



FINAL DECISION
TasNetworks distribution
determination
2017–18 to 2018–19

Attachment 19 – Tariff structure
statement

April 2017

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Note

This overview forms part of the AER's final decision on TasNetworks' distribution determination for 2017–19. It should be read with all other parts of the final decision.

The final decision includes the following documents:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Value of imputation credits

Attachment 5 – Regulatory depreciation

Attachment 6 – Capital expenditure

Attachment 7 – Operating expenditure

Attachment 8 – Corporate income tax

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Demand management incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

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Attachment 19 – Tariff structure statement

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Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
F&A	framework and approach
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure

Shortened form	Extended form
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

Glossary of terms

Term	Interpretation
Apparent power	See kVA
CoAG Energy Council	The Council of Australian Governments Energy Council, the policy making council for the electricity industry, comprised of federal and state (jurisdictional) governments.
Consumption tariff	A tariff based on energy consumed (measured in kWh) during a billing cycle. Examples of consumption tariffs are flat tariffs, inclining block tariffs and declining block tariffs.
Declining block tariff	A tariff in which the per unit price of energy decreases in steps as energy consumption increases past set thresholds.
Demand charge	A tariff component based on the maximum amount of electricity (measured in kW or kVA) used within a specified time (e.g. peak charging window) and which is reset after a specific period (e.g. at the end of a month or billing cycle).
Demand tariff	A form of tariff that incorporates a demand charge component.
Fixed charge	A tariff component based on a fixed dollar amount per day that customers must pay to be connected to the network.
Flat tariff	A tariff based on a per unit usage charge that does not change regardless of how much electricity is consumed or when consumption occurs.
Flat usage charge	A per unit usage charge that does not change regardless of how much electricity is consumed or when consumption occurs.
Inclining block tariff	A tariff in which the per unit price of energy increases in steps as energy consumption increases past set thresholds.
Interval, smart and advanced meters	In this decision, used to refer to meters capable of measuring electricity usage in specific time intervals and enabling tariffs that can vary by time of day.
kW	Also called real power. A kilowatt (kW) is 1000 watts. Electrical power is measured in watts (W). In a unity power system the wattage is equal to the voltage times the current.
kWh	A kilowatt hour is a unit of energy equivalent to one kilowatt (1 kW) of power used for one hour.
kVA	Also called apparent power. A kilovolt-ampere (kVA) is 1000 volt-amperes. Apparent power is a measure of the current and voltage and will differ from real power when the current and voltage are not in phase.
LRMC	Long Run Marginal Cost. Defined in the National Electricity Rules as follows: <i>"the cost of an incremental change in demand for direct control services provided by a Distribution Network Service Provider over a period of time in which all factors of production required to provide those direct control services can be varied".</i>
Minimum demand charge	Where a customer is charged for a minimum level of demand during the billing period, irrespective of whether their actual demand reaches that level.
NEO	The National Electricity Objective, defined in the National Electricity Law as follows: <i>"to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—</i> <i>(a) price, quality, safety, reliability and security of supply of electricity; and</i>

Term	Interpretation
	<i>(b) the reliability, safety and security of the national electricity system".</i>
NER	National Electricity Rules
Power factor	The power factor is the ratio of real power to apparent power (kW divided by kVA).
Tariff	A tariff is levied on a customer in return for use of an electricity network. A single tariff may comprise one or more separate charges, or components.
Tariff structure	Tariff structure is the shape, form or design of a tariff, including its different components (charges) and how they may interact.
Tariff charging parameter	The manner in which a tariff component, or charge, is determined (e.g. a fixed charge is a fixed dollar amount per day).
Tariff class	A class of retail customers for one or more direct control services who are subject to a particular tariff or particular tariffs.
Time of use tariff	A tariff incorporating usage charges with varying levels applicable at different times of the day or week. A time of use tariff will have defined charging windows in which these different usage charges apply. These charging windows might be labelled the 'peak' window, 'shoulder' window, and 'off-peak' window.
Usage charge	A tariff component based on energy consumed (measured in kWh). Usage charges may be flat, inclining with consumption, declining with consumption, variable depending on the time at which consumption occurs, or some combination of these.

