

Draft Decision

Essential 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 Essential 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 (EVs) is ramping up in all jurisdictions, requiring distributors to consider how to encourage charging of EVs 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 EV charging.

Smart meters are essential for the application of most cost-reflective network tariffs. The percentage of residential customers with smart meters on Essential Energy's network has increased from 5.36% in 2018 to 29.48% 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 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 into or out of particular 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' consumer 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 consumer 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 consumers' real experience, it is the retailer's role to develop and communicate retail tariffs that are appealing and understandable to consumers, 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.

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).

19.1 Draft decision

Our draft decision is to not approve Essential Energy’s proposed 2024–29 tariff structure statement, as we are not satisfied that all elements comply with the pricing 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. For example, we consider that Essential’s Energy proposal includes tariffs with strong cost reflective price signals and assignment policies that balance advancing reform against appropriate transitional mechanisms to manage adverse customer impacts.

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

- tariff assignment and structures for residential and small business customers, including the proposed time-of-use and demand tariffs, (noting Essential Energy has indicated to AER staff it will propose further changes in its revised tariff structure statement, detailed below)
- tariff assignment and tariff structures for low voltage and high voltage³ commercial customers
- the introduction of network tariffs for utility scale storage (grid-scale batteries) connected to the LV distribution network
- the contingent tariff adjustment to extend the peak charging window
- the policies and procedures for assigning retail customers to tariff classes, or reassigning retail customers from one tariff class to another
- new export reward tariffs for residential and small business customers and large LV businesses.⁴

We are not approving the following elements of Essential Energy’s tariff structure statement, as we are not satisfied that these elements comply with and contribute to the pricing principles and other applicable requirements of the NER, based on the information available:

- the appropriate rebate amount for grid-scale batteries connected to the HV network
- the approach to setting individually calculated tariffs and the charging parameters that apply to individually calculated tariffs.

We also encourage Essential Energy to provide the following information in its revised proposal to make further improvements to its tariff structure statement:

- clarifying information on its contingent tariff adjustment to state that the total length of the peak charging window would not increase if the contingent adjustment is required

³ LV = low voltage; HV = high voltage.

⁴ For large LV businesses, from 1 July 2028 or the pricing year immediately following Essential Energy establishing its new billing process capabilities.

- supporting information on the further change to its assignment policy that it communicated to AER staff after submission of the proposed tariff structure statement (to assign residential and small business customers with new and replacement smart meters in 2024 to the new sun-soaker tariff, with zero export charges until 30 June 2025)⁵
- supplementing existing customer impact modelling with additional modelling on the impact of residential and small business customers moving to the new sun-soaker two-way tariff (Essential Energy provided this information to us via an information request)⁶
- including customer impact modelling demonstrating the impact on LV large businesses customers moving to export pricing
- fact sheets and worked examples of how the proposed export rewards and export charges (two-way prices) will apply in practice
- consider expressing its basic export level and export charge in kWh rather than kW in its revised proposal⁷
- information on how Essential 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)⁸
- in recognition of the potential rapid uptake in EV load we encourage Essential 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).

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.⁹ We will work with Essential Energy to include this common methodology in its revised tariff structure statement.

19.2 Essential Energy's proposal

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

- introducing two-way charging components (export rewards and charges) to:

⁵ This change has not been consulted on and will be included in Essential Energy's revised tariff structure statement. We approve other aspects of Essential Energy's residential and small business assignment policy.

⁶ Essential Energy – *IR#011 Customer Impacts – 20230324 – Public*.

⁷ kWh = kilowatt hours; kW = kilowatts.

⁸ Essential Energy - *IR023 Network concessions for Green Hydrogen Producers - 20230511 – Public*.

⁹ 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.

- its new sun-soaker tariff for residential and small businesses customers, to be the default for all customers from 1 July 2025
- to its existing residential and small business demand tariff from 1 July 2028 or earlier
- improving the cost reflectivity of price signals in residential and small business tariffs by
 - removing the shoulder period in its new sun-soaker two-way time-of-use tariff to facilitate retail tariffs that encourage and reward customers to shift network use overnight (10pm – 7am) and during the day when there is high solar generation (10am – 3pm)
 - extending the number of days per week that the peak charging window applies from five to seven (i.e. to also include the peak charging window on weekends) for its new sun-soaker tariff
 - having the option (under a contingent tariff adjustment) to move its time-of-use charging windows to later in the day if network-wide peak consumption shifts outside of the current peak charging window
- strengthening its tariff assignment policy for residential and small business customers by:
 - only allowing customers on accumulation meters the option to remain on a flat tariff
 - including a long-term plan to move all existing customers with smart meters to the new sun-soaker tariff
- changing the switching times for controlled load devices to allow controlled electrical appliances to use energy during the daytime, when solar customers are exporting to the grid:
 - controlled load 1 would be available for between 5 and 9 hours on weekdays and extra hours on the weekend
 - controlled load 2 would be available between 10 and 18 hours a day on weekdays and extra hours at weekends
- largely maintaining its demand tariffs and assignment policies for large LV, HV and sub-transmission customers
- including two-way charges to LV commercial customers from 2028 or earlier depending on upgrades to Essential Energy’s billing system
- introducing 2 grid-scale battery two-way tariffs for batteries connected at the HV and LV network which include time-of-use energy and demand charges for imports, an export reward during the peak import period (5pm – 8pm) and a maximum monthly export capacity charge between 10am – 3pm.

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.¹⁰ A tariff structure statement must also comply with the distribution pricing principles.¹¹

19.3.1 What must a tariff structure statement contain?

The NER require a tariff structure statement to include:

- the tariff classes into which retail customers for direct control services will be divided
- 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
- 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.¹²

A distributor's tariff structure statement must be accompanied by an indicative pricing schedule.¹³

19.3.2 What must a tariff structure statement comply with?

The NER require distributors to demonstrate to us how their proposed tariff structure statement complies with the distribution pricing principles.¹⁴

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

¹⁰ NER, cl. 6.18.1A(a).

¹¹ NER, cl. 6.8.2 (d2) and cl. 6.18.1A(b).

¹² NER, cl. 6.18.1A(a).

¹³ NER, cl. 6.8.2(d1) and NER, cl. 6.18.1A(e).

¹⁴ NER, cl. 6.18.5 and NER, cl. 6.8.2(c)(7).

- 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

Essential Energy participated in the voluntary Early Signal Pathway provided for in our 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 Essential 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 first time.^{15,16} We will assess any two-way pricing proposals with regard to the guidance we provided in our *Export Tariff Guidelines*.¹⁷

19.3.4 How tariff structure statements relate to the 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. A distributor's proposed pricing levels must be consistent with the corresponding indicative pricing levels for the relevant regulatory year as

¹⁵ 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.

¹⁶ 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 NER 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.

