff structure statement, as we are not satisfied that it complies with and contributes to the pricing principles and other applicable requirements of the NER, based on the information available:

- the proposed network tariff for new and existing low voltage embedded networks (embedded network tariff).

We also encourage Endeavour Energy to consider including the following in its revised proposal to make further improvements to its tariff structure statement:

- fact sheets and worked examples of how the proposed export rewards and charges will apply in practice, including analysis of how customers with different sized solar PV systems could be impacted by two-way pricing
- in recognition of the potential rapid uptake in EV load we encourage Endeavour Energy to consider tariffs for flexible loads with more targeted windows and sharper price signals. Including through its controlled load tariffs (or a new opt-in controlled load tariff)
- add contingent trigger information in its revised tariff structure statement, as it is currently in the accompanying explanatory statement only

- supporting information on a further change to its assignment policy that it communicated to AER staff after submission of the proposed tariff structure statement (to shorten the transition period from 24 months to 12 months)
- how Endeavour Energy will give effect to the *Electricity Supply (General) Amendment (Green Hydrogen Limitation) Regulation* (network tariff exemptions for approved green hydrogen producers) through individually calculated tariffs (it has been described to AER staff in response to an information request but needs to be included in the revised tariff structure statement).³

We note that the New South Wales Government has supported a recommendation in the *NSW Electricity Supply and Reliability Check Up* that it work together with NSW distributors and the AER on a common methodology to recover New South Wales Electricity Roadmap costs.⁴ We will work with Endeavour Energy to include this common methodology in its revised tariff structure statement.

19.2 Endeavour Energy's proposal

Endeavour Energy's 2024–29 tariff structure statement seeks to continue the pricing reform it commenced in 2017 by:

- introducing opt-in two-way pricing (export rewards and charges) for residential and small business customers in July 2024 which:
 - has low export charges between 10am – 2pm and export rewards between 4pm – 8pm to encourage export during the evening peak
 - will be opt-in for existing customers and opt-out for new and upgrading customers from 1 July 2025
- accelerating its assignment policies for residential and small business customers by:
 - continuing to provide two primary cost reflective tariff options for these customers (time-of-use and demand tariffs) but making its time-of-use tariff its default tariff
 - removing the opt-out clause that allowed retailers to move customers from a cost reflective network tariff, back to a flat tariff
 - introducing a 2-year transition for customers that currently have smart meters or acquire smart meters, but considering shortening it further to 12 months in consideration of further stakeholder consultation
- improving the cost reflectivity of price signals in residential and small business tariffs by:
 - restructuring residential and small business time-of-use and demand tariffs by introducing a lower charge solar soak component between 10am – 2pm each day
 - including a contingent tariff adjustment to its residential and small business tariffs to extend the peak charging window to 4pm – 9pm (from 4pm – 8pm) if there is evidence that additional peak events occur during the 2024–29 period

³ Endeavour Energy - IR019 - *Green Hydrogen Concessions* - PUBLIC – 20230511.

⁴ NSW Government Response – *Electricity Supply and Reliability Check Up* – September 2023, available here: https://www.energy.nsw.gov.au/sites/default/files/2023-09/Electricity_Supply_and_Reliability_CheckUp_NSW_Government_Response_September_2023.pdf.

- maintaining its current time-of-use demand tariff and assignment policies for LV, HV and sub-transmission commercial customers
- introducing an embedded network tariff with the same structure as the time-of-use demand commercial tariff but with 9.5 c per kW⁵ per day (c/kW/day) additional demand charge
- introducing 3 tariffs for utility scale storage facilities connected at the LV, HV sub-transmission networks
 - for the LV tariff, export rewards vary depending on the time of day and season except between 10am – 2pm (the solar soak period where imports are free)
 - there is no solar soak period for the HV and sub-transmission battery tariffs.

19.3 Assessment approach

This section outlines our approach to assessing tariff structure statements.

The NER set out elements that an approved tariff structure statement must contain.⁶ A tariff structure statement must also comply with the distribution pricing principles.⁷

19.3.1 What must a tariff structure statement contain?

The NER requires a tariff structure statement to include:

- the tariff classes into which retail customers for direct control services will be divided
- the policies and procedures the distributor will apply for assigning retail customers to tariffs or reassigning retail customers from one tariff to another
- a description of the strategy or strategies the distributor has adopted, taking into account the pricing principle in clause 6.18.5(h), for the introduction of export tariffs including where relevant the period of transition (export tariff transition strategy)
- structures for each proposed tariff
- charging parameters for each proposed tariff
- a description of the approach that the distributor will take in setting each tariff in each pricing proposal.⁸

A distributor's tariff structure statement must be accompanied by an indicative pricing schedule.⁹

⁵ kW = kilowatt.

⁶ NER, cl. 6.18.1A(a).

⁷ NER, cl. 6.8.2 (d2) and cl. 6.18.1A(b).

⁸ NER, cl. 6.18.1A(a).

⁹ NER, cl. 6.8.2(d1) and cl. 6.18.1A(e).

19.3.2 What must a tariff structure statement comply with?

The NER require distributors to demonstrate how their proposed tariff structure statement to comply with the distribution pricing principles.¹⁰

Broadly the pricing principles require:

- for each tariff class, the revenue expected to be recovered must lie between the avoidable cost of not serving those customers and the standalone cost of serving those customers
- tariffs to be based on the long-run marginal cost (LRMC) of providing the service
- revenue collected from each tariff to reflect the total efficient costs of customers assigned to the tariff
- distortions to price signals to be minimised
- consideration of the impact of proposed changes to tariffs on customers
- each tariff to be reasonably capable of being understood by retail customers or incorporated into retail tariffs.

19.3.3 How we will assess tariff structure statement proposals

Endeavour Energy participated in the voluntary Early Signal Pathway provided for in the Handbook. This pathway can create a more efficient regulatory process for all stakeholders by increasing the likelihood of a tariff structure statement being approved earlier in the assessment process. Under this pathway, we have already provided Endeavour Energy with significant feedback on the direction of its tariff structure statement while it was in development.

Our review of tariff structure statements of distributors on the early signal pathway is targeted at issues we consider need further examination. Our assessment considers compliance with the distribution pricing principles and other applicable requirements of the NER.

In line with our Handbook, our expectation is that the following elements have been addressed in the proposed tariff structure statement:

- progression of tariff reform
- incorporation of their tariff strategy in their overall business plans
- significant stakeholder engagement and broad stakeholder support for their proposed tariff structures
- insight into and management of any adverse customer impacts.

The AEMC's *Access, pricing and incentive arrangements for distributed energy resources rule change* was finalised in August 2021, allowing the introduction of two-way pricing for the

¹⁰ NER, cl. 6.18.5 and cl. 6.8.2(c)(7).

first time.^{11,12} We will assess any two-way pricing proposals with regard to the guidance we provided in our *Export Tariff Guidelines*.¹³

19.3.4 How tariff structure statements relate to broader pricing process

The tariff structure statement is the first stage of a two-stage network pricing process. The second stage is for distributors to develop and submit an annual pricing proposal to the AER. The annual pricing proposals apply pricing levels to each of the tariff structures outlined in the approved tariff structure statement. Distributor's proposed pricing levels must be consistent with the corresponding indicative pricing levels for the relevant regulatory year as set out in the relevant indicative pricing schedule, or the distributor must explain any material differences between them.¹⁴

19.4 Reasons for draft decision

Our draft decision is to not approve Endeavour Energy's proposed tariff structure statement. However, we accept most elements of Endeavour Energy's proposed tariff structure statement.

In line with our Handbook, we consider Endeavour Energy demonstrated:

- progress on tariff reform consistent with the network pricing objective and pricing principles through assignment policies that substantially increase assignment to cost reflective tariffs over the regulatory period and proposed new cost reflective tariffs to address emerging demands on its network
- incorporation of its tariff strategy in its overall business plan by including a section in its tariff structure explanatory statement that explains its tariff strategy against its network planning
- significant stakeholder engagement and broad stakeholder support and responding to customer feedback in developing its proposed tariff structure statement
- insight into and management of any adverse customer impacts.

We consider the following element needs further analysis and consultation before we can be satisfied it complies with the distribution pricing principles of the NER:

- the proposed embedded network tariff for new and existing LV embedded networks.

¹¹ Distributed energy resources (DER) / consumer energy resources (CER) are renewable energy units or systems that are commonly located at houses or businesses to provide them with power. This also includes energy storage and energy management assets. This can also be referred to as 'behind the meter' because the electricity is generated or managed 'behind' the electricity meter in the home or business. Common examples include rooftop solar units, battery storage, thermal energy storage, electric vehicles and chargers, smart meters and home energy management technologies.

¹² Previously under the NER, distribution services involved one-way flows of electricity imported from the grid for consumption. The AEMC's rule change updated the rules to clarify that distribution services can be two-way. That is, they include both the 'import' of energy from the grid for consumption and 'export' of energy, such as rooftop solar, to the grid.

¹³ AER, *Export Tariff Guidelines*, May 2022.

¹⁴ NER, cl. 6.18.2(b)(7A).

Below we outline the reasoning for our decision for each customer group as well as discussing our assessment of some specific tariff issues. It is structured as follows:

- Residential and small business
- Medium and large business
- Grid-scale battery tariffs
- LRMC methodologies

Assignment to tariff class and statement structure and completeness are discussed separately in sections 19.5 and 19.6 respectively.

19.4.1 Residential and small business tariffs

We are satisfied with Endeavour Energy’s proposal for residential and small business customers because:

- the tariffs have been structured to reflect the efficient costs of providing services and include alignment of charges to network demand peaks and minimum demand periods
- the tariff structures are reasonably capable of being directly or indirectly incorporated by retailers or aggregators into retail offers
- the tariffs signal to retailers the network benefits of customers using excess solar generation
- the tariffs send price signals to retailers to discourage the development of new demand peaks from EV charging.

19.4.1.1 Endeavour Energy’s engagement with stakeholders to develop its tariff strategy

We consider that Endeavour Energy engaged well on small customer tariff plans. Its plans reflect stakeholder input and have broad stakeholder support.

Over the past two years we have observed much of Endeavour Energy’s tariff related engagement with its customers and other stakeholders, including through its pricing working group and other forums. This has given us a deeper insight into how Endeavour Energy engages with its stakeholders, how it considered and responded to feedback and how it built stakeholder understanding and acceptance.