19 Tariff structure statement

This attachment sets out our final decision on TasNetworks' tariff structure statement for the 2017–19 regulatory control period.

Tariff structure statements are a new element of distribution determinations. A tariff structure statement must include a number of specific elements such as a description of a distributor's proposed tariff structures, the tariff classes to which customers will be assigned, the procedures for how customers will be assigned to a tariff, the tariff design and an indicative pricing schedule.¹ The approved tariff structure statement will apply to a distributor's tariffs for the duration of the regulatory control period.

Tariff structures must comply with the National Electricity Rules' (NER) distribution pricing principles.² These principles require distributors to set cost reflective tariffs but also take account of customer impacts, including the need for transition.

The distribution pricing principles are not prescriptive. They do not specify particular tariff structures or transitional arrangements. As a range of approaches can comply with the distribution pricing principles, we do not seek to enforce a single approach.

Nonetheless, tariff structure statements are not open to distributors to adopt any approach. We wish to see movement towards more cost reflective tariffs, taking into account customer impacts. This is what the distribution pricing principles require.

The requirement for a distributor to develop a tariff structure statement follows a process of reform to the NER governing distribution network pricing. The purpose of the reform was to establish network tariffs which better reflect the costs incurred by electricity networks² in providing regulated network services. Those costs are driven by customer decisions to use electricity at specific times or locations. Setting tariffs at cost reflective levels will help customers make better decisions about their usage.

Historically network tariffs have not varied according to the time when electricity is used. As such, they do not accurately reflect (marginal) network costs which are primarily driven by peak demand on the network at key points in time, not by total usage over a period of time. Most existing tariffs send price signals that do not inform customers about the costs imposed on distribution networks in peak demand periods.

The introduction of more cost reflective tariffs will allow customers the ability to reduce their bills by shifting their electricity usage away from peak periods. Reducing peak demand means less network capacity will be required to meet future demand. Customers will therefore need to pay for less network infrastructure. This means lower bills for all customers over the longer term, all else being equal.

¹ NER, 6.18.1A(a).

² NER, cl. 6.18.5.

Using the new distribution tariffs, electricity retailers will be able to design offers for customers that best meets their needs and support how they want to use electricity—their solar panels, air conditioners, charge their batteries, or electric vehicles. This is likely to result in customers having a choice on the type of tariff available.

Communication to customers will also be important (so that they can understand tariffs and respond), and this is likely to be an ongoing process with retailers playing an important role.

Because tariff structure statements are new, this final decision incorporates concepts which may be unfamiliar to some readers. We suggest for readers that are either unfamiliar with electricity network regulation and its terminology; or those becoming familiar with tariff structure statements to first read appendix A to this attachment. Appendix A sets out the background to tariff structure statements and provides descriptions of the more commonly used concepts.

19.1 Final decision

Our final decision approves TasNetworks' revised 2017–19 tariff structure statement.

We are satisfied TasNetworks revised tariff structure statement complies with the requirements of a tariff structure statement and the distribution pricing principles.³ It also is accompanied by an indicative pricing schedule as required.⁴

Our draft decision did not approve TasNetworks' initial tariff structure statement because we considered one element of it required further justification. Specifically, we considered that TasNetworks had not demonstrated reasonable consideration of the impact of proposed increases in fixed charges on high voltage business customers.⁵

In response to our draft decision, TasNetworks undertook further consultation with its high voltage customers on the proposed increases to fixed charges, which was well received by those stakeholders.⁶ TasNetworks also provided additional customer impact analysis on the tariff changes for its high voltage customers. The analysis demonstrates that, on average, network charges for high voltage customers are declining over the 2017–19, with increases to fixed charges more than offset by reductions in variable charges. We consider that the further discussions TasNetworks has held with its high voltage customers, including those who made submissions directly to us, placing the fixed charges in context of overall network charges has assisted customer understanding of future tariff movements and therefore complies with the distribution pricing principles. The customer impact analysis presented in the

³ NER, cl. 6.12.3(k); 6.18.1A(a) and (b); 6.18.5.