¹⁷ AER, *Export Tariff Guidelines*, May 2022.

set out in the relevant indicative pricing schedule, or the distributor must explain any material differences between them.¹⁸

19.4 Reasons for draft decision

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

In line with our Handbook we consider Essential Energy demonstrated:

- progress on tariff reform consistent with the network pricing objective and pricing principles through assignment policies designed to move more customers to cost reflective tariffs and proposed new cost reflective tariffs to address emerging demands on its network
- incorporation of its tariff strategy in its overall business plan by explaining how its tariff strategy is integrated with its network planning, demand management and distributed energy resources integration strategy
- significant stakeholder engagement and broad stakeholder support through extensive engagement on tariffs and responding to customer feedback in developing its proposed tariff structure statement
- insight into customer impacts through modelling of customer impacts and design of new cost reflective tariffs that avoids creating adverse customer impacts.

We consider the following elements need further analysis and consultation before we can be satisfied they comply with the distribution pricing principles and the NER:

- the appropriate rebate amount for grid-scale batteries connected to the HV network, on which Essential Energy is still consulting
- clarity around individually calculated tariffs, including how customers are assigned to these tariffs and the types of charges these customers might face.

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 Essential Energy’s proposal for residential and small business customers because:

¹⁸ NER, cl. 6.18.2(b)(7A).

- 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 tariffs signal to retailers the network benefits of customers using excess solar generation
- tariff structures reflect network constraints and use of the electricity grid
- the tariffs send price signals to customers, via their retailers, to discourage the development of new demand peaks from EV charging
- the tariff structures are reasonably capable of being directly or indirectly incorporated by retailers or aggregators into retail offers
- assignment policies increase exposure of retailers to cost reflective network tariffs while managing adverse impacts to customers.

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

Over the past two years we observed much of Essential Energy’s engagement on its tariff strategy with customers and other stakeholders, including through workshops, roundtables and other forums. This has given us a deeper insight into how Essential Energy engages with its stakeholders, how it considered and incorporated feedback into its tariff strategy and how it built stakeholder knowledge and improved their capacity to meaningfully engage.

We consider Essential Energy conducted quality stakeholder engagement and has broad stakeholder support on its small customer tariff plans.

Customer engagement in tariff structure development is an important consideration for our assessment. This is becoming increasingly important with the potential acceleration of the smart meter rollout and a rapidly changing energy sector.¹⁹ 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 successful 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.²⁰ We expect that distributors 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.

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.²¹ It observed that, even with the best intent to engage in good faith shown by distributors,

¹⁹ AEMC, *Review of the regulatory framework for metering services, 2020*.

²⁰ NER cl 6.18.5(i).

²¹ Public Interest Advocacy Centre, *Issues Paper 2024–29 Revenue Determinations: Ausgrid, Endeavour, and Essential Energy*, 1 June 2023, p 18.

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.²²

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>

We note Essential Energy’s extensive engagement with its stakeholders guided and informed it in developing its tariff strategy and tariff structure statement for the 2024–29 period. Key outcomes from this engagement include:

- the new sun-soaker two-way tariff reflects results from a two-way pricing tariff trial, with modest export charges and higher rewards, in line with customer preference²³
- simple tariff structures, for instances its sun-soaker tariff only has two charging windows, peak and off-peak, to encourage better retail and customer response to cost reflective price signals
- introducing an ‘education only’ trial to test how network tariff education can trigger behavioural change²⁴
- proposing a long-term assignment policy, to shift customers to the two-way tariff overtime until all customers with smart meters will be moved onto it by 2028.

We commend Essential Energy for its efforts to build stakeholder understanding and capacity to engage meaningfully in the tariff design process and for responding to stakeholder expectations and preferences expressed through its engagement.

²² Public Interest Advocacy Centre, *Issues Paper 2024–29 Revenue Determinations: Ausgrid, Endeavour, and Essential Energy*, 1 June 2023, p 18.

²³ Essential Energy, *12.01 Tariff Structure Statement*, January 2023, p 33.

²⁴ Results from this trial will be included in Essential Energy’s revised tariff structure statement proposal.

19.4.1.2 Consumption charging windows align with demand peaks and troughs

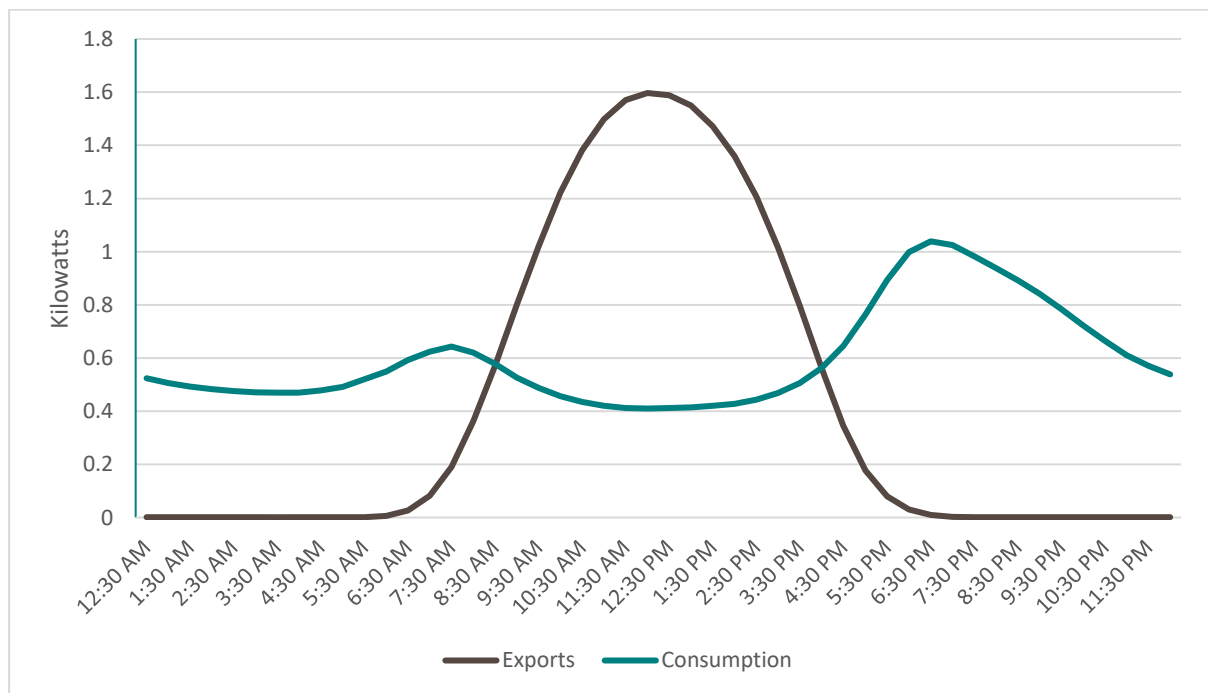
Our draft decision is to approve Essential Energy’s tariff structures for its residential and small business customers. We consider Essential Energy’s proposed suite of tariffs align with customers’ load profiles and are cost reflective. We anticipate these network tariffs will facilitate retail tariffs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

Essential Energy’s new, time-of-use solar soak tariff with export charges removes the shoulder period in Essential Energy’s existing time-of-use tariff to encourage customers to shift their energy use to overnight (10pm – 7am) and during the day when there is high solar generation (10am – 3pm). It has also extended the number of days that the peak charging window applies from 5 to 7 days so it also applies on weekends. This new tariff better reflects minimum demand pressures in the network as well as the evening peak demand, and reflects outcomes from Essential Energy’s two-way tariff trial.