Customer engagement in tariff structure development is an important consideration for our assessment. More customers will face cost-reflective tariffs and utilise technology such as solar panels and batteries, which can shift the way customers use, store and understand their energy. Engagement is key to providing social license for tariff reforms. We take customer and other stakeholder views into account when assessing whether each proposed tariff is reasonably capable of being understood by customers or incorporated into retail offerings.¹⁵ We expect that distributors should demonstrate significant customer engagement, clear links between customer feedback and the tariff structure statement proposal and, where possible, broad stakeholder support for their tariff plans.

¹⁵ NER cl 6.18.5(i).

The Public Interest Advocacy Centre (PIAC) submission raised the broader question as to whether networks should be engaging with stakeholders on network tariffs at all.¹⁶ It observed that, even with the best intent to engage in good faith shown by distributors, consultation on network tariffs can be complicated. An example PIAC used is contradictory views from customers on whether they support a faster transition to cost reflective tariffs.¹⁷

PIAC noted that all networks engaged in good faith on their tariff proposals and made meaningful efforts to navigate the complexities we have outlined. That is, issues with engagement on tariffs do not reflect insufficient or poor-quality engagement by the distributors, but rather the challenges of engaging stakeholders on complex regulatory issues.

While we recognise the difficulties PIAC raises we consider customer engagement and input critical to progressing tariff reform. Through engagement distributors can learn more about customer preferences and their likely response to price signals, influencing tariff design and transition policies. As such, we strongly encourage distributors to undertake continued engagement to build stakeholder knowledge and improve their capacity to meaningfully contribute.

An example of how to build stakeholder capacity is the series of tariff reform training sessions we held for a range of stakeholder groups during the 2022 year. For stakeholders reading this paper, presentations used in those training sessions, along with other tariff reform explanatory materials, are available at:

<https://www.aer.gov.au/networks-pipelines/network-tariff-reform/implementing-tariff-reform>

In particular, Endeavour Energy reflected on and balanced a range of customer views in its tariff structure statement, including by:

- incorporating AER staff feedback to accelerate its residential and small business assignment policy, with strong support from consumer advocates (71%) and modest support from its Customer Panel (55% in original engagement, 46% in subsequent engagement)¹⁸
- modelling solar soak windows on the residential solar soak tariff trial it ran in 2023
- making its time-of-use tariff the default residential and small business tariffs, in response to customer and retailer views that time-of-use signals are more appropriate and easier to understand for residential customers than demand signals.

¹⁶ Public Interest Advocacy Centre, *Issues Paper 2024–29 Revenue Determinations: Ausgrid, Endeavour, and Essential Energy*, 1 June 2023, p 18.

¹⁷ Public Interest Advocacy Centre, *Issues Paper 2024–29 Revenue Determinations: Ausgrid, Endeavour, and Essential Energy*, 1 June 2023, p 18.

¹⁸ Endeavour Energy, *0_14 Tariff Structure Statement - January 2023* - p 30; Endeavour Energy, *5.01 Engagement Summary Report – January 2023*, p 60.

19.4.1.2 Charging windows align with peak demand and minimum demand periods

Our draft decision is to approve Endeavour Energy’s tariff structures for its residential and small business customers. We consider Endeavour Energy’s proposed suite of tariffs align with customers’ load profiles and are cost reflective. We anticipate that the network tariffs will facilitate retail tariffs that encourage customers to avoid consuming energy during peak times, reducing network augmentation needs and long-term costs to all consumers.

Endeavour Energy largely maintained its existing cost reflective residential and small business peak charging window as it already aligns with peak demand on its network. Peak energy and peak demand charges will continue to apply from 4pm – 8pm on weekdays and vary between high-season (November to March) and low-season (April to October). We consider Endeavour Energy has provided sufficient evidence to retain seasonality in its tariffs, as it can directly correlate peak demand events to air conditioner use in summer months.¹⁹ We will continue to monitor the efficacy of seasonal charging windows in the 2029–34 period.

To increase the cost reflectivity of its existing tariffs, Endeavour Energy proposed to add a solar soak component to both the time-of-use and time-of-use demand tariffs between 10am – 2pm every day. This low-priced period facilitates retail tariffs that encourage customers with flexible load to shift that load to the periods of high solar generation. Such a load shift would benefit solar PV owners by increasing the capacity of the network to take additional exports (reducing export curtailment), as well as enabling customers without solar PV generation to benefit from it through lower network prices during the day.

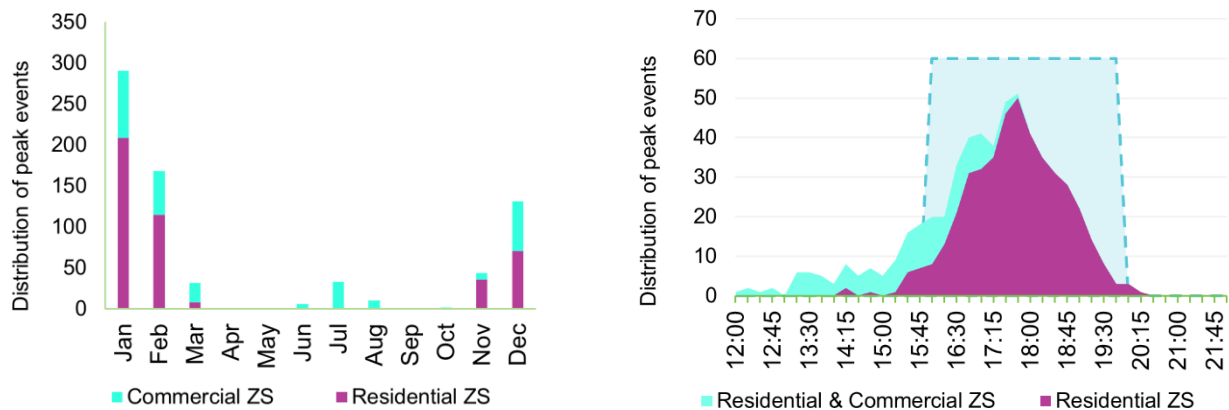
Endeavour Energy illustrated how these charging windows align with demand peaks and minimum demand periods. Figure 19.1 shows that the peak charging window (4pm – 8pm) aligns with forecast maximum demand modelled on nine constrained substations. It also shows the distribution of peak events across the year, showing that most peak events occur during summer months. Figure 19.2 below shows that the impact of solar PV on minimum demand will continue to increase to 2030.

Origin Energy submitted that consistency should be promoted across the distributors on elements such as peak and off-peak periods.²⁰ We understand the potential benefits of consistency and simplicity to retailers for developing and communicating products to their customers. The charging windows are developed by distributors to reflect the specific constraints on their individual networks. However, we encourage distributors to look for opportunities for consistency across networks where this is consistent with network needs.

¹⁹ Endeavour Energy, *0_15 Tariff Structure Explanatory Statement* - January 2023, p 56.

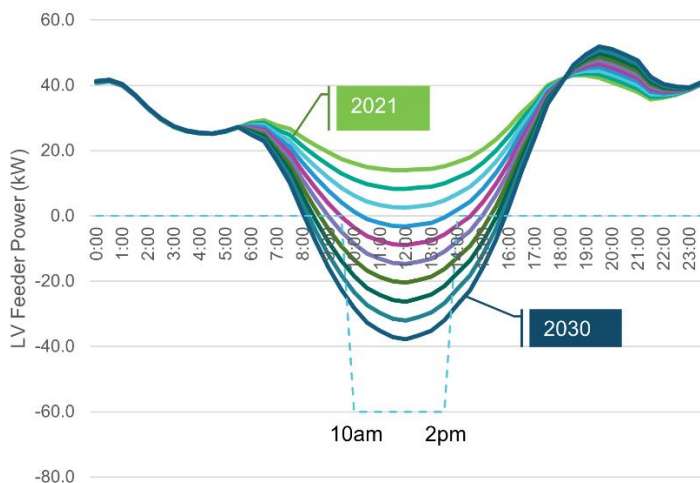
²⁰ Origin Energy - *Submission - 2024–29 Electricity Determination - NSW and ACT* - May 2023.

Figure 19.1: Distribution of peak demand events based on 9 constrained zone substations



Source: Endeavour Energy's Tariff Structure Explanatory Statement, p 58 figure 31.

Figure 19.2: Forecast impact of solar PV on Endeavour Energy's minimum demand



Source: Endeavour Energy's Tariff Structure Explanatory Statement, p 56 figure 29.

Endeavour Energy will also continue to offer two optional controlled load tariffs. Controlled load tariffs are available to retailers (for their customers) on an opt-in basis and allow distributors to control supply of energy for certain technology connected to a controlled load circuit. Typically, hot water systems and pool systems are controlled via this circuit to charge overnight and avoid their contribution to the evening peak.

Endeavour Energy did not propose any changes to its controlled load tariffs. Its controlled load 2 tariff currently allows for energy supply across a 24-hour period, which could be used to manage EV charging demand peaks by restricting supply during peak times and allowing supply during the day or overnight. However, we recommend Endeavour Energy consider tailoring its controlled load tariff to customers with flexible load such as EVs. This is discussed further in the section titled '*Tariff structures for energy sector developments.*'

19.4.1.3 Tariff structures for energy sector developments: Tariffs and residential EV owners

The accelerating uptake of EVs and consequential need to manage EV charging on the grid is becoming integral to the design of network tariff structures and to the AER's decision-making. Consistent with most other distributors, Endeavour Energy anticipates EV uptake will accelerate noticeably from the end of the 2024–29 period.²¹

Our draft decision on tariffs for EV charge point operators is explained below under the section labelled *Implications for EV charge point operators*.

Endeavour Energy is managing the anticipated increase in EV load by progressing its tariff reform program broadly rather than by establishing specific tariffs for EV owners or charge point operators. We support this approach and consider it aligns with the NER's principle that customers with a similar connection and usage profile be treated equally.²² It also recognises that distributors currently do not have visibility of customers with EVs. Consistent with the AER's determinations for the Victorian electricity distributors' 2021–26 tariff structure statements, we do not support the introduction of discounted tariffs for EV owners or EV charge point operators.²³ Rather, we support the continued implementation of cost-reflective tariffs for all customers, including EV owners.