⁴ NER, cl. 6.8.2(d1).

⁵ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19–Tariff structure statement*, September 2016, p. 9.

⁶ TasNetworks, *Tariff structure statement: Background and explanation – Regulatory control period 1 July 2017 to 30 June 2019*, December 2016, pp. 14–16. (TasNetworks, *Tariff structure statement: Background and explanation*, December 2016)

revised tariff structure statement is also a demonstration of TasNetworks willingness to convey relevant information to its affected stakeholders and customers.

Our draft decision approved all other elements of TasNetworks' initial tariff structure statement. We maintain this view for our final decision.

We approve the introduction of time of use demand tariffs for residential and low voltage business customers. Demand based tariffs are more cost reflective compared to existing consumption based tariffs. Demand tariffs better reflect a distributor's forward looking costs which are driven by building network capacity to alleviate network congestion and provide a safe and reliable network during peak demand.

We approve the introduction of the time of use demand tariffs to customers on an opt-in basis and that legacy tariffs will continue in their current structure for at least the 2017–19 regulatory control period. Both TasNetworks and stakeholders considered this to be a prudent approach, to avoid any sudden price movements for customers and to introduce them to new charging regimes on a gradual basis.⁷

We approve the proposed time of use demand charging windows for the demand tariffs. The peak demand charging windows reasonably reflect times of likely network stress and are also wide enough to aid in avoiding customers shifting load and creating new peaks at other times.

One of the aims of cost reflective pricing is to reduce the extent to which certain customers are paying for the costs that other customers impose on the network through their usage. This is sometimes referred to as a cross subsidy. We approve the realignment of specific TasNetworks tariffs to remove long standing subsidies between customer groups. Removing the cross subsidies is a movement along the cost reflectivity spectrum and contributes to the achievement of compliance with the distribution pricing principles.

Although not required for compliance, our draft decision also considered TasNetworks revised tariff structure statement would be more useful if it included the following for the benefit of stakeholders:

- informing customers of the pre-requisite that an appropriate interval meter would be required to opt-in to the demand tariff, and how and from whom to obtain these meters
- information TasNetworks provided in response to the AER's issues paper on tariff structure statements and responses to information requests, so that all relevant information is in the one document. For example, information provided on recovery of residual costs.

TasNetworks' has included this information in its revised tariff structure statement.

⁷ Note too that this tariff structure statement applies to a relatively short regulatory control period, commencing 1 July 2017 and concluding on 30 June 2019.

We approve TasNetworks' introduction of monthly billing for the new time of use demand based tariffs for the 2017–19 regulatory control period even though this was not required by our draft decision to ensure compliance with the distribution pricing principles. Our draft decision approved the continuation of quarterly billing for this initial phase of tariff reform but considered more frequent billing cycles should be implemented by TasNetworks in future tariff structure statements. Therefore, we are encouraged by TasNetworks' ability to introduce monthly billing earlier than anticipated because it will help customers understand their demand and consumption patterns in a timelier manner and respond accordingly.

We also commend TasNetworks' proposed tariff trial to better understand the demand tariff impacts.⁸ This information will help TasNetworks understand how customers respond to the demand tariffs in terms of electricity use and impacts on their total bills. This will inform TasNetworks' future tariff design and communication of tariff impacts with customers. We expect TasNetworks will be able to provide the findings of its tariff trial in its next tariff structure statement.

Stakeholder engagement

We consider TasNetworks undertook significant consultation processes in developing its tariff structure statement. This helped formulate the design of its cost reflective tariffs with the engagement of customers, retailers and consumer representatives.

See appendix B for more detail on TasNetworks' stakeholder engagement.