Origin Energy considered consistency should be promoted across the distributors on elements such as peak and off-peak periods.²⁵ We understand the potential benefits of consistency to retailers for developing and communicating products to their customers. While charging windows are developed by distributors to reflect the specific constraints on their individual networks, we encourage distributors to look for opportunities for consistency across networks where this is consistent with network needs.

The blue line in figure 19.1 below shows how Essential Energy’s charging windows reflect consumption and export usage.

Figure 19.1: Essential Energy’s consumption and export charging windows



²⁵ Origin Energy - Submission - 2024–29 Electricity Determination - NSW and ACT - May 2023.

Source: Essential Energy | 7.01 DER Integration Strategy 2024–29 | Jan 2023 p 10

Essential Energy also noted that demand varies across its network with some areas exhibiting common winter and summer peak periods while others do not. As such, Essential Energy proposed to not apply seasonality to its tariffs, with 62% stakeholder support.²⁶ We consider Essential Energy provided sufficient information to support not applying seasonal components to its tariffs.

Essential Energy did not make changes to the charging windows for its existing tariffs (time-of-use basic, time-of-use interval/smart meter and time-of-use demand component). Basic meters with time-of-use capability and Type 5 meters cannot be cost-effectively reprogrammed, so they still record a morning peak between 7am – 9am on weekdays.

Given the pace of smart meter roll out acceleration, Essential Energy expects that customers on these tariffs will be moved to smart meters and the new two-way tariff before the end of the 2024–29 period, so it is not prudent to alter the charging windows for these tariffs at this time. We consider this appropriate, given that Essential Energy will phase out its time-of-use interval tariff by 2028 and that its anytime flat and basic time-of-use tariff will only be accessible to customers with accumulation meters.

19.4.1.3 Controlled load tariffs

Essential Energy also proposed to adjust its optional, secondary controlled load tariffs to allow for supply during the day and not just overnight, to facilitate retail tariffs that encourage energy use during the day. Controlled load tariffs are available 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.

We consider Essential Energy's proposal to extend supply to during the day will better manage system demand peaks and help to 'soak up' some of the excess solar export energy and reduce the impact of minimum demand on the LV network. Under this new approach:

- controlled load 1 would be available for between 5 and 9 hours on weekdays and extra hours on weekends
- controlled load 2 would be available between 10 and 18 hours a day on weekdays and extra hours at weekends.

We consider Essential Energy could include more information in its revised tariff structure statement proposal around how these tariffs could target flexible load such as EVs. This is discussed further under the headline '*Tariff structures respond to energy sector developments.*'

²⁶ Essential Energy - 12.02 Tariff Structure Explanatory Statement – January 2023, p 20.

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

We assessed Essential Energy's tariff assignment policies against the network pricing objective and the pricing principles including the impact of change to its customers.²⁷ 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.

Essential Energy informed us via email of a further change it proposes to make to its revised tariff structure statement, following stakeholder feedback. We seek stakeholder feedback on whether this additional shift, described below, is appropriate. We will consider stakeholder feedback and further supporting information Essential Energy submits in its revised tariff structure statement in making our final decision.

We accept other aspects of Essential Energy's tariff assignment approach. It supports strong progress on tariff reform by moving all customers with smart meters to its default sun-soaker two-way tariff by 2028 or earlier, depending on its billing systems. These customers will continue to have a choice of cost reflective network tariffs (time-of-use or demand consumption tariffs) but will no longer be able to opt-out to a flat tariff.

Essential Energy originally proposed to move existing customers whose meters are replaced in 2024 to its existing time-of-use tariff, which will be phased out by the end of the 2024–29 period. These customers would then be assigned to the new, sun-soaker two-way tariff. Customers whose meters are replaced in 2025 or later would be assigned to its new sun-soaker two-way tariff.

The proposed further change to its revised proposal is that customers with new and replacement smart meters in 2024 would be assigned to the new sun-soaker tariff, rather than the existing time-of-use tariff, which will become obsolete in the 2024–29 period. The purpose of this is to mitigate the possible negative bill impact of customers being assigned to the legacy time-of-use tariff in 2024 and subsequently being assigned to the sun-soaker tariff later in the 2024–29 period. Under the proposed further change, and in line with the NER, these customers would have zero export charges or rewards until 2025 but would face the new sun-soaker tariff consumption charges.²⁸ While we support this addition, we invite stakeholder feedback on this proposed change, which we anticipate Essential Energy will include in its revised tariff structure statement and that we will consider in our final decision.

Essential Energy's modelling demonstrated that almost all residential customers (>99%) and most small business customers (~61%) will benefit by moving from Essential Energy's flat

²⁷ 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.

²⁸ Existing customers cannot be mandatorily assigned to two-way tariffs before 30 June 2025, NER, cl. 11.141.11.

tariff to its new default export reward, sun-soaker tariff.²⁹ Additional modelling Essential Energy provided to us via information requests demonstrated that most residential and small business customers will also benefit from moving from Essential Energy's current time-of-use tariff to its new default export reward tariff:

- for residential customers: 86% of customers without solar and 62% of customers with solar will benefit from this shift
- for small business customers: 98% of customers without solar and 81.5% with solar.³⁰

We request that Essential Energy include this additional analysis in its revised proposal.

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. Essential Energy's tariff structure statement does not include a transition period or lag, or transitional tariffs, given that most customers will be better off from moving to the new sun-soaker two-way tariff. This assignment policy aligns with retailer preference to avoid too many network tariff changes for consumers within a regulatory period. For instance, Red Energy and Lumo Energy submitted that there is no need to implement a 24-month transitional period as Essential Energy's default tariff is sufficiently simple.³¹ Essential Energy will continue to engage with its customers on whether to include a 12-month grace period in its revised tariff structure statement.

19.4.1.5 Tariff structures respond to energy sector developments

19.4.1.5.1 Tariff structures respond to 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, Essential Energy anticipates EV uptake will accelerate noticeably from the end of the 2024–29 period.³²

Our draft decision on tariffs for EV charge point operators is explained below under the section labelled *Demand tariffs are appropriate for large businesses*.

Essential 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

²⁹ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 54.

³⁰ Essential Energy – *IR#011 Customer Impacts – 20230324 – Public*.

³¹ Red Energy and Lumo - *Submission - 2024–29 Electricity Determination - NSW - May 2023*, p 6.

³² Evoenergy is the exception and will see EV uptake accelerate earlier in the ACT than in Essential Energy's network since the ACT is leading other States on EV uptake rates.

customers with a similar connection and usage profile be treated equally.³³ 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.³⁴ Rather, we support the continued implementation of cost-reflective tariffs for EVs.