Endeavour Energy's new solar soak component in its cost reflective tariffs can encourage EV owners to charge their vehicles during the day, shifting some of the charging load from the evening peak and supporting efficient use of the network. Additionally, Endeavour Energy's proposed assignment policy, which removes the ability of customers to opt-out of cost reflective tariffs, and the anticipated acceleration of smart meter roll out will see the retailers of more EV owners face cost reflective tariffs in the 2024–29 period. We consider the combination of cost reflective tariffs, assignment policy and higher prevalence of smart meters will allow and encourage more customers to shift their EV charging outside of the evening peak demand period.

In the future, Endeavour Energy's new two-way tariff could support vehicle to grid (V2G) export of electricity whereby customers use their EVs as batteries, charging from solar or from the grid during low price periods, and exporting from their EV into the grid at times of high network demand.

19.4.1.3.1 Tariff structures for energy sector developments: Controlled load tariffs as an additional mechanism to manage EV charging

As discussed above, we approve Endeavour Energy's controlled load tariffs. With the accelerated roll out of smart meters and increasing uptake of EVs, new network tariffs may be required to facilitate retail tariffs that incentivise customer charging behaviour change and network benefits.

²¹ Evoenergy is the exception and will see EV uptake accelerate earlier in the ACT than in Endeavour Energy's network since the ACT is leading other States on EV uptake rates.

²² NER, cl. 6.18.4(a)(2).

²³ AER – Final Decision – *CitiPower distribution determination 2021-26 – Attachment 19 Tariff structure Statement* – Appendix C, p 40.

In recognition of the uncertainty surrounding forecast EV load, and to better manage this load, we also encourage Endeavour Energy to explore the feasibility of developing a new opt-in controlled load tariff targeting flexible load for inclusion in its revised proposal, or provide more clarity on how its existing tariffs may help manage flexible load.

Controlled load tariffs have traditionally been used for large, regular loads such as hot water and pool pumps. We also recognise the continued development of dynamic operating capabilities will increase the range of options available to distributors to manage load. Nonetheless, we consider well designed controlled load tariffs may be one option that could help manage EV charging load alongside cost reflective primary tariffs, and in parallel with the ongoing development of more advanced tariff options.

Endeavour Energy's proposed controlled load tariff 2 allows for energy supply for 17 hours in a 24-hour period. This will allow EVs connected to it to charge both overnight and during the day, to continue to help manage demand peaks and also help 'soak up' some of the solar energy available. We are also pleased that Endeavour Energy plans to trial a tariff in the 2024–29 period which targets dynamically controlling load such as EV load and hot water load.²⁴

Our encouragement reflects our concern that the existing tariff structure statement framework lacks flexibility to respond to potential rapid growth in EV uptake during the upcoming 5-year regulatory period and its potential contribution to peak demand periods. Without these additional tariff considerations, the only option distributors have to respond to unexpectedly high demand from EV charging is to seek a tariff structure statement amendment under NER cl. 6.18.1B.²⁵ While this risk may be lower in Endeavour Energy's distribution area than in Evoenergy's, reflecting slower EV uptake in NSW compared to the ACT, Endeavour Energy has an opportunity to get ahead of any such surge in EV demand by tailoring a controlled load tariff to better suit EV customers. For example, with more targeted supply windows.

We note that Endeavour Energy's existing controlled load tariffs comply with pricing principles and may also deliver, or partly deliver, on our recommendation. Endeavour Energy's tariff structure statement could contain more detail on whether these tariffs could be used to target flexible load such as EV owners. We encourage Endeavour Energy to provide further information on this in its revised tariff structure statement proposal.

We will continue to work collaboratively with Endeavour Energy, other distributors, and with input from their stakeholders, on these issues both before releasing our final decisions and within the upcoming 2024–29 period.

19.4.1.3.2 Tariff structures for energy sector developments: Contingent tariff adjustments

Contingent tariff adjustments are a new feature of this round of tariff structure statements. The rapid pace of change makes it difficult for distributors to accurately forecast the rate of uptake of CER over the regulatory period, particularly electric vehicles. To be flexible in

²⁴ Endeavour Energy, *0_15 Tariff Structure Explanatory Statement* - January 2023, p 30.

²⁵ The AER will only approve a request by a distributor to amend its tariff structure statement if an event has occurred that is beyond the reasonable control of the distributor and could not have been foreseen by the distributor at the time the tariff structure statement was approved. NER, cl. 6.18.1B(d)(1).

response to the potential step changes in load that may result from rapid but unpredictable uptake, some distributors, including Endeavour Energy, proposed tariff adjustments they would only introduce if load profiles shift in ways that could induce network investments. We consider the incorporation of a contingent adjustment to tariff parameters is, when well defined and its trigger is made clear, a reasonable way of balancing certainty and flexibility.

Our draft decision is to approve Endeavour Energy's proposed contingent tariff adjustment and trigger event. However, we recommend Endeavour Energy includes its proposed adjustment and trigger in the text of its tariff structure statement as well as its explanatory document.

We consider Endeavour Energy's proposal to extend its peak window to apply from 4pm – 9pm (rather than 4pm – 8pm), if EV uptake and consumption profiles exceed expectations, is sufficiently clear and well-defined in its tariff structure explanatory statement. This contingent tariff adjustment will only be triggered if there is a material impact on demand, and the timing of system peak demand, as reported in its Regulatory Information Notice (RIN), occurs after 8pm.

Some stakeholders raised concerns over the concept of contingent tariff adjustment. Origin Energy submitted that contingent tariffs introduce unnecessary complexity.²⁶ Red Energy submitted that changing peak charging windows within a regulatory period would be confusing for consumers and difficult for retailers.²⁷

These are understandable concerns. We have balanced these concerns against the rate of change in the energy sector and consider a degree of flexibility in approved tariff structure statements is warranted. The alternative of rigid tariff structures through 5-year regulatory periods, risks customers incurring greater network costs over the long term. We consider retailer concerns can largely be addressed through transparency around the triggers for changing tariff charging parameters and that Endeavour Energy's proposal provides this transparency.

19.4.1.4 Assignment policies and customer impact for residential and small business customers

We assessed Endeavour Energy's tariff assignment policies against the network pricing objective and the pricing principles including the impact of change to its customers.²⁸ We also considered the outcome of the AEMC *Review of the regulatory framework for metering services*. We anticipate the response to that review will include a rule change to accelerate the smart meter rollout. As a consequence, we also expect an acceleration of the pace of network tariff reform. Distributor tariff assignment policies must be appropriate for this new context of more rapid sector-wide change.

²⁶ Origin Energy - *Submission - 2024–29 Electricity Determination* - NSW and ACT - May 2023, p 6.

²⁷ Red Energy and Lumo - *Submission - 2024–29 Electricity Determination* - NSW - May 2023, p 3.

²⁸ NER, cl 6.18.5(a) sets out the network pricing objective, that tariffs should reflect the efficient costs of providing those services to the retail customer. That is, tariffs should be cost reflective. NER, cl 6.18.5(h) sets out that a distributor must consider the impact on retail customers of any changes in tariffs from the previous year.

We are aware that Endeavour Energy plans to make further changes to its proposed assignment policy (shortening its transition strategy from 24 months to 12 months) in its revised tariff structure statement, in response to stakeholder engagement. We seek stakeholder feedback on whether the changes are appropriate. We will take this feedback and any other supporting information Endeavour Energy provides us in its revised tariff structure statement into consideration when we make our final decision. We otherwise consider Endeavour Energy demonstrated strong tariff reform progress by removing the ability of customers with smart meters to opt-out to flat tariffs.

Endeavour Energy forecasted that, under its accelerated assignment policy and the prevalence of more smart meters, 71% of residential customers will be assigned to reflective network tariffs in 2029, up from 8% in 2022.²⁹ It further forecasted that having more customers on cost reflective tariffs will result in a 1% decrease in maximum demand and overall lower network costs for all customers.³⁰

Endeavour Energy modelled the impact of both solar and non-solar customers moving from the flat tariff to its default time-of-use tariff, and showed that approximately 70% of non-solar customers will benefit from this shift and 20% of solar customers will benefit.³¹ Endeavour Energy created 6 ‘customer personas’ (or archetypes) demonstrating how different customer types may interact with its tariff, assuming retailers passed through the tariff signals.

To mitigate any adverse impacts on customers, Endeavour Energy initially proposed a 2-year transition period. Under this approach, retailers whose customers have smart meters will be assigned to a default time-of-use tariff over a 24-month transition period, with the option to opt-out to an alternative demand tariff. Its anytime flat tariff (residential) or flat inclining block tariff (for small businesses with accumulation meters who consume less than 120 MWh³² per annum) will now only be accessible to customers with accumulation meters. We consider this approach goes a significant way to ensuring that customers with capable meters can benefit from metering technology.

Endeavour Energy subsequently informed us in mid-August of its intention to reduce the transition period from 24 months to 12 months. That is, customers would still have a 12-month ‘lag’ in moving to cost reflective tariffs but no longer be assigned to a transitional tariff with weaker signals for a further 12 months. This new approach already has some support. For instance, Red and Lumo Energy submitted that Endeavour Energy should abolish the 24-month transition period as customers can understand time-of-use price signals and there will be fewer transitional steps.³³

Our view is that a 12-month lag gives customers and their retailers sufficient time to understand their energy usage and prepare for more cost-reflective signals. We also consider that reducing the transition period increases the simplicity of Endeavour Energy’s assignment policy. We invite stakeholder feedback on this proposed change, which we

²⁹ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 6.

³⁰ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 6.

³¹ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 76.

³² MWh = megawatt hour.

³³ Red Energy and Lumo - *Submission - 2024–29 Electricity Determination - NSW - May 2023*, p 5.

anticipate Endeavour Energy will describe in its revised tariff structure statement and that we will consider in our final decision.

In a discussion with AER staff, the AEMC requested that tariff structure statements' assignment policies for transitioning customers' retailers to cost reflective tariffs where the customer's meter is upgraded due to age, are also applicable where meters are upgraded due to an acceleration rule change. The request was intended to ensure customers receiving smart meters under AEMC's recommended accelerated smart meter rollout, can access the same transitional mechanisms applying to any other customer receiving a smart meter not initiated by the customer (i.e. mechanisms intended to manage impacts to customers from assignment to cost reflective network tariffs). We advised distributors of this request. Endeavour Energy's tariff structure statement provides for this already since its 12-month lag is available for all meter replacements not initiated by the customer.