Our process

Table 19.1 below sets out how our final decision follows on from the Power of Choice reform program and into the first annual pricing approval process.

TasNetworks submitted its initial proposed tariff structure statement in January 2016.

We made a draft decision in September 2016 that did not approve TasNetworks' January 2016 tariff structure statement. In response, TasNetworks submitted a revised tariff structure statement proposal in December 2016.

In forming our final decision, we also took into account stakeholder submissions received on TasNetworks' tariff structure statement, comments received at our public forum in March 2016 and submissions made on the revised tariff structure statement. These are considered in the chapters that follow.

⁸ TasNetworks, *Improving the way we price our services: Revised tariff structure statement for regulatory control period 1 July 2017–30 June 2019—Overview*, December 2016, p. 12. (TasNetworks, *Revised tariff structure statement—Overview*, December 2016); TasNetworks, *Tariff structure statement: Formal statement – Regulatory control period 1 July 2017 to 30 June 2019*, December 2016, p. 10. (TasNetworks, *Tariff structure statement: Formal statement*, December 2016)

Table 19.1 Tariff structure statement and annual pricing process timeframes

Reform milestones	Date
Tariff structure statement process	
TasNetworks submits tariff structure statement proposal to AER	29 January 2016
AER publishes issues paper	11 March 2016
Stakeholders' submissions on TasNetworks' proposal and AER's issues paper closed	28 April 2016
AER hosts public forum on TasNetworks' proposal	17 March 2016
AER publishes draft decision	29 September 2016
TasNetworks revised proposal and stakeholders' submissions on AER's draft decision due	1 December 2016
Stakeholders' submissions on TasNetworks revised proposal and other stakeholders' submissions due	23 December 2016
AER publishes final decision	28 April 2017
First annual pricing proposal process to apply tariff structure statement	
TasNetworks submits annual pricing proposal	Within 15 business days after publication of final decision
New tariffs take effect	1 July 2017

Source: AEMC, National Electricity Rules, AER analysis.

Future direction

This is the first tariff structure statement submitted by TasNetworks. The move to cost reflective pricing will take time to implement. The distribution pricing principles require movement towards more cost reflective tariffs with every tariff statement proposal over upcoming regulatory control periods.

There are some elements of TasNetworks proposal which comply with the distribution pricing principles but which, in our view, would benefit from further consideration in future tariff structure statements. We identify these matters to provide guidance to TasNetworks, and the industry more generally, on our views on the direction the industry should be heading, to maintain compliance with the distribution pricing principles in the future. Accordingly, in each round of tariff structure statements, we expect distributors to propose additional reforms in order to be compliant with the NER.

We encourage TasNetworks to make further improvements in the following areas for its next tariff structure statement:

- further consideration of the use of a 30 minute window to measure demand (discussed in section 19.4.2.3)
- timeframe for all residential and business customers transition to demand based tariffs (discussed in section 19.4.2.3)

- updated timeframe for tariff realignment to remove cross subsidies from tariffs (discussed in sections 19.4.3.3 and 19.4.4.3)
- the design of low voltage demand tariffs (discussed in section 19.4.4.3)
- refinement of its methods for estimating long run marginal cost (discussed in section 19.4.7.4)
- refinement of charging windows to more closely reflect the times of congestion on its network (discussed in section 19.4.8.5).

19.2 TasNetworks' revised proposal

TasNetworks revised proposal reiterated that its approach to changes in network tariffs over the 2017–19 regulatory control period are three-fold:⁹

- remove the discounts that exist in some of its network tariffs to reduce the level of cross subsidies between tariffs and within classes of customers
- rebalance the service and variable components of most existing network tariffs by increasing the service (i.e. fixed) charges and reducing the extent to which variable consumption charges are used to recover the cost of providing network services
- introduce new time of use demand based network tariffs, which residential and low voltage business customers can opt into via their electricity retailer—that is these new tariff are voluntary for customers to take up.