Essential Energy's new default solar soak tariff can facilitate retail tariffs that 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. At the same time, its strengthened assignment policy, which removes the ability of customers with smart meters to opt-out of cost reflective tariffs, and the anticipated acceleration of smart meter roll out will see more EV owners assigned to cost reflective network tariffs in the 2024–29 period. We consider the combination of cost reflective tariffs, assignment policy and higher prevalence of smart meters will facilitate retail offers that encourage more customers to shift their EV charging outside of the evening peak demand period.

In the future, Essential 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.

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

As discussed above, we approve Essential Energy's proposal to modify its current controlled load tariffs to also allow for energy supply during the day in addition to overnight. This will allow controlled load tariffs to continue to help manage demand peaks and help 'soak up' some of the excess solar energy available in the middle of the day. This recognises that the proposed control load tariffs can help manage charging load.

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. In recognition of the uncertainty surrounding forecast EV load, and to better manage this load, we also encourage Essential Energy explore the feasibility of developing a new opt-in controlled load tariff targeting flexible load for inclusion in its revised proposal.

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.

³³ NER, cl. 6.18.4(a)(2).

³⁴ AER – Final Decision – *CitiPower distribution determination 2021-26* – Attachment 19 Tariff structure Statement – Appendix C, p 40.

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.³⁵ While this risk may be lower in Essential Energy's distribution area than in Evoenergy's, reflecting slower EV uptake in NSW compared to the ACT, Essential 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.

We note that Essential Energy has existing controlled load tariffs that comply with pricing principles and may also deliver or partly deliver on our recommendation. Essential 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 Essential Energy to provide further information on this in its revised tariff structure statement proposal.

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

19.4.1.5.3 Tariff structures respond to 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 EVs. To be flexible in response to the potential step changes in load that may result from rapid but unpredictable uptake, some distributors, including Essential 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 Essential Energy's proposed contingent tariff adjustment and trigger event. We encourage Essential Energy to include some further information in support of its contingent tariff adjustment to ensure it is sufficiently clear and transparent. Essential Energy proposed a contingent tariff adjustment to adapt its time-of-use charging windows for its new sun-soaker tariff if network-wide peak consumption shifts outside of the current peak charging window (3pm – 10pm for sun-soaker tariff).

Our initial view was that the contingent tariff adjustment is not sufficiently clear. In post-submission exchanges with AER staff, Essential Energy agreed that the total length of the peak charging window would not increase if the contingent adjustment is required.³⁶ Before adjusting time-of-use windows, Essential Energy will consult its Peoples' Panel on the need to adjust windows and the proposed approach. On the basis that Essential Energy includes

³⁵ 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).

³⁶ Essential Energy - *IR013 Contingent tariff adjustment* – 20230406 – Public.

this further qualifying material in its revised tariff structure statement, we consider it is capable of acceptance.

Some stakeholders raised concerns over the concept of contingent tariff adjustment. Origin Energy submitted that contingent tariffs introduce unnecessary complexity.³⁷ Red Energy submitted that changing peak charging windows within a regulatory period would be confusing for consumers and difficult for retailers.³⁸ PIAC does not support moving the peak window past 9pm but considers that an EV-specific tariff would be a more appropriate measure to manage EV charging load.³⁹

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 Essential Energy's proposal provides this transparency.

19.4.2 Two-way tariffs

Our draft decision is to approve Essential Energy's proposed export reward tariff.⁴⁰ Essential Energy's export reward tariff incorporates the customer protections required by the NER,⁴¹ 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 strategy⁴²
- provision that existing solar PV customers will not face export tariffs until 1 July 2025 unless they elect to participate earlier.⁴³

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

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

³⁷ Origin Energy – Submission – 2024–29 Electricity Determination – NSW and ACT – May 2023, p 6.

³⁸ Red Energy and Lumo - Submission - 2024–29 Electricity Determination - NSW - May 2023, p 3.

³⁹ PIAC - Submission - 2024–29 Electricity Determination - NSW - June 2023, p 20.

⁴⁰ 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.

⁴¹ NER, cl. 11.141.12; NER, cl. 11.141.13; NER, cl. 6.18.1A(a)(2A); NER, cl. 11.141.11.

⁴² 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.

⁴³ 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.

- applying two-way pricing to all LV connected customers, including large business customers⁴⁴
- setting its proposed export reward symmetric to the equivalent peak consumption tariff.⁴⁵

We consider Essential Energy 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 *Export Tariff Guidelines* and complies with the distribution pricing principles as required by the NER.^{46, 47}

Essential Energy's proposed export reward tariff will allow retailers and their customers to access payments from Essential 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, Essential Energy estimated that its proposed two-way pricing will result in \$375,888 less distribution revenue recovered from non-solar customers during the 2024–29 period than would be the case without its proposed two-way pricing⁴⁸
- 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 pressures for both import and export capacity and keep future costs (future bills) lower (to the extent augmentation expenditure is avoided) for all electricity users.

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

19.4.2.1 Essential Energy proposed export reward tariff

Essential Energy's export reward tariff combines its sun-soaker tariff with its proposed export reward and charge. Essential Energy refers to its export reward tariff as its sun-soaker two-way tariff.

Essential Energy's proposed sun-soaker two-way tariff includes several features which differ to the two-way pricing proposed by the other NSW and ACT distributors. These features include:

- an export charge with two inclining pricing bands applying to exports exceeding the basic export level of 1.5kW. The band 1 charge applies to exports between 1.5kW and the band 2 charge applies to exports over 3kW. This differs to the approach adopted by

⁴⁴ Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, pp 37-38.

⁴⁵ Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, p 39.

⁴⁶ 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.

⁴⁷ See NER, cl. 6.18.5.

⁴⁸ Essential Energy – *IR#011 Customer Impacts* – 20230628 – Public.

the other three distributors to charge just one price for all exports above the basic export level

- a different export reward for residential and small business customers. Essential Energy’s proposed export reward is equivalent to the applicable consumption charge for imports of electricity (which reflects both LRMC and residual and historical costs for the import of electricity). This differs to the other distributors’ approaches, which proposed the same export reward for both their residential and small business customers, basing it on the consumption LRMC alone (with no residual or historical costs for the import of electricity included)
- two-way prices which apply to all large business LV customers, in addition to grid-scale batteries.⁴⁹

Essential Energy’s proposed two-way prices for residential and small business customers is summarised in the table below. The proposed two-way pricing for large commercial customers and grid-scale battery customers is discussed under *Medium and Large customers*.