19.4.2 Two-way tariffs

Our draft decision is to approve Endeavour Energy's proposed export reward tariff.³⁴ Endeavour Energy's proposed export reward tariff incorporates the customer protections required by the NER,³⁵ including:

- a basic export level— i.e. the amount of electricity that a customer can export to the grid at no cost and must apply for a 10-year period (two regulatory periods) (see section on the basic export level below)
- an export tariff transition strategy³⁶
- provision that existing solar PV customers will not face export tariffs until 1 July 2025 unless they elect to participate earlier.³⁷

Endeavour Energy demonstrated strong stakeholder engagement consistent with our Handbook and demonstrated that it incorporated feedback provided by stakeholders through its engagement processes in designing its proposed export reward tariff. This includes by:

- proposing export rewards higher than export charges
- introducing two-way pricing on a uniform basis.

We consider Endeavour Energy has justified its need for two-way pricing and that its proposed export reward tariff is consistent with the guidance set out in our non-binding

³⁴ An export is the surplus electricity sent from a consumer's rooftop solar PV or on-site battery to supply other customers on the grid.

³⁵ NER, cl. 11.141.12; NER, cl. 11.141.13; NER, cl. 6.18.1A(a)(2A); NER, cl. 11.141.11.

³⁶ The export transition strategy should provide transparency about the distributors long-term intentions to introduce or not introduce export tariffs, to assist customers who are considering investing in CER, including rooftop solar.

³⁷ Existing customers are customers who either are already connected to the grid and able to export, or had an open or accepted connection offer at the time of the AEMC's final determination.

Export Tariff Guidelines and complies with the distribution pricing principles as required by the NER.^{38,39}

Endeavour Energy's proposed export reward tariff will allow retailers and their customers to access payments from Endeavour Energy in return for their actions that enables greater solar generation. It also promotes equitable integration of CER into the electricity grid that will benefit all electricity users by:

- protecting those customers who cannot invest in export-capable appliances (such as rooftop PV, EVs with vehicle-to-grid functionality and on-site batteries) from paying for a grid service they don't use - for example, Endeavour Energy estimated the reduction in cross subsidy ranging from \$0.3 million if 10% of its customers opt-in, to \$2.7 million if 90% opt-in⁴⁰
- rewarding / reducing the bills of those customers who can respond to these price signals by changing how they use their own solar power and/or when they export it
- incentivising better use of existing network assets, which will help mitigate network augmentation investment needs for both import and export capacity and keep future costs (future bills) lower for all electricity users (to the extent augmentation expenditure is avoided).

We discuss the reasons for our draft decision on Endeavour Energy's proposed export reward tariff below, under *Reasons for decision on Endeavour Energy's export reward tariff*.

19.4.2.1 Endeavour Energy's proposed export reward tariff

Endeavour Energy proposed that its export reward tariff applies as a secondary tariff on an opt-in basis from 1 July 2024 for existing and new residential and small business customers. The secondary tariff would apply alongside its seasonal time-of-use energy and seasonal time-of-use demand tariffs.

From 1 July 2025, Endeavour Energy proposed its export reward tariff becomes the default tariff for new residential and small business customers with provision to opt-out, but to remain opt-in for existing residential and small business customers. From 1 July 2029, Endeavour Energy proposed all residential customers, new and existing are assigned to its export reward tariff with no opt-out provision. Endeavour Energy's proposed assignment policy for its export reward tariff is summarised in the table below.

³⁸ AER, *Export Tariff Guidelines*, May 2022 set out that in proposing two-way pricing distributors should clearly justify the need for two-way pricing, demonstrate analysis of customer impact and management of customer impact and undertake appropriate customer engagement.

³⁹ See NER, cl. 6.18.5.

⁴⁰ Endeavour Energy, *Response to Information Request IR#033 question 4*, 28 June 2023. These figures are an estimate of the export charges paid by exporting customers and therefore the reduction in subsidy paid by non-solar customers,

Table 19.1: Endeavour Energy’s proposed assignment policy for its export reward tariff

Customers	Prior to 1 July 2025	After 1 July 2025	2029 – 34 period
New residential and small business export customers (post 1 July 2025)	Opt-in option to export reward tariff	Assigned to export reward tariff with opt-out clause	Assigned to export reward tariff with no opt-out clause
Existing residential and small business export customers (as at 1 July 2025)	Opt-in export reward tariff		Re-assigned to cost reflective export reward tariff with no opt-out clause

Endeavour Energy did not propose two-way pricing for its large commercial and industrial load customers, other than for grid-scale battery customers. Endeavour Energy’s proposed two-way pricing for grid-scale battery customers is discussed under *Grid-scale batteries*.

Table 19.2: Summary of Endeavour Energy’s proposed export reward tariff for residential and small business customers

Proposed tariff(s)	Basic export level ⁴¹	Export rewards	Export charge
Small customer secondary export tariff	2 kW ⁴²	Export reward from 4pm – 8pm (high season): 11.03 c/kWh ⁴³ Export reward from 4pm – 8pm (low season): 3.336 c/kWh	Export charge from 10am – 2pm, 3.6 c/kW applied to the monthly maximum export above 2 KW

We note that this draft decision, and our final decision to follow, are the result of a long reform process to enable, develop and assess two-way pricing proposals that support more effective utilisation of both the grid and CER, towards a 100% renewable energy system. As this is a significant reform and this round of tariff structure statements is the first time distributors may introduce two-way pricing, we also provide background information as to why this reform was made.

19.4.2.2 Background to the AEMC’s rule change to allow two-way pricing

A long running and broad collaborative policy development process was led by the Australian Renewable Energy Agency (ARENA), as part of the Distributed Energy Integration Program with market bodies, Energy Consumers Australia and consumer advocates. This preceded consideration of a rule change by the Australian Energy Market Commission (AEMC).⁴⁴ On 12 August 2021, the AEMC published its *Access, pricing and incentive arrangements for distributed energy resources* final determination. Amongst other things, the rule change removed the historical prohibition on export tariffs and allowed distributors to propose two-way pricing to match two-way energy flows on electricity networks.

The AEMC’s rule change followed requests from SA Power Networks (SAPN), St Vincent de Paul Society Victoria, and the Total Environmental Centre jointly with the Australian Council of Social Services to make changes to the NER to integrate CER into the electricity grid in a

⁴¹ The basic export level is the free threshold level up to which customers can export to the grid for free during the export charging period (10am – 2pm). At all other times customers are not charged for their exports to the grid. During the export reward period (4pm – 8pm) customers will receive rewards for every kWh exported. These export rewards are separate from and in addition to the feed-in tariffs currently offered to customers by retailers.

⁴² The billed quantity is based on the customers metered maximum export for the month (in kW), less the 2kW basic export level. This billing quantity would be multiplied by the export charge (c/kW/day) and multiplied by the number of days in the billing month. For example, over the month if the customer’s maximum export in kW between 10am – 2pm on all days during the billing month is 4kW. The export billing quantity is 2kW, i.e., 4kW less the BEL of 2kW. The billing quantity is multiplied by the export charge of 3.6c/kW/day. This results in an export charge of \$2.23 for that month.

⁴³ kWh = kilowatt hour.

⁴⁴ <https://arena.gov.au/knowledge-innovation/distributed-energy-integration-program/access-and-pricing-workstream/>.

way that benefits all electricity users. These groups sought for the costs associated with supporting the energy transition and the growth of CER to be distributed equitably.

We note this rule change was contentious. Energy Consumers Australia, representing both solar and non-solar households supported reforms that were designed to benefit both groups of consumers. Many people, particularly supporters of Solar Citizens, expressed to the AEMC their opposition to the introduction of two-way pricing. In response to these concerns, a range of innovations were embedded within the rule change to protect customers with CER from adverse outcomes. These innovations included mandating 'basic export levels' - export capacity thresholds below which no export charges could be levied. The rule change also prevented distributors mandatorily assigning customers to export tariffs before 2025, enabling customers with CER with rooftop PV at the time of the rule change to realise much of the value of their investment before these new tariff arrangements came into effect.

The rule change also required the AER to consult on and develop *Export Tariff Guidelines* to provide information and guidance to distributors and stakeholders about the process for development and approval of export tariffs. In developing our *Export Tariff Guidelines*, we worked collaboratively with stakeholders, including Energy Consumers Australia and Solar Citizens, to introduce additional protections for customers with CER. Published in May 2022, along with an explanatory statement, our *Export Tariff Guidelines* prevent distributors recovering through export charges any historical export related network costs incurred. We provided 2 potential dates as to when distributors may start to recover export service costs from export tariffs.⁴⁵ Our *Export Tariff Guidelines* also require distributors to justify the introduction of export tariffs, should they propose to do so.

Through the joint operation of the rule change and our *Export Tariff Guidelines*, subject to the customer protections touched on above and described in detail below, distributors may now introduce price signals which, if passed through to customers by retailers, encourage exporting customers to self-consume or store their own solar energy during the middle of the day when the costs to host excess solar on the grid are high and to export to the grid, or self-consume, during the evening consumption peak. As with any network tariff, retailers may or may not reflect network price signals, including export rewards, in their retail offers to customers.

19.4.2.3 Introducing two-way pricing in the 2024–29 period

Responding to the rule change and our *Export Tariff Guidelines*, Ausgrid, Endeavour Energy, Essential Energy and Evoenergy proposed to introduce two-way pricing during the 2024–29 period.

Over the 18 months prior to submitting their tariff structure statement proposals to the AER, each of the four distributors noted above engaged heavily with their stakeholders to develop their proposed two-way pricing proposals. These distributors also trialled two-way tariffs under real world conditions with retailers and customers and used learnings from these trials to further inform their two-way tariff development.

⁴⁵ AER, *Export Tariff Guidelines*, May 2022, p 12.

We consider feedback elicited by distributors from their individual stakeholder engagement processes, including feedback from AER staff, in addition to learnings from the tariff trials, are evident in the proposals submitted to us for assessment.

With respect to those proposals, all four distributors have incorporated export rewards, or rebates for exported electricity, which are higher than their proposed export charges. These export rewards reflect the value to electricity networks of electricity exported onto the grid by customers with CER during times of network congestion due to high consumption demand.