TasNetworks noted the subsidised tariffs are a result of historical policy decisions which are no longer relevant or compliant with the current regulatory requirements.¹⁰ To remove the cross subsidies, TasNetworks will realign specific tariffs over a 15 year period, which commenced in 2014–15. The gradual progression will allow predictability in pricing to customers. The subsidised tariffs to be realigned are:

- Business low voltage nursing home tariff
- General network – business curtilage tariff
- Uncontrolled low voltage tariff.

TasNetworks also proposed to rebalance the service and variable charges for most existing tariffs by increasing the fixed service charge component and reducing the extent variable charges are used to recover the cost of providing network services.¹¹ It proposed that since most of TasNetworks' costs are fixed, it is appropriate that more costs should be apportioned to the fixed component of the tariff (the service charge). It considered that this change improves cost reflective price signals to customers.

⁹ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 6.

¹⁰ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 7.

¹¹ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 8.

Our draft decision did not approve TasNetworks' initial tariff structure statement because we considered it did not demonstrate reasonable consideration of the impact the increases in fixed charges will have on high voltage business customers.¹²

In response, TasNetworks undertook further consultation with its high voltage business customers on the proposed increases. Its revised tariff structure statement sets out additional customer impact analysis for these customers. Following these consultations, TasNetworks did not alter the design of its high voltage tariffs or the relativities between the fixed supply charge and variables charges. Its rationale was that the increase in fixed supply charges was more than offset by reductions in the variable charges for affected customers.

Consistent with its initial tariff structure statement, the most significant change proposed by TasNetworks is the introduction of an optional (that is, a voluntary) time of use demand tariff for residential and low voltage business customers. Customers who choose to opt into the new demand tariffs will also be able to opt-out of it after a minimum period of time. The new time of use demand tariffs are set out in table 19.2.

Table 19.2 New time of use demand based network tariffs

Network tariff	Description
Residential time of use demand tariff	<p>This network tariff is for low voltage installations at premises used wholly or principally as private residential dwellings.</p> <p>There are no restrictions on the use of the supply (for example, supply may be used for general power, heating or water heating).</p> <p>This network tariff may not be used in conjunction with any other tariffs.</p> <p>An electronic meter capable of recording interval data is the minimum required for installations on this network tariff.</p>
Low voltage commercial time of use demand tariff	<p>This network tariff is for low voltage installations at premises that are not used wholly or principally as private residential dwellings.</p> <p>There are no restrictions on the use of the supply (for example, supply may be used for general power, heating or water heating).</p> <p>This network tariff may not be used in conjunction with any other tariffs.</p> <p>An electronic meter capable of recording interval data is the minimum required for installations on this network tariff.</p>
Large low voltage commercial time of use demand tariff	<p>This network tariff is for installations taking low voltage multi-phase supply at premises that are not used wholly or principally as private residential dwellings.</p> <p>There are no restrictions on the use of the supply (for example, supply may be used for general power, heating or water heating).</p> <p>This network tariff may not be used in conjunction with any other tariffs.</p> <p>An electronic meter capable of recording interval data is the minimum required for installations on this network tariff.</p>

Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 47.

¹² AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19–Tariff structure statement*, September 2016, p. 9.

The new time of use demand tariffs include a fixed supply charge, a peak demand charge (measured in kW) and an off peak demand charge (measured in kW). The demand charges will be based on a customer's highest 30 minute peak demand over a billing period for each charging window.

TasNetworks' initial tariff structure statement proposed quarterly billing periods for the new demand based tariffs which are the current practice for most of TasNetworks' customers.¹³ However, TasNetworks revised tariff structure statement advises it will now provide monthly billing cycles for the new demand tariffs.¹⁴

Customers wishing to be assigned to a time of use demand tariff will require an electronic meter capable of recording interval data (an advanced meter).¹⁵ TasNetworks' revised tariff structure statement includes further information on this requirement as well as setting out the metering requirements for all tariffs.¹⁶ Retailers and/or TasNetworks would advise the customer of this metering requirement where the customer chooses to opt-in to one of the demand tariffs.