Table 19.1: Summary of Essential Energy’s proposed sun-soaker two-way tariff for residential and small business customers

Assignment	Basic export level ⁵⁰	Export rewards	Export charge
From 1 July 2024 opt-in for existing customers with a smart meter. Default assignment for new greenfield residential and small business connections	The basic export level of 1.5 kW will attract no export charge between 10am – 3pm daily	Residential Export reward applies between 5pm – 8pm: 13.67c/kWh	Export charge is based on three pricing bands: 0-1.5kW free basic export limit, no charge
From 1 July 2025 default assignment for residential and small business customers altering a meter connection or connecting CER	Export charge applies to maximum kW’s above 1.5kW during the 10am – 3pm peak period in the month	Small business export reward applies between 5pm – 8pm: 14.282 c/kWh	Band 1 1.5–3.0kW; 0.8145 c/kVA ⁵¹ Band 2 > 3kW; 0.9365 c/kVA
From 1 July 2028 all existing low voltage customers with an interval	No export charges at all between 3pm – 10am daily (that is, 19 hours a day)		

⁴⁹ Essential Energy found that some of its large business LV customers who don’t operate their loads on weekends, can still drive export-related costs on those days. Essential Energy’s analysis also found large business LV customers exported significant shares of their total annual exports in the 10am – 3pm window (an average of 72% of their exports). See p 35 of Essential Energy’s tariff structure explanatory statement.

⁵⁰ 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 – 3pm). At all other times customers are not charged for their exports to the grid. During the export reward period (5pm – 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.

⁵¹ kVA = kilo volt amperes.

or smart meter will be assigned			
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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).⁵² 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 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

⁵² <https://arena.gov.au/knowledge-innovation/distributed-energy-integration-program/access-and-pricing-workstream/>.

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.⁵³ 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 regulatory control 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 regulatory 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.

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 Essential Energy's network from 5pm – 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

⁵³ AER, *Export Tariff Guidelines*, May 2022, p 12.

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 – 3pm.

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 5c/kWh to 17c/kWh and in NSW the current feed-in tariffs range from 6c/kWh to 16c/kWh depending on the retailer.^{54,55} So under Essential 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 many customers will benefit from the proposed export reward tariffs, especially during summer months when more solar is exported into the late afternoon.⁵⁶ 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).⁵⁷

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

⁵⁴ <https://www.solarquotes.com.au/systems/feed-in-tariffs/act/>.

⁵⁵ <https://www.solarchoice.net.au/research-solar/solar-feed-in-rewards/>.

⁵⁶ This is based on the assumption that retailers will pass these structures directly onto their retail customers.

⁵⁷ 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).

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 consumers 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 Essential Energy’s export reward tariff

Essential Energy provided, with its tariff structure statement, analysis which demonstrated its network is changing with the typical daily profiles of its customers’ energy demands increasingly presenting two distinct cost drivers:

- peak demand, which occurs at times when all customers are drawing the most energy from our network
- peak export, which occurs at times when the energy exported by customers in certain parts of the network exceeds the customer demand to draw that energy from the network in those areas.⁵⁸

Essential Energy submitted that analysis on its current and forecast network hosting capacity and different constraint and curtailment scenarios found that:

- for the 2024–29 period, a focus on the efficient management of uncontrolled generation at the consumer level is critical to ensuring Essential Energy can meet technical standards around voltage, safety and performance
- the forecast scale of CER deployment and its dramatic impact on energy consumer load shapes highlight the importance of focusing on a range of tools and approaches to influencing end consumer demand profiles to shift energy consumption patterns.⁵⁹

Essential Energy proposed there are several ways it can manage the challenges facing its network, including new investment, changes to operations, and through innovative tariffs such as two-way prices. It also considered that using prices to inform customers’ electricity usage and export timing decisions will be cheaper than increasing investment in its network.

We received submissions from stakeholders, including from Solar Citizens and 455 submissions from Solar Citizens’ supporters, arguing that two-way pricing is not required, and distributors have not justified the need for two-way pricing in their proposals.⁶⁰ Further,

⁵⁸ Essential Energy – *11.01 Customer number, energy consumption and demand forecasts – Frontier – May 2022*.

⁵⁹ Essential Energy - *12.02 Tariff Structure Explanatory Statement – January 2023*, p 36.

⁶⁰ 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.

PIAC submitted support for the proposed export reward tariffs but noted that justification of two-way pricing could be further developed.⁶¹

In response to those submissions, we consider Essential 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.

By introducing two-way pricing for export services, Essential Energy can reward customers who own CER for sending power to the network when needed and charge them for sending power when doing so would cause a strain on the electricity grid. Essential Energy submitted that it considers this will provide significant benefits to all its customers by helping to lessen overall costs and prices, and ensure customers pay fairly for using the network.⁶²

We consider if retailers respond to price signals through retail offers that reflect Essential Energy's proposed two-way pricing, this will help address the widening misalignment between peak network demand in the evening and peak solar generation during the middle of the day. We note too that Essential Energy's customers are more likely to respond to price signals if those signals are consistent and apply for a reasonable period. 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 wrong assumptions about future costs. Earlier response by customers with CER 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 Essential Energy's proposed export reward tariff complies with the pricing principles that tariffs must reflect efficient costs, minimise distortions to price signals and consider customer impact.⁶³ Essential Energy's proposed export reward tariff is also consistent with the aim of the AEMC's rule change for the costs associated with the growth of CER to be distributed equitably.⁶⁴

19.4.2.5 Essential Energy's export reward tariff reflects efficient costs

Essential Energy's proposed export charge recovers only Essential Energy's LRMC of providing additional (incremental) export capacity.⁶⁵ Essential Energy set its export charges based on its estimate of the LRMC of providing peak export services by voltage level. The

⁶¹ PIAC - *Submission - 2024-29 Electricity Determination - NSW* - June 2023, p 9.

⁶² Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, p 36.

⁶³ NER, cl. 6.18.5(f),(g), (h) and NER, cl. 6.12.3(k).

⁶⁴ AEMC, Rule determination – *National electricity amendment (access, pricing and incentive arrangements for distributed energy resources) rule 2021*.

⁶⁵ 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.

band 1 export charge is based on the LV and HV LRMC and the band 2 export charge is based on the LV, HV and sub-transmission LRMC.⁶⁶ Essential Energy found that:

- customers exporting <3 kW have less impact on its network and are more likely to export volumes of energy that only distribute within its low-voltage and high-voltage systems. Accordingly, Essential Energy proposed to set the band 1 charge at the LV and HV LRMCs for peak exports
- customers exporting >3 kW export larger volumes of energy into its system increasingly result in two-way energy flows into higher voltages of its network system. Accordingly, Essential Energy proposed all voltage level LRMCs in its band 2 export charge.⁶⁷

Essential 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 regulatory period.⁶⁸ This approach reflects the guidance set out in our *Export Tariff Guidelines*, which sets out that the costs incurred by distributors to provide their network's intrinsic hosting capacity (historical costs) should not be recovered through export charges.⁶⁹ 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.