This focus on rewards instead of penalties is appropriate and represents a turning point in network pricing which historically has exclusively levied charges on retailers for their customers' network use, rarely rewards. For the first time, retailers and their customers may systematically and repeatedly access payments from their local network provider in return for their actions to support the grid.

Export rewards will be available to all exporting customers and will apply to every kWh exported during the reward period, in Endeavour Energy's network between 4pm – 8pm. The proposed export rewards are in addition to the current feed-in tariffs on offer, meaning exporting customers will be offered more rewards for their exports than currently, during the export reward window. Because the export reward period begins relatively early in the day, customers with CER will have an incentive to install their rooftop PV arrays on west-facing roof panels. In this way even new customers installing solar PV without storage may access export rewards, particularly in summer months when many of the electricity networks typically experience their peak demand events.

To finance the export rewards, and to more equitably signal the cost of network investment to enhance export capacity, export charges are also proposed. The proposed export charges are modest and only apply to excess exports, those exports above the no cost basic export level, between 10am – 2pm.

The proposed export reward and export charge apply in addition to and separate from rewards from feed-in tariffs. This means customers will continue to be rewarded with feed-in tariffs for all exports to the grid. In the ACT the current feed-in tariffs on offer range from 5 c/kWh to 17 c/kWh and in NSW the current feed-in tariffs range from 6 c/kWh to 16 c/kWh depending on the retailer.^{46,47} Under Endeavour Energy's proposed export reward tariff, if customers export during the export reward period, they will receive an even greater reward for their exports.

The basic export level is an additional protection introduced by the AEMC's rule change. It is the threshold up to which customers can export for free during the export charging period. This means, even during the export charging window, customers can still export some of their solar power for free.

Customer impact analysis provided by the distributors demonstrated most customers will benefit from the proposed export reward tariffs, especially during summer months when more

⁴⁶ <https://www.solarquotes.com.au/systems/feed-in-tariffs/act/>.

⁴⁷ <https://www.solarchoice.net.au/research-solar/solar-feed-in-rewards/>.

solar is exported into the late afternoon.⁴⁸ Our own comparative modelling of the four export reward tariff proposals submitted to us verified the distributors' customer impact analysis. Customers with CER able to use more of their own exports in the middle of the day, and export to the grid later in the afternoon/early evening will maximise their benefits.

We observe similarities between each distributors proposed export reward tariffs. These include export rewards greater than export charges and consistency in the timing of the export reward and charging windows. However, we also observe some differences in particular with regard to the threshold levels of the basic export levels, how the basic export levels are expressed (kW and kWh) and how export charges are applied (dollars per kW and dollars per kWh).⁴⁹

Given these differences, the complexity of the export reward tariffs, and that this is the first time two-way pricing has been proposed, we encourage the distributors to include fact sheets and worked examples of how export reward tariffs work with their revised tariff structure statements.

We also recommend the distributors consider the possibility of expressing their basic export levels in kWh and applying the export charge on a dollar per kWh basis as this is simpler for customers to understand and retailers to incorporate into their retail offers. While our draft decision does not consider it necessary to stipulate, we are interested in stakeholder feedback on this issue.

19.4.2.4 Reasons for our draft decision on Endeavour Energy's export reward tariff

We consider Endeavour Energy demonstrated its need for two-way pricing. Endeavour Energy provided analysis in its tariff structure statement that showed localised imbalances between customer imports and exports, caused in combination by:

- high output from solar PV generators on the LV network
- lower levels of load, which has traditionally occurred in the middle of the day.

Endeavour Energy submitted these imbalances cause voltage fluctuations that put at risk the safe and reliable provision of its network services to customers and have resulted in costs to manage the network.⁵⁰

Endeavour Energy's proposed export reward tariff is consistent with the aim of the AEMC's rule change for the costs associated with the growth of CER to be distributed equitably.⁵¹

We received submissions from stakeholders, including from Solar Citizens and 455 submissions from Solar Citizens' supporters, arguing that two-way pricing is not required,

⁴⁸ This is based on the assumption that retailers will pass these structures directly onto their retail customers.

⁴⁹ Ausgrid's and Evoenergy's proposed basic export levels are expressed in kWh and Endeavour Energy's and Essential Energy's basic export levels are expressed in kW. We also note differences in how the export charges are applied and expressed (Ausgrid and Evoenergy export charge is expressed in dollars per kWh, whereas Endeavour Energy and Essential Energy express their export charges in dollars per kW).

⁵⁰ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 55.

⁵¹ AEMC, Rule determination – *National electricity amendment (access, pricing and incentive arrangements for distributed energy resources) rule 2021*.

and distributors have not justified the need for two-way pricing in their proposals.⁵² Further, PIAC submitted support for the proposed export reward tariffs but noted that justification of two-way pricing could be further developed.⁵³

In response to these submissions, we consider Endeavour Energy has justified its need for two-way pricing. However, we also consider that distributors could include more information supporting two-way pricing in revised tariff structure statements. This could include case studies and worked examples that demonstrate how export rewards and charges may apply in practice and further justify introducing two-way pricing. We consider that it is important for the distributors to continue to engage with stakeholders on two-way pricing and incorporate feedback in revised tariff structure statements.

Endeavour Energy's proposal signals the costs caused by additional exports during the middle of the day, and also signals to exporting customers the network benefits that arise from:

- managing their exports in the middle of the day, i.e. by shifting load to the middle of the day to increase self-consumption, storing generation in a battery, or installing west facing panels
- exporting during the evening peak demand period when customers should be rewarded for their exports because it frees up network capacity.

Retailers responding to these signals through retail offers that reflect Endeavour Energy's proposed export reward tariff, will help address the widening misalignment between peak network demand in the evening and peak solar generation during the middle of the day.

Consumers are more likely to respond to price signals if those signals are consistent and apply for a reasonable period of time. The absence of price signals, if price signals are not set early enough, can lead over the longer term to price volatility, price shock and reduced customer ability to respond as they lock in investments under invalid assumptions about future costs. Earlier response by CER customers to price signals will help mitigate the need for future augmentation costs and associated higher charges, thereby keeping bills lower for all electricity consumers.

We consider Endeavour Energy's proposed export reward tariff is consistent with the pricing principles that tariffs must reflect efficient costs and minimise distortions to price signals as discussed below.⁵⁴

⁵² Solar Citizens submitted that the need for export pricing is not demonstrated, flexible export limits has not been adequately explored, there is a lack of evidence of price responsiveness, and solar lowers costs for all consumers. The Solar Citizen members submissions generally made the same points, including export charges should not be introduced when costs of living are rising and that proposed two-way prices will diminish the uptake of solar.

⁵³ PIAC - *Submission - 2024-29 Electricity Determination - NSW* - June 2023, p 9.

⁵⁴ NER, cl. 6.18.5(g).

19.4.2.5 Endeavour Energy’s export reward tariff reflects efficient costs

Endeavour Energy’s proposed export charge recovers only Endeavour Energy’s LRM of providing additional (incremental) export capacity.⁵⁵ Endeavour Energy did not propose to recover any residual or historical costs through its export charge and only attributed costs to export charges commencing from the first day of the 2024–29 period.

This reflects the guidance set out in our *Export Tariff Guidelines*, that the costs incurred by distributors to provide their network’s intrinsic hosting capacity (historical costs) should not be recovered through export charges.⁵⁶ This additional intervention in our *Export Tariff Guidelines* protects exporting customers from paying for network costs incurred prior to the AEMC’s rule change that facilitated two-way pricing, given customers have already invested in their own rooftop PV without expecting to be charged for their exports.

Endeavour Energy’s export reward is based on its consumption LRM.⁵⁷ We consider that additional exports from residential and small business customers during the peak demand window frees up additional capacity on higher levels of the network and therefore mitigates the need to invest in additional capacity or potentially defers investment to future years. The costs that can be avoided or deferred are reflected in the import LRM. We consider this approach acceptable.

Endeavour Energy’s proposed export reward and charge windows reflect peak demand and peak export times when the costs to support demand and exports are highest. The export reward window of 4pm – 8pm aligns with peak system load periods in the later afternoon and early evening. The export charge window of 10am – 2pm aligns with periods of high solar exports to the grid contributing to voltage problems, and with low network consumption charges (i.e., the ‘solar soak’ periods) which, if passed through to customers by retailers, encourage customers to consume during the day.

19.4.2.6 Endeavour Energy’s basic export level reflects its hosting capacity

Our *Export Tariff Guidelines* did not specify a particular methodology to set the basic export level. However, consistent with our *Export Tariff Guidelines*, Endeavour Energy considered the following key inputs:

- its network’s intrinsic hosting capacity
- forecast uptake of CER.

Endeavour Energy developed a model of its network that simulates two-way flows across its LV assets to determine the expected export curtailment that occurs on the network under a range of customer specific assumptions, such as the size and uptake of CER assets.⁵⁸ Endeavour Energy found that, absent network investment to support two-way flows, its anticipated export service standard will deteriorate substantially when export capacity

⁵⁵ That is: any augmentation capital expenditure (augex) linked to the export service potentially, some portion of replacement capital expenditure (repex), operating expenditure (opex) dedicated to providing additional export service capacity, or a proportion of this opex if it is incurred to provide both the export and consumption service.

⁵⁶ AER, *Export Tariff Guidelines*, May 2022, p 12.

⁵⁷ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 60.

⁵⁸ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 61.

exceeds 2 kW per customer. Consistent with its finding Endeavour Energy defined its basic export level to be 2 kW per customer. Endeavour Energy considered this approach ensures that the basic export level is determined with explicit reference to expected export curtailment and export service standards.

We consider Endeavour Energy's methodology to determine its basic export level is consistent with the guidance provided in our Guidelines. We note that Endeavour Energy's basic export level is expressed as kW and the export charge is per unit of kW. We received stakeholder feedback that an energy based basic export level and export charge expressed in kWh is easier for customers and retailers to understand. Submissions from retailers in response to the distributors' tariff structure statements also supported this. Origin Energy and Energy Australia, submitted that a standardised basic export level and basic export energy charge expressed in kWh rather than in kW is less complex, easier to implement and easier for customers to understand.⁵⁹ We encourage Endeavour Energy to consider expressing its basic export level and export charge in kWh in its revised proposal.