TasNetworks revised tariff structure statement also outlines a network tariff trial, underpinned by advanced meters, to better understand the demand tariff impacts.¹⁷ TasNetworks considered this information will help it understand how customers respond to the demand tariffs in terms of electricity use and impacts on their total bills. This information will assist TasNetworks' with tariff design and communication of tariff impacts with customers for future tariff structure statements.

At present, TasNetworks residential and small low voltage customers are largely subject to consumption based tariffs, which have a fixed supply charge and variable consumption charges measured in kWh.¹⁸ These consumption based tariffs will continue in their current structure over the 2017–19 regulatory control period.

Tariff classes will remain consistent with the recent past, based on voltage and network connection characteristics. As per TasNetworks current practice, customers will be assigned to tariffs within each tariff class.

As required by the NER, TasNetworks also submitted an indicative pricing schedule for its proposed tariffs over the 2017–19 regulatory control period.¹⁹

¹³ TasNetworks, *Improving the way we price our services: Tariff structure statement—Regulatory control period 1 July 2017 to 30 June 2019*, January 2016, p. 40.

¹⁴ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 11.

¹⁵ Also sometimes referred to as an interval or smart meter.

¹⁶ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, pp. 10, 13–15; TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 21, 54–57.

¹⁷ TasNetworks, *Revised tariff structure statement: Overview*, December 2016, p. 12; TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 10.

¹⁸ This type of tariff structure is common among Australian electricity distributors but is being replaced to varying degrees as part of distributors' tariff structure statements.

¹⁹ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, Appendix B, pp. 40–57, and NER, cl 6.18.1A(e).

Also, TasNetworks' has provided additional information on its long run marginal costs and the recovery of its residual costs in response to our draft decision.

19.3 Assessment approach

The amendments to the NER pricing provisions have three aims, namely to provide:

- better signals of the cost drivers of distribution networks
- explicit consideration of tariff change impacts
- transparency and greater certainty on tariff strategies for a regulatory period.²⁰

A new network pricing objective is to be the focus for distributors when developing their network prices. This objective is that:²¹

...the tariffs that a distributor charges for provision of direct control services to a retail customer should reflect the distributors' efficient costs of providing those services to the retail customer.

Publication of a tariff structure statement is part of the new tariff arrangements. It should show how a distributor applied the distribution pricing principles to develop its price structures and indicative price levels for the coming regulatory control period.²² A distributor must submit its proposed tariff structure statement to us for assessment.

Generally, a distributor will be required to submit its proposed tariff structure statement when submitting its regulatory proposal.²³ The NER permitted submission of a tariff structure statement for some distributors outside the regulatory proposal process this time because of the timing of the rule changes.²⁴

Tariff structure statement requirements

There are two distinct sets of requirements for tariff structure statements. First, the elements an approved tariff structure statement must contain.²⁵ Second, a tariff structure statement must also comply with the distribution pricing principles.²⁶

What must a tariff structure statement contain?

The NER require a tariff structure statement to include:²⁷

²⁰ Australian Energy Market Commission, *National Electricity Amendment (Distribution Network Pricing Arrangements) Rule 2014*, 27 November 2014.

²¹ NER, cl. 6.18.5(a).

²² This is a reference to the NER' *pricing principles for direct control services*, alternatively described in this decision as the "distribution pricing principles"; NER, cl. 6.18.5(e)–(j).

²³ NER, cl. 6.8.2(a).

²⁴ NER, cl. 11.76.2(a).

²⁵ NER, cl 6.18.1A(a) and (e).

²⁶ NER, cl 6.18.1A(b). The distribution pricing principles are prescribed in cl 6.18.5.

²⁷ NER, cl. 6.18.1A(a).

- tariff classes into which retail customers for direct control services will be divided
- policies and procedures the distributor will apply for assigning retail customers to tariffs or reassigning retail customers from one tariff to another
- 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.