Essential Energy proposed to set its export reward at the same level of its peak consumption charge (residential export reward – 13.67 c/kWh; small business export reward – 14.282 c/kWh). That is, the reward is the negative value of the peak energy charge. Essential Energy considered a symmetrical tariff was simple to explain and would be perceived as fair.⁷⁰ In setting the export reward symmetrical to the consumption charge Essential Energy considered the materiality that the level of the reward also reflected the recovery of residual/historical costs for the import of energy. Essential Energy concluded this to be an immaterial amount relative to the expected benefits of having a simple message of an export reward symmetric to the peak consumption charge. Essential considered this approach would support retailer uptake and customer response.⁷¹

Essential Energy's proposed export reward and charge windows reflect its peak demand and peak export times when the costs to support demand and exports are highest. The export reward window of 5pm – 8pm aligns with peak system load periods in the later afternoon and early evening. The export charge window (10am – 3pm) 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).

⁶⁶ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 34.

⁶⁷ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 13.

⁶⁸ Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, p 38.

⁶⁹ AER, *Export Tariff Guidelines*, May 2022, p 12.

⁷⁰ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 34.

⁷¹ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 34.

We consider Essential Energy’s proposed approach to set its export charge and reward and the timing of when the export charge and export reward apply demonstrate compliance with the NER and our *Export Tariff Guidelines*.

19.4.2.6 Essential 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*, Essential Energy considered the following key inputs:

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

To set its basic export level, Essential Energy modelled the capacity of its distribution network taking into consideration expected demand for export services to determine the extent it required minimal or no further investment with regard to its network’s intrinsic hosting capacity for the most constrained sections of the network. Essential Energy found a large proportion of customers (17%) have zero export capacity, indicating the network would operate outside limits prior to any export. Overall Essential Energy found 70% of customers have hosting capacity of 5 kW or less, and 30% of customers have a constraint of 1.5 kW or less.⁷² Essential concluded that a universal 1.5 kW basic export level reflects a balance of efficiency (i.e. no customer will be receiving a basic export level that is above Essential’s avoidable cost of providing export services).

Essential Energy further considered its approach for a universal basic export level will support:

- simplicity and understandability for its customers and for retailers
- fairness in the export tariff transition – a customer faces the same basic export limit regardless of when they are assigned to an export tariff
- equality in network access – Essential Energy identified a basic export level that can be available to any customer on its network, consistent with customer preference for postage stamp pricing.⁷³

We consider Essential Energy’s methodology to determine its basic export level is consistent with the guidance provided in our *Export Tariff Guidelines*. However, we note Essential Energy’s basic export level is expressed as kW and the export charge is per unit of kW. We received feedback from retailers in bilateral meetings that an energy based basic export level and export charge expressed in kWh is easier for customers and retailers to understand. Further, 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.⁷⁴ We encourage Essential Energy to consider expressing its basic export level and export charge in kWh in its revised proposal.

⁷² Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, p 48.

⁷³ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 18.

⁷⁴ 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.

19.4.2.7 Essential Energy’s export reward tariff considers the impact on customers of changes in tariffs

Essential Energy’s customer impact analysis demonstrated the price impacts of its proposed two-way pricing on end-use customers are moderate. Assuming retailers pass on Essential Energy’s export reward tariff as proposed to us, Essential Energy’s modelling demonstrated that almost all residential customers (>99%) and most small business customers will benefit from being moved from Essential Energy’s flat network tariff to its new default export reward, sun-soaker tariff.⁷⁵ Essential Energy’s estimated effect on bills of customers moving from one tariff to another in 2024–25 is summarised below.

Table 19.2: The estimated effect on residential customers bills of moving from existing tariffs to the new export reward sun soaker tariff in 2024–25

Annual consumption		2 MWh ⁷⁶	2 MWh	5 MWh
Size of solar system (max. export)		0 kW	2.9 kW	6.5 kW
		No solar	Average solar	High solar
From Anytime (accumulation meter customers)	\$ annual	-66	-48	-164
	% on retail	-4.6%	-3.4%	-6.4%
From TOU (interval/smart meter customers)	\$ annual	-6	11	29
	% on retail	-0.5%	0.9%	1.4%

Table 19.3: The estimated effect on small business customers bills of moving from existing tariffs to the new export reward sun soaker tariff in 2024–25

Annual consumption		5 MWh	5 MWh	20 MWh
Size of solar system (max. export)		0 kW	7.9 kW	10 kW
		No solar	Average solar	High solar
From Anytime (accumulation meter customers)	\$ annual	-60	-30	-1,051
	% on retail	-2.2%	-1.1%	-12.8%
From TOU (interval/smart meter customers)	\$ annual	-23	50	15
	% on retail	-0.9%	2.0%	0.3%

Source: Essential Energy – 12.01 Tariff Structure Statement – January 2023 – p 54.

We note, customers with larger systems who are more likely to put pressure on electricity networks through excess exports at peak export times are most likely to see an increase in

⁷⁵ Essential Energy – 12.01 Tariff Structure Statement, January 2023, p 54.

⁷⁶ MWh = megawatt hour.

their bills. However, Essential Energy’s analysis suggests these impacts are small, 2% or less on average (see Tables 19.2 and 19.3). We further note that Essential Energy’s estimated customer impacts do not assume any customer response to its price signals. This means that customers who move their energy consumption in response to the sun-soaker price discounts, or their exports in response to its export charges and rewards, will face lower bills than shown in the above table.⁷⁷

19.4.2.8 Essential Energy’s export reward tariff can be understood or easily incorporated into retail offers

Our view is that Essential 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 way that is commercially appealing to customers. As discussed above, Essential Energy has considered simplicity in designing its export reward by making it symmetrical to its peak consumption charge.

However, we also note retailers’ preference for energy-based export charges and basic export level. We consider 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 Essential Energy’s proposal for commercial customers because:

- the 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 tariffs signal to retailers the network benefits of encourage customers to use excess solar generation
- the tariff structures are reasonably capable of being directly or indirectly incorporated by retailers or aggregators into retail offers.

Essential Energy substantially progressed cost reflectivity of commercial tariffs through reforms introduced in the 2019–24 period. Its commercial tariffs are already strongly cost-reflective, incorporating a mix of fixed charges, volume (energy) charges, time-of-use consumption charges and demand charges. As such, Essential Energy proposed only small changes to its LV and HV large business tariffs.

Essential Energy’s proposed tariffs for its medium and large business customers include:

- LV time-of-use 3-rate demand and LV time-of-use demand alternative

⁷⁷ Essential Energy – *12.01 Tariff Structure Statement*, January 2023, p 20.

- HV time-of-use monthly demand and HV time-of-use average daily demand (closed to new customers)
- LV and HV two-way battery tariffs
- sub-transmission time-of-use monthly demand.

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.

Essential Energy has retained:

- the consumption charging windows from the 2019–24 period (5 – 8pm peak, 7am – 5pm and 8 – 10pm shoulder on weekdays, off-peak charges at all other times)
- assignment policies and methods to manage customer impact for commercial customers.

Essential Energy's proposed changes include:

- introducing two-way pricing for large businesses from 2028 or earlier, depending on changes to its billing system
- introducing tariffs for LV and HV connected grid scale batteries.