19.4.2.7 Endeavour Energy's export reward tariff considers the impact on customers of changes in tariffs

Endeavour Energy's customer impact analysis demonstrated the price impacts of its proposed two-way pricing on end-use customers are moderate. Many CER customers will benefit from Endeavour Energy's proposed export reward tariff or will experience minimal bill impacts. We encourage Endeavour Energy to include further analysis in its revised tariff structure statement on how customers with different sized solar PV systems may be impacted by its new two-way tariff.

Currently 23% of Endeavour Energy's customers have solar PV systems, with the typical system size of 4.8 kW.⁶⁰ Assuming retailers pass on Endeavour Energy's export reward tariff as proposed to us, 50% of Endeavour Energy's exporting residential customers will be better off from its new two-way tariff. Those who are worse off will be worse off by up to 4%.⁶¹ 40% of exporting small business customers will have no bill impacts or be better off from the new two-way tariff, and the remaining 60% would only be worse off by up to 4%.⁶²

Endeavour Energy designed 'customer personas' to aid its customers in better understanding how different customer types might respond to the new tariff structures. For example:

- a household with solar consuming 1,800 kWh/year could save \$102 annually by shifting export to peak times

⁵⁹ *Origin Energy - Submission - 2024-29 Electricity Determination - NSW and ACT - May 2023*, p 6; *Energy Australia - Submission - 2024-29 Electricity Determination - NSW and ACT - May 2023*, p 3.

⁶⁰ *Endeavour Energy, 0.15 Tariff Structure Explanatory Statement - January 2023*, p 21; *Endeavour Energy, Response to Information Request IR#033*, 28 June 2023.

⁶¹ *Endeavour Energy, 0.15 Tariff Structure Explanatory Statement - January 2023*, p 77.

⁶² *Endeavour Energy, 0.15 Tariff Structure Explanatory Statement - January 2023*, p 79. This system size is already larger than Endeavour Energy's static export limit of 5 kW.

- a household with solar consuming 4,800 kWh/year could save \$80 annually from shifting export to peak times.⁶³

Endeavour Energy proposed to mitigate the impact of customers moving from its flat tariff to two-way pricing over a two-year period. While we support this approach, please see section 19.4.1.4 above on further proposed changes to Endeavour Energy's residential and small business assignment policy.

We note that two-way network tariffs, like consumption network tariffs, are not sent directly from the distributor to end customers. Rather, these price signals are sent to retailers who may package these price signals into retail offers as they choose.

We are also satisfied Endeavour Energy has a forward-looking plan to mandatorily assign customers to two-way tariffs later in the 2029–34 period, giving customers time to understand solar and opt-in or out in the current period.

19.4.2.8 Endeavour Energy's export reward tariff can be understood or easily incorporated into retail offers

We note retailers' preference for simple two-way tariffs. This is consistent with their preference for time-of-use consumption tariffs over demand tariffs.

Our view is that Endeavour Energy's proposed export reward tariff is capable of being understood or incorporated into retail offers. While the export reward tariff, when combined with consumption network tariffs as intended, is complex, it can be understood and incorporated by retailers, and incentivise retailers to incorporate these network tariffs in a retail tariff that is appealing to and understood by customers. The additional supporting material we have asked the distributors to provide in their revised proposals, fact sheets and case studies, will further assist both customers and retailers in understanding and incorporating these tariffs in retail offers.

19.4.3 Medium and large business tariffs

We are satisfied with most aspects of Endeavour Energy's proposal for medium and large business tariff because:

- tariffs are structured to reflect the efficient costs of providing services
- the proposed tariffs targeting batteries are structured to reflect the efficient costs of providing services
- the tariff structures are reasonably capable of being directly or indirectly incorporated by retailers or aggregators into retail offers
- reassignment policies increase exposure of retailers to cost reflective network tariffs while managing adverse impacts to customers.

Endeavour Energy's proposed tariffs for its medium and large business customers include:

- LV seasonal demand time-of-use and transitional seasonal demand time-of-use tariffs

⁶³ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 74.

- HV seasonal demand time-of-use tariff
- sub-transmission seasonal demand time-of-use tariffs
- embedded network tariff for embedded networks consuming over 160MWh per annum
- LV, HV and sub-transmission grid-scale battery tariffs.

Certain customers also have access to individual tariffs with different distribution charges based on connection point requirements. These tariffs are based on the location of the customer's connection point and the characteristics of the customer's connection requirements.

Endeavor Energy retained:

- the consumption charging windows from the 2019–24 period (4pm – 8pm on weekdays)
- assignment policies and methods to manage customer impact for commercial customers.

19.4.3.1 Consumption tariffs for non-embedded network customers

We approve most of Endeavour Energy's large business consumption tariffs, with the exception of its proposed embedded network tariff.

Endeavour Energy substantially progressed the cost reflectivity of large business tariffs through reforms in the 2019–24 period. Endeavour Energy's commercial tariffs are already strongly cost-reflective, incorporating a mix of fixed charges, volume (energy) charges, time-of-use consumption charges and demand charges.

Endeavour Energy's large business tariffs (LV, HV and sub-transmission tariffs, including individually calculated tariffs) will retain seasonal time-of-use demand charges and time-of-use charges, with the same peak charging windows as its residential and small business tariffs (4pm – 8pm). Large customers will continue to be assigned to one tariff option (time-of-use demand tariff). For LV large businesses (those with 230/400 voltage connections and which consume over 160 MWh per annum) who may have adverse impacts from moving from the small business to the large business tariff, these customers will be able to access a transitional demand tariff for a year. We consider the information presented by Endeavour Energy supports its proposal to retain its existing structures.

The fundamental changes to its large business tariffs are the proposed embedded network tariff and tariffs for LV and HV connected batteries. These are discussed under the headings *Embedded network tariffs* and *Grid-scale batteries respectively*.

Compliance with the NSW hydrogen strategy

Our draft decision is to approve Endeavour Energy's approach the NSW Hydrogen Strategy but require it to make minor changes to its revised tariff structure statement giving effect to the NSW to the strategy.

The NSW distributors are statutorily obligated to give effect to the NSW Government's 90% network concessions for approved green hydrogen producers, under the *Electricity Supply (General) Amendment (Green Hydrogen Limitation) Regulation*. As part of the NSW Government's wider hydrogen strategy, green hydrogen producers can apply for a range of concessions, including a 90% network charge concession (that is, their contribution to the

network costs is 10% of their full network bill). Green hydrogen producers can only be approved for the network tariff concession if they locate in areas of the network with spare capacity, and operate in ways that avoid driving network augmentation investment, or they contribute to any augmentation that is required by their business. This means other customers will, in principle, be better off because existing network costs will be recovered from one or more additional customers and these producers should technically not contribute to network costs, even if the contribution of those customers is limited to 10% of their full network bill.

While the NSW distributors have been aware of NSW's hydrogen strategy for some time, the regulation did not come into effect until after they submitted their initial tariff structure statements. As such, we would expect them to make adjustments to their revised proposals confirming that they will give effect to the network concessions for approved green hydrogen producers via individually calculated tariffs. Endeavour Energy has already committed to reflecting these changes in its revised tariff structure statement proposal.⁶⁴

Implications for EV charge point operators

Endeavour Energy's treatment of EV charge point operators is unchanged from the 2019–24 period. Retailers for EV charge point operators which consume over 160 MWh per annum will continue to be assigned to demand tariffs, while those consuming under 160 MWh will be able to access both demand and time-of-use tariffs. We consider these tariffs are cost reflective, provide options for retailers without Endeavour Energy favouring one customer group over another, and provide options for new and small EV charge point operators to select tariff structures that best suit their needs.

We note that Evie Networks' submission also supported an EV charging station-specific (discounted) tariff for EV charging stations in NSW. As noted above, the NER pricing principles do not allow EV charging stations to be treated differently to other peaky load customers.⁶⁵ We consider the tariffs available to EV charge point operators are appropriate and consistent with the pricing principles in the NER. Our discussion on Evie Networks' submission on LRMC is set out under the heading 'LRMC Methodology'.

Endeavour Energy provided sufficient clarity on individually calculated tariffs

Our draft decision is to approve Endeavour Energy's approach to setting individually calculated tariffs. Endeavour Energy states that site-specific tariffs have the same structures as its large business seasonal demand time-of-use tariff. We consider that this is sufficiently clear for those customers.

19.4.3.2 Embedded network tariffs

Ausgrid, Endeavour Energy and TasNetworks proposed embedded network tariffs to recover residual costs that would have been recovered had an embedded network not existed. Embedded networks are private electricity networks that serve multiple premises, such as in apartment blocks, caravan parks and shopping centres.

⁶⁴ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 91.

⁶⁵ NER cl. 6.18.4 (a)(2).

Embedded network operators pay a single network tariff but bill each customer within the embedded network a tariff closer, or equal, to a network tariff paid by a stand-alone customer. An implicit cross subsidy arises because the distributor recovers residual costs in the form of daily, or “fixed”, charges from only one customer (i.e. the embedded network operator), rather than all customers within the embedded network. A second consideration is that there is opportunity for the embedded network operator to arbitrage between the network tariff it pays and the tariffs it charges its customers, earning a margin for itself.

In principle, we support Endeavour Energy’s embedded network tariff. We consider improved cost recovery from embedded network operators is appropriate given the proliferation of embedded networks across the grid and the resultant growing implicit cross subsidy funded by non-embedded network customers. However, we are concerned that increasing network costs for embedded network operators may undermine the embedded network business model overall (to the extent that embedded networks currently benefit from the existing cross subsidy),⁶⁶ with implications for customers within embedded networks.

Given our concerns and stakeholder views, detailed further below, we do not approve Endeavour Energy’s (or Ausgrid’s) embedded network tariffs at this stage. Rather, we will continue to work with distributors and stakeholders to further develop these tariffs for consideration in our final decision, so that they balance fair residual cost recovery with the needs of embedded networks and their customers. In particular, we see seek additional feedback from a broad range of stakeholders on:

- further supporting information and/or analysis Endeavour Energy should or could include in its revised tariff structure statement
- the level of charges and amount of residual costs Endeavour Energy is attempting to recover through its embedded network tariff
- whether Endeavour Energy adequately considered the benefits embedded networks provide in its proposed charges
- whether Endeavour Energy has adequately considered the impact of its embedded network tariff on embedded networks and customers within embedded networks.