19.4.3.1 Demand tariffs are appropriate for large businesses

Essential Energy has not proposed any new mechanisms to manage customer impacts for large businesses. Our view is that demand tariffs are an appropriate price signal for customers consuming over 160MWh per annum. We consider these tariffs are appropriate for customers of this size, and reflect the range of businesses in Essential Energy's network.

For LV businesses consuming over 160MWh per annum, customers will be assigned to the default low-voltage – time-of-use three rate demand tariff, with the option to opt-out to an alternative demand tariff. For HV and sub-transmission businesses, customers will only have access monthly demand tariff. We consider these tariffs are cost reflective, provide options without Essential Energy favouring one customer group over another, and provide options for new and small EV charge point operators to choose tariff structures that best suit their needs.

We also acknowledge the significant efforts Essential Energy has undertaken to consider peaky load large businesses (high demand but low, irregular utility) such as irrigators and EV charge point operators. For example, Cotton Australia commended Essential Energy on its engagement around this topic, and continues to encourage Essential Energy to explore tariff trials in this space.⁷⁸ Essential Energy is also running two trials aimed at these customers (one with a sun-soaker element, one trialling more frequent demand windows).

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

⁷⁸ Cotton Australia - *Submission - 2024-29 Electricity Determination* - Essential Energy - May 2023 p 3.

principles do not allow EV charging stations to be treated differently to other peaky load customers.⁷⁹ 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*.'

19.4.3.2 Compliance with the NSW hydrogen strategy

Our draft decision is to approve Essential Energy's proposed approach to the NSW Hydrogen Strategy, but require it to make minor changes to its revised tariff structure statement giving effect 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 (by regulatory design) these producers should 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. Essential Energy has already committed to reflecting these changes in its revised tariff structure statement proposal.⁸⁰

19.4.3.3 We seek clarity on individually calculated tariffs

Our draft decision is to not approve Essential Energy's approach to setting individually calculated tariffs. While Essential Energy describes some of the characteristics for assigning customers to individual tariffs (location of the customer and load characteristics), it does not specify what these load characteristics might be. It also does not specify the types of charges individually calculated tariffs might have. In its revised tariff structure statement, we require Essential Energy to outline its approach to setting individually calculated tariffs, in particular outlining:

- how they will diverge from the otherwise applicable NUOS tariffs
- the charging parameters that apply
- the load characteristics Essential Energy may have regard to in assigning a customer to an individually calculated tariff.

⁷⁹ NER cl. 6.18.4 (a)(2).

⁸⁰ Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, p 26.

19.4.3.4 Two-way tariffs for large businesses

As mentioned above, Essential Energy is the only distributor proposing to introduce two-way pricing for large LV businesses (other than grid-scale batteries) in the 2024–29 period. Our decision is to approve adding two-way charging components to large business tariffs. However, we recommend that Essential Energy include further customer impact modelling in its revised tariff structure statement detailing the impacts on large business customers of moving to two-way pricing. Essential Energy's two LV large business tariffs will have two-way pricing charges applied to them from 2028 or earlier, pending Essential Energy updating its billing system. Exporting LV large businesses customers will not be able to opt-out of two-way pricing.

The two-way component of these tariffs has the same design, export and reward windows and basic export level as the two-way tariff for residential and small businesses. This is due to fairness and the undiversified nature of peak exports – Essential Energy considers the drivers of export costs are the same no matter the size of the customer. It found that nearly 30% of its LV large businesses currently export, with 75% of energy exported during the 10am–3pm window, which aligns with its tariff's export charge window.⁸¹ We consider it is appropriate to introduce two-way pricing for businesses at this time for the same reasons discussed in the section above.

We also accept Essential Energy's reasoning for not introducing two-way elements to its customers connected at the HV and sub-transmission levels. Their expected export costs can be accounted for in the connection process, and Essential Energy cannot justify introducing these tariffs at this time.

19.4.4 Grid-scale battery tariffs

Our draft decision is to approve Essential Energy's proposed LV grid-scale battery tariff but not approve its proposed HV grid-scale battery tariff. This is because Essential Energy intends to make further changes to the rebate in its HV grid-scale battery tariff in its revised tariff structure statement proposal. We otherwise consider that the tariffs send appropriate price signals which improve network utilisation and support CER. We also consider Essential Energy's proposed grid-scale tariffs are reasonably capable of being understood by retail customers or being directly incorporated by retailers into retail offers.⁸²

Essential Energy proposed two grid-scale battery tariffs offered in its LV and HV networks. These tariffs are based on time-of-use energy and demand charges. Both tariffs are identical in structure.

The grid-scale battery tariffs include time-of-use energy and demand charges for imports, an export reward during the peak import period (5pm – 8pm) and a maximum monthly export capacity charge between 10am – 3pm. These tariffs have the same basic export level and pricing bands as the residential and small business sun-soaker two-way tariff (the basic

⁸¹ Essential Energy - *12.02 Tariff Structure Explanatory Statement* – January 2023, p 37.

⁸² NER, cl. 6.18.5(i).

export level is 1.5 kW with higher charges for exports between 1.5 – 3kW (band 1) and above 3kW (band 2)).⁸³

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 long-run network costs 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.

Essential Energy's proposal to introduce grid-scale battery tariffs is a response to the anticipated increase in the number of grid-scale batteries. Ausgrid, Endeavour 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, outside of tariff trials. 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 Essential Energy align network price signals with network peak constraints. We consider the proposed tariff structures to be efficient and cost reflective because most imports charges are levied during the peak and shoulder periods, when network capacity constraints are most likely to emerge. Exports are discouraged in the morning due to the capacity charge.

We consider Essential Energy has demonstrated that its proposed charges reflect the efficient costs of the network and will send appropriate price signals. For its grid-scale battery tariffs Essential Energy used the same approach to allocate long-run marginal and residual costs as its other tariffs. Essential Energy committed to reviewing the appropriate rebate amount for high-voltage grid connected batteries because it considered the rebate to be too low given that it is symmetrical to the consumption charge of a demand-based tariff.⁸⁴

Essential Energy proposed a basic export level of 1.5kW for its grid-scale battery tariffs. The basic export level is required under the NER 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. Essential Energy came to this figure after considering analysis from its consultant, Zepben, and customers' preferences of a common basic export level.⁸⁵ In this context we consider the proposed basic export level of 1.5kW reasonable.

⁸³ Essential Energy, *12.01 Tariff Structure Statement – January 2023*, p 25.

⁸⁴ Essential Energy, *12.01 Tariff Structure Statement – January 2023*, p 19.

⁸⁵ Essential Energy, *12.02 Tariff Structure Explanatory Statement – January 2023*, p 9.

We consider grid-scale battery tariffs will benefit all energy users because they encourage storage to charge during periods of low demand and high voltage, 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.