We note that we have approved TasNetworks’ embedded network tariffs.⁶⁷ TasNetworks has fewer existing embedded networks than Ausgrid and Endeavour Energy. Its tariffs are therefore aimed at new embedded networks, giving rise to fewer concerns. While we consider grandfathering arrangements are appropriate for embedded networks in Tasmania, our view is that these arrangements would be inappropriate in areas where there are already many embedded networks, such as in Ausgrid’s and Endeavour Energy’s service areas.

Endeavour Energy identified 389 embedded networks in its network, 248 of which will face this tariff if it is approved. Endeavour Energy’s proposed embedded network tariff has the same structure as its large business seasonal demand tariff, but with a 9.5 c/kW/day higher demand charge (equating to a 23% higher demand charge). Because distributors cannot yet identify the number or types of customers within an embedded network (residential, mixed-

⁶⁶ NER, cl. 6.18.5(h).

⁶⁷ AER – TasNetworks 2024–29 – Draft decision – Attachment 19– Tariff structure statement.

use, or commercial), this additional demand charge is based on the estimated average number of businesses within an embedded network. The new tariff will apply to all embedded networks connected to the LV network consuming over 160 MWh per annum.

We received several submissions on Endeavour Energy's proposed embedded network tariffs, largely from embedded network operators including electricity retailers who operate embedded networks, but also from the Energy and Water Ombudsman NSW (EWON). Comments included:

- there is a policy and economic basis for introducing embedded network tariffs, but it might result in customers within embedded networks paying more, noting that these customers have fewer customer protections than stand-alone customers
- the benefits of embedded networks, such as aggregating demand for its customers and providing distributed energy resources, outweigh the need to introduce an embedded network tariff
- increased demand charges may impact the viability of embedded networks
- an embedded network connection operator invests in (and maintains) all the infrastructure requirements within the embedded network, therefore it is like any other commercial connection, and should not face additional charges
- embedded networks cannot lower their capacity demand
- the connection at a single parent meter is consistent with other large customers
- some customers, for instance short-term customers and landlease customers, within embedded networks that consume over 160MWh may be affected or pay additional amounts
- Endeavour Energy has not justified its embedded network tariff
- Endeavour Energy should consider grandfathering so that only new embedded networks face an embedded network tariff
- Endeavour Energy has not distinguished between different types of embedded networks
- Endeavour Energy should introduce a five-year transition (like Ausgrid) and grandfathering or no transition at all.⁶⁸

We acknowledge stakeholder concerns and the risks outlined in submissions. However, we note Endeavour Energy undertook significant stakeholder engagement to develop its embedded network tariff, and while there are diverse perspectives, we consider that issues raised in submissions are considered and substantially addressed in its proposal as well as in responses to information requests that we have received. This does not mean that all

⁶⁸ Submissions from: EWON - *Submission - 2024–29 Electricity Determination - NSW* - May 2023; Energy Intelligence - *Submission - 2024–29 Electricity Determination – Endeavour Energy* - May 2023; Caravan & Camping Industry Association NSW - *Submission - 2024–29 Electricity Determination – Endeavour Energy* - May 2023; Compliance Quarter - *Submission - 2024–29 Electricity Determination – Endeavour Energy* - May 2023; Energy Locals - *Submission - 2024–29 Electricity Determination - Endeavour & Ausgrid* - May 2023; Origin Energy - *Submission - 2024–29 Electricity Determination - NSW and ACT* - May 2023; Network Energy Services - *Submission - 2024–29 Electricity Determination – Endeavour Energy* - May 2023; Energy Locals - *Submission - 2024–29 Electricity Determination - Endeavour & Ausgrid* - May 2023.

issues have been addressed to the satisfaction of all customers. There are areas of Endeavour Energy’s proposal that could be improved or adjusted and Endeavour Energy has an opportunity to further consider the stakeholder concerns and the additional stakeholder feedback we are seeking through this draft decision, in its revised tariff structure statement.

We seek further feedback from stakeholders on Endeavour Energy’s embedded network tariff

Additional information to support the embedded network tariff

Our view is that Endeavour Energy should include further supporting information in its revised tariff structure statement to give stakeholders certainty that its embedded network tariff has been justified. Much of this information has already been provided to the AER in response to our information requests. Specifically, we asked Endeavour Energy to:

- detail its engagement in developing its embedded network tariff, including a timeline and the different stakeholders it consulted to develop its embedded network tariff
- detail how it calculated the 9.5 c/KW additional demand charge and whether it considered alternative tariff structures for embedded networks
- detail the assumptions underpinning its calculations and proposal (for instance, whether it considered different tariffs for residential compared to commercial embedded networks)
- explain the cost on the network of not introducing an embedded network tariff (approximately \$1.4 million).⁶⁹

We seek feedback from stakeholders on any additional analysis or information that Endeavour Energy should include in support of its embedded network tariff.

The amount of residual cost recovery and the level of charges

Endeavour Energy’s proposed embedded network tariff will seek to recover all of the existing implicit cross subsidy - \$1.4 million, which will be redistributed to other customers within the tariff class. Endeavour Energy considers recovering 100% of the implicit cross subsidy is appropriate, and the benefits of embedded networks can be realised by responding to network tariff signals.⁷⁰

We seek stakeholder views on the level of cost recovery under Endeavour Energy’s proposed embedded network tariff. In particular, we seek views on the potential flow on impacts to customers within embedded networks in the event that the embedded network operator business model is undermined. Stakeholders should note too that the NSW Independent Pricing and Regulatory Tribunal (IPART) is undertaking a review of prices charged by embedded network operators for services on-sold to their end customers. There is potential for new price caps to be imposed on those services provided by embedded network operators, which may limit their ability to recover the additional cost of a new embedded network tariff.

⁶⁹ Endeavour Energy - *IR028 - Embedded Network Tariffs* - 20230606 – Public.

⁷⁰ Endeavour Energy - *IR028 - Embedded Network Tariffs* - 20230606 – Public.

Managing customer impacts

Endeavour Energy estimated that embedded network customers will face an average 12% bill increase from facing higher demand charges. It will transition existing embedded networks over 2-years to mitigate bill impacts. New embedded networks will be assigned to the tariff automatically.

We consider that a 12% bill increase over 2 years is appropriate and manageable but invite Endeavour Energy to consider its transition period in response to stakeholder views. Stakeholder feedback sought for the transition to be increased to 5 years like Ausgrid's transition period. We note that the impact to Endeavour Energy's embedded network customers is 60% less than Ausgrid's because Endeavour Energy has fewer embedded networks in its network.

We seek feedback on any other methods of managing customer impacts Endeavour Energy could consider in developing its revised tariff structure statement (other than lowering the proposed capacity charge to recover less revenue, as explained above).

There are ongoing workstreams on embedded networks occurring concurrently

Embedded networks are a point of focus across a number of jurisdictions and agencies at present. This includes:

- the Victorian Government banned new residential embedded networks unless energy consumed is met from renewables, and will continue to enhance consumer protections for customers within existing embedded networks
- as noted above, IPART is currently reviewing appropriate price protections for customers supplied through an embedded network. The review is in response to evidence that customers within embedded networks receive unreasonably high bills and have limited access to retail competition.

19.4.4 Grid-scale battery tariffs

Our draft decision is to approve Endeavour Energy's proposal for grid-scale battery tariffs. We consider that the tariffs send appropriate price signals which improve network utilisation and support CER. We also consider Endeavour's proposed grid-scale tariffs are reasonably capable of being understood by retail customers or being directly incorporated by retailers into retail offers.⁷¹

Endeavour Energy proposed three grid-scale battery tariffs, one each for its low-voltage, high-voltage, and sub-transmission networks. These tariffs are based on seasonal time-of-use energy charges with a demand component for exports.

For the LV tariff, export rewards (levied on a kWh basis) vary depending on the time of day and season except between 10am - 2pm (the solar soak period where imports are free). During the solar soak period an export demand charge applies on the maximum monthly level of exports above 2 kW, the basic export level. The proposed charge and rewards reflect feedback from battery operators on the potential to receive a financial reward without a

⁷¹ NER, cl. 6.18.5(i).

commensurate benefit to the network if Endeavour Energy offered a demand-based export reward instead of one levied on a kWh basis.⁷²

Endeavour Energy did not propose export charges or a solar soak import component for its HV and sub-transmission secondary grid-scale battery tariffs. These tariffs are site-specific. Endeavour did not propose export charges for these tariffs as batteries in these areas were not likely to cause export-related costs.⁷³

Grid-scale batteries have come into focus for the 2024–29 period, in response to the Australian Government program to fund the deployment of 400 community batteries across the country. With the right network price signals to indicate when battery operation drives costs or benefits to the network, grid-scale batteries have the potential to reduce LRMC for all customers by improving network utilisation. Conversely, without such price signals, battery owners may not factor network costs into their decisions on battery operation and may operate batteries in ways that trigger network investment, increasing future network costs to all consumers. Therefore, there is benefit for distributors (and ultimately all consumers) in developing network tariffs to facilitate retail tariffs that encourage battery operators to import energy during periods of low network demand and export energy during periods of peak demand.

Endeavour Energy's proposal to introduce grid-scale battery tariffs is a response to the anticipated increase in grid-scale batteries. Ausgrid, Essential Energy and Evoenergy also responded to this anticipated increase in batteries and have also proposed grid-scale battery tariffs for the 2024–29 period. These proposed tariffs are the first to be offered by NEM distributors that are tailored to large-scale storage. We observe the three NSW distributors and Evoenergy have been preparing for these grid-scale battery tariff proposals with tariff trials conducted between 2021–22 and 2023–24.

The grid-scale battery tariffs proposed by Endeavour Energy align network price signals with network peak constraints. We consider the proposed tariff structures to be efficient and cost reflective because export charges are levied during peak exports (the solar soak period) and the time-of-use import charges are higher during the network's peak demand period.

We consider Endeavour Energy has demonstrated that its proposed charges reflect the efficient costs of the network and will send locational price signals of where investment is needed.

For its LV grid-scale battery tariff Endeavour proposed that its import charges and export charges and rewards be based on marginal cost. Residual costs are recovered through the fixed charge and the variable import charges. For its sub-transmission and HV grid-scale battery tariffs (which does not have both a solar soak component and an export charge) the charges are site-specific, implying locational price signals.⁷⁴

⁷² Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 64.