Origin Energy submitted that Essential Energy's LV grid-scale battery tariffs could incentivise certain sizes of batteries because of its high indicative fixed costs and the differential between the import charges across the day.⁸⁶ We note that Essential Energy's proposed tariffs are based on learnings from its tariff trials (1 July 2022 to 30 June 2024). Essential Energy indicated that it will consider learnings from its tariff trials and engagement with battery connection applicants in its revised tariff structure statement.⁸⁷

19.4.5 LRM Methodology

The NER requires network tariffs to be based on LRM.⁸⁸ For consumption services this means a tariff for the import of electricity must be based on the LRM 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 long run marginal cost 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 LRM, a distributor would not recover all of its total efficient costs. Costs not covered by a distributor's LRM are called 'residual costs'. The NER requires network tariffs to recover a distributor's total efficient costs (i.e. both LRM and residual costs) in a way that minimises distortions to price signals for efficient usage that would result from tariffs reflecting LRM.⁸⁹

Importantly, our *Export Tariff Guidelines* emphasise the recovery of residual or historical costs for the 2024–29 period. Our *Export Tariff Guidelines* set out that the costs incurred by distributors to provide their network's intrinsic hosting capacity (historical costs) should not be recovered through export charges.⁹⁰ 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 of LRM approach

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

⁸⁶ Origin Energy, *Submission - 2024-29 Electricity Determination - NSW and ACT - May 2023*, pp 7–8.

⁸⁷ Essential Energy– *Information request ESS IR#036 – Grid-scale battery tariffs – 20230605 – PUBLIC*.

⁸⁸ NER, cl. 6.18.5(f).

⁸⁹ NER, cl. 6.18.5(g)(3).

⁹⁰ AER, *Export Tariff Guidelines*, May 2022, p 12.

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
- low voltage visibility needs.

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

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

Essential 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.

This approach enhanced the accuracy of its estimate in comparison to the 2019–24 period by including the proportion of repex that meet incremental demand in its calculations. This is an improvement because it had previously proposed repex that was not related to incremental demand which we rejected in our determination for 2019–24 period. However Essential Energy did not include estimates for avoided repex.

We consider the average incremental cost approach is appropriate at this stage of tariff reform given its low cost of implementation and the continuation of postage stamp pricing across its network. Going forward, we encourage Essential Energy to enhance the accuracy

of its LRMC estimates for areas of the network with stable or falling demand using avoided replex estimates.

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.⁹¹ We consider that Essential Energy has appropriately estimated augex with a horizon of at least ten years to meet our definition of long-run.⁹² 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.⁹³

19.4.5.3 Export LRMC

19.4.5.3.1 Setting the export charge

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

To estimate its LRMC for export services Essential Energy used the average incremental cost approach. Essential Energy set its export charges based on its estimate of the LRMC of providing peak export services by voltage level.⁹⁴ Essential Energy found that:

- customers exporting <3 kW have less impact on its network and are more likely to export volumes of energy that only distribute within its low-voltage and high-voltage systems. Accordingly, Essential Energy proposed to set the band 1 charge at the LV and HV LRMCs for peak exports.
- customers exporting >3 kW export larger volumes of energy into its system increasingly result in two-way energy flows into higher voltages of its network system. Accordingly, Essential Energy proposed all voltage level LRMCs in its band 2 export charge.⁹⁵

In setting its export charge Essential Energy also considered diversity between customers, recognising all customers do not peak at the same time or when the system peaks (in terms of exports). Essential Energy proposed that, as with consumption, charging a maximum export without accounting for this diversity would over-recover the LRMC. Essential Energy assumed that peak exports will occur during the 10am – 3pm busy period as that is when the sun is shining most. For the monthly peak export charge, Essential Energy transformed the \$15/kVA export LRMC into a component value as $100\% * 60\% * \$15/\text{kVA} * 1.0 \text{ power factor} / 12 \text{ kW-months} = \$0.75 \text{ per kW-month}$.⁹⁶

⁹¹ Evie Networks, *submission and attachment, 2024-29 Electricity Determination - NSW - May 2023*, p 4.

⁹² See for example, AER - *Ausgrid 2019-24 - Draft decision - Attachment 18 - Tariff structure statement - November 2018*, p 83.

⁹³ AER, *Draft decision - CitiPower distribution determination 2021-26 - Attachment 19 - Tariff structure statement - September 2020*, pp 42-44.

⁹⁴ Essential Energy, *12.01 Tariff Structure Statement – January 2023*, p 34.

⁹⁵ Essential Energy, *12.01 Tariff Structure Statement – January 2023*, p 13.

⁹⁶ Essential Energy, *12.02 Tariff Structure Explanatory Statement – January 2023*, p 23.

Essential Energy attributed costs to export charges commencing only from the first day of the 2024–29 regulatory period. Essential Energy 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 into determining the LRMC of the export charge include the length of estimation period, commencement date of expenditure to support export services and forecast expenditure.

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

19.4.5.3.2 Setting the export reward

The NER provide less guidance on setting the export reward. Essential Energy proposed to set its export reward at the same level of its peak consumption charge (symmetrical). That is, the reward is the negative value of the peak energy charge that applies at the time of the export reward window, i.e. the peak load time. Essential Energy considered a symmetrical tariff was simple to explain and would be perceived as fair.⁹⁷

We consider Essential Energy complied with the NER and reflected the guidance set out in our *Export Tariff Guidelines* in setting its proposed export rewards.

19.5 Assignment to tariff classes

Our draft decision is to approve Essential Energy's proposed policies and procedures governing assignment or reassignment of retail customers to tariff classes.⁹⁸ The table below summarises how Essential Energy assigns customers to their respective tariff classes. This has not changed from the 2019–24 period.

Tariff class	Customer type	Connection characteristics
LV residential and small business customers	Residential Small business	Residential premises wholly used as private dwelling and business premises where business consumption does not exceed 160 MWh a year
LV demand	Large business Batteries	Business premises with a low-voltage connection where consumption exceeds 160 MWh a year
HV demand	Industrial Batteries	Business premises connected and metered at high-voltage network

⁹⁷ Essential Energy, *12.01 Tariff Structure Statement – January 2023*, p 34.

⁹⁸ Linked to NER requirement: cl. 6.12.1(17).

Tariff class	Customer type	Connection characteristics
Sub-transmission	Industrial	Connected at a sub-transmission voltage network (as defined by Essential Energy), not applicable for connection to dual purpose sub-transmission/distribution circuits. Inter-distributor transfer customers. Site-specific large business customers assessed on a case-by-case basis by application to Essential Energy
Unmetered	Unmetered e.g., public lighting	Any unmetered LV connected, as defined by AEMO

19.6 Statement structure and completeness

Essential 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.⁹⁹

A distributor's tariff structure statement must be accompanied by an indicative pricing schedule.¹⁰⁰

Essential 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.

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

⁹⁹ NER, cl. 6.18.1A(a).

¹⁰⁰ NER, cl. 6.8.2(d1).

- The first document should include only include the aspects of the tariff structure statement that will bind them over the 2024–29 period
- The second document should explain their reasons for what it has proposed.¹⁰¹

¹⁰¹ 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