⁷³ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 65.

⁷⁴ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, pp 63–65.

Endeavour Energy proposed a basic export level of 2 kW for its LV grid-scale battery tariff.⁷⁵ The basic export level is required under the rules for any tariff involving export pricing (charges). The basic export limit is based on the network's intrinsic level of export hosting capacity such that exports up to the basic export limit threshold do not attract an export charge. Endeavour's export charge for its low voltage grid-scale battery tariff only applies to the level of exports that cannot be supported without the need for additional expenditure. In this context there should be no unused intrinsic hosting capacity available to the storage customer, hence we consider the proposed basic export level of 2kW reasonable.

We consider grid-scale battery tariffs will benefit all energy users because they encourage storage to charge during periods of low demand and HV, thereby providing voltage support to the network, helping reduce costs of voltage management. They also encourage export during periods of peak demand, thereby helping to avoid network augmentations. To the extent these costs are avoided we consider the proposed tariffs will benefit all users through lower future bills.

We also note that Endeavour's proposed tariffs are based on learnings from its community battery tariff trial (1 July 2023 to 30 June 2024).

19.4.5 LRMC methodology

The NER requires network tariffs to be based on LRMC.⁷⁶ For consumption services this means a tariff for the import of electricity must be based on the LRMC of providing additional capacity to support the import of electricity from grid to customers assigned to the tariff. For export capacity, this means export charges must be based on the LRMC of providing additional capacity to support / host exports to the grid by the customers assigned to the tariff.

However, not all distributor's costs are forward-looking and responsive to changes in demand for its service. If tariffs only reflected LRMC, a distributor would not recover all of its total efficient costs. Costs not covered by a distributor's LRMC are called 'residual costs'. The NER requires network tariffs to recover a distributor's total efficient costs (i.e., both LRMC and residual costs) in a way that minimises distortions to price signals for efficient usage that would result from tariffs reflecting LRMC.⁷⁷

Importantly, our *Export Tariff Guidelines* and the accompanying explanatory statement, which we published in May 2022, state that distributors should not recover any historical export related network costs incurred. We provided 2 potential dates as to when distributors may start to recover export service costs from export tariffs:

- the date of the access and pricing rule change taking effect
- the first day of a network's upcoming regulatory control period.⁷⁸

⁷⁵ Endeavour Energy, *0.15 Tariff Structure Explanatory Statement - January 2023*, p 64.

⁷⁶ NER, cl. 6.18.5(f).

⁷⁷ NER, cl. 6.18.5(g)(3).

⁷⁸ AER, *Export Tariff Guidelines*, May 2022, p 12.

This additional intervention protects exporting customers from paying network costs incurred prior to the rule change that facilitated two-way pricing, given customers invested in their own rooftop PV without expecting to be charged for their exports.

19.4.5.1 Assessment approach

Our assessment approach is focused on considering Endeavour Energy's overall approach and estimation of LRMC, including the justification of their estimation method and how its method changed compared to the previous tariff structure statement.

An important input into LRMC calculation is the distributor's forecast of long-run expenditure associated with incremental demand in the case of consumption services. For these services forecasts comprise estimates of:

- augmentation expenditure (augex) on new network assets to increase the capacity for import and/or export distribution services
- operating expenditure (opex) dedicated to providing additional capacity for distribution services
- replacement expenditure (repex) to replace existing network assets. Distributors may estimate a proportion of repex which occurs to incremental demand or estimate avoided repex in areas of the network with declining demand (in these areas, distributors may opt to use assets with lower capacity which reduces repex).

For export services, long-run expenditure forecasts are likely to comprise expenditure related to:

- voltage constraints
- thermal constraints
- LV visibility needs.

Distributors might also account for forecast growth in CER customers, including those with rooftop solar, home batteries and/or electric vehicles.

With the introduction of export tariffs, we are also focusing on how distributors have estimated export LRMC in accordance with the expectations we set in the *Export Tariff Guidelines*. This includes demonstrating:

- how any double counting has been avoided in estimating and allocating LRMC between export and consumption services
- that historic costs associated with providing the network's intrinsic hosting capacity have not been included in export LRMC estimates
- how the export charging parameters reflect the efficient export LRMC.

19.4.5.2 Import LRMC

Endeavour Energy continued to implement the average incremental cost approach over a ten-year period to estimate forward looking costs in areas of the network where demand is rising. It did not incorporate avoided repex estimates for areas of the network where demand is stable or falling.

We consider the average incremental cost approach to be appropriate at this stage of tariff reform given its low cost of implementation and the continuation of postage stamp pricing across its network. However, Endeavour has previously included LRMC estimates for areas of the network where demand is stable or falling using avoided repex estimates. Endeavour Energy should reconsider its decision to not include those estimates as this was an area it had innovated on in its previous tariff structure statement proposal.

Evie Networks (with its consultant Marsden Jacob) submitted that the distributors were overestimating LRMC by incorrectly including augex incurred after the five year regulatory period.⁷⁹ We consider that Endeavour Energy has appropriately estimated augex with a horizon of at least ten years to meet our definition of long-run.⁸⁰ As we note in our Victorian draft decision, the distributors' use of the average incremental cost approach and the Turvey perturbation approach to estimate LRMC has been endorsed for use by the AEMC in its review of the network pricing principles.⁸¹

19.4.5.3 Export LRMC

19.4.5.3.1 Setting the export charge

We consider Endeavour Energy's proposed approach to estimate export LRMC reflects the requirements of the NER and the guidance set out in our *Export Tariff Guidelines*.

Endeavour Energy set its export charges based on its LRMC for export services by reference to times of greatest utilisation. Endeavour Energy proposed that this period is defined by the emerging issues of low load and voltage fluctuations caused by increased consumer generated solar PV during the middle of the day. In calculating its export LRMC Endeavour Energy proposed to only recover augmentation expenditure and operating expenditure driven by growth in exports on its LV network. Endeavour Energy did not propose to allocate any replacement expenditure in its calculation of LRMC for its export service.⁸² Endeavour Energy attributed costs to export charges commencing only from the first day of the 2024–29 period and so did not propose to recover any residual or historical costs from the export charge, consistent with the guidance set out in our *Export Tariff Guidelines*.

The key inputs to determining the LRMC of the export charge include the length of estimation period, commencement date of expenditure to support export services, forecast expenditure and the weighted average cost of capital.

Our sensitivity modelling shows that any further changes to proposed forecast expenditure, or changes to the weighted average cost of capital, may result in changes to LRMC estimates and therefore changes also to the level of the export charge.

⁷⁹ Evie Networks, *submission and attachment, 2024-29 Electricity Determination - NSW - May 2023*, p 4.

⁸⁰ See for example, AER - *Ausgrid 2019-24 - Draft decision - Attachment 18 - Tariff structure statement - November 2018*, p 83.

⁸¹ AER, *Draft decision - CitiPower distribution determination 2021-26 - Attachment 19 - Tariff structure statement - September 2020*, pp 42-44.

⁸² *Endeavour Energy, 0.15 Tariff Structure explanatory statement, January 2023*, p 85.

19.4.5.3.2 Setting the export reward

The NER provide less guidance on setting the export reward. Endeavour Energy based its export rewards on its import LRM, noting that its export reward will change based on its seasonal LRM. We note setting the export reward based on the import LRM reflects that additional exports from customers during the peak demand window frees up additional capacity of the network and mitigates the need to invest in additional capacity or potentially defers investment to future years. We consider Endeavour Energy’s proposed approach is logical and complies with the NER and reflects the guidance set out in our *Export Tariff Guidelines* in setting its proposed export rewards.

We note any changes made to export charges, such as may arise from updated LRM estimates, may require rebalancing of the reward paid to customers to avoid cross subsidisation from non-solar PV customers.

19.5 Assignment to tariff classes

Our draft decision is to approve the policies and procedures governing assignment or reassignment of Endeavour Energy retail customers to tariff classes.⁸³ The table below summarises how Endeavour Energy assigns installations to their respective tariff classes. This has not changed from the 2019–24 period.

Tariff class	Customer Type	Connection Characteristics
Small low voltage	Residential and small to medium enterprise businesses	LV Connection (230/400 V) Total electricity consumption or exports, per financial year, is less than 160MWh
Large low voltage	Larger commercial and light industrial	LV Connection (230/400 V) Total electricity consumption or exports, per financial year, is greater than 160MWh
High voltage demand	Industrial	HV Connection (12.7 kV SWER, 11 or 22 kV)
Sub-transmission demand	Industrial	ST Connection (33, 66 or 132 kV)
Inter-distributor transfer demand	Distributors	Distributor transfer
Unmetered Supply	Unmetered	Unmetered

⁸³ NER, cl. 6.12.1(17).

19.6 Statement structure and completeness

Endeavour Energy must include the following elements within its tariff structure statements:

- the tariff classes into which retail customers for direct control services will be divided
- the policies and procedures the distributor will apply for assigning retail customers to tariffs or reassigning retail customers from one tariff to another
- a description of the strategy or strategies the distributor has adopted, taking into account the pricing principle in clause 6.18.5(h), for the introduction of export tariffs including where relevant the period of transition (export tariff transition strategy)
- structures for each proposed tariff
- charging parameters for each proposed tariff
- a description of the approach that the distributor will take in setting each tariff in each pricing proposal.⁸⁴

A distributor's tariff structure statement must be accompanied by an indicative pricing schedule.⁸⁵

Endeavour Energy's proposed tariff structure statement incorporates each of the elements required under the NER. The key focus of our assessment for this draft decision is on whether these elements satisfy the pricing principles for direct control services in the NER. That assessment is covered in the sections above.

Endeavour Energy has adopted our preferred "two document" approach, intended to improve the clarity for the retailers, customers, and the AER:

- The first document should include only include the aspects of the tariff structure statement that will bind it over the 2024–29 period
- The second document should explain the reasons for what it has proposed.⁸⁶

⁸⁴ NER, cl. 6.18.1A(a).

⁸⁵ NER, cl. 6.8.2(d1).

⁸⁶ NER, cl. 6.18.5(i).

Shortened forms

Term	Definition
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CER	consumer energy resources
CPI	consumer price index
HV	high voltage
LRMC	long-run marginal cost
LV	low voltage
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PV	photovoltaic
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RIN	regulatory information notice