A tariff structure statement must be accompanied by an indicative pricing schedule.²⁸

As set out in section 19.4.1 of our draft decision, we are satisfied TasNetworks' tariff structure statement incorporates all the elements required by the NER.²⁹

What must a tariff structure statement comply with?

A tariff structure statement must comply with the distribution pricing principles, which may be summarised as:

- for each tariff class, expected revenue to be recovered from customers must be between the stand alone cost of serving those customers and the avoidable cost of not serving those customers³⁰
- each tariff must be based on the long run marginal cost of serving those customers, with the method of calculation and its application determined with regard to the costs and benefits and customer location³¹
- expected revenue from each tariff must reflect the distributor's efficient costs, permit the distributor to recover revenue consistent with the applicable distribution determination and minimise distortions to efficient price signals³²
- distributors must consider the impact on customers of tariff changes and may vary from efficient tariffs, having regard to:³³
 - the desirability for efficient tariffs and the need for a reasonable transition period (that may extend over one or more regulatory periods)
 - the extent of customer choice of tariffs
 - the extent to which customers can mitigate tariff impacts by their consumption decisions
- tariff structures must be understandable to customers³⁴

²⁸ NER, cl. 6.8.2(d1).

²⁹ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19–Tariff structure statement*, September 2016, p. 22; NER, cl 6.18.1A(a).

³⁰ NER, cl. 6.18.5(e).

³¹ NER, cl. 6.18.5(f).

³² NER, cl. 6.18.5(g).

³³ NER, cl.6.18.5(h).

- tariffs must otherwise comply with the NER and any other applicable regulatory requirements.³⁵
- For the purpose of achieving compliance with the last three principles, the tariff structure statement may depart from comprehensive compliance with the first three principles. Where the distributor does make such a departure, it must explain its reasons for doing so.³⁶
- Finally, the tariff structure statement must comply with the distribution pricing principles listed above in a manner that will contribute to the achievement of the 'network pricing objective', which is :

*that the tariffs a distribution network service provider charges in respect of its provision of direct control services to a retail customer should reflect the distribution network service provider's efficient costs of providing those services to the retail customer*³⁷

As noted, our draft decision did not approve TasNetworks' initial tariff structure statement because we were not satisfied it complied with the distribution pricing principles on one element.³⁸ Specifically, we did not consider TasNetworks demonstrated reasonable consideration of the impact of its proposed increases in fixed charges on its high voltage business customers.³⁹

Tariff structure statement process

Our role in approving a distributor's tariff structure statement

We must approve a distributor's tariff structure statement unless we are not reasonably satisfied that the proposed tariff structure statement complies with the distribution pricing principles or other applicable requirements of the NER.⁴⁰ We make one holistic determination to approve or refuse to approve the distributor's tariff structure statement. Our analysis on each element of the distributor's tariff structure statement contributes to our overall assessment.

What happens when a distributor submits a proposed tariff structure statement?

The NER requires us to publish the distributor's proposed tariff structure statement and invite submissions.⁴¹ We then assess a proposed tariff structure statement for its

³⁴ NER, cl. 6.18.5(i).

³⁵ NER, cl. 6.18.5(j); this requirement includes jurisdictional requirements.

³⁶ NER, cl 6.8.2(7) and 6.18.5(c).

³⁷ NER, cl. 6.18.5(a).

³⁸ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19–Tariff structure statement*, September 2016, p. 9; NER, cl. 6.12.1(14A).

³⁹ NER, cl.6.18.5(h).

⁴⁰ NER, cl 6.12.3(k).

⁴¹ NER, cl. 6.9.3(a).

compliance with the distribution pricing principles and other applicable requirements of the NER. Taking into account submissions and any supporting information submitted by the distributor, we will publish a draft decision on the proposed tariff structure statement.⁴² This will set out our reasons for making the decision.⁴³

Our role is largely one of assessing compliance. We must approve a proposed tariff structure statement unless we are reasonably satisfied that it does not comply with the distribution pricing principles or other applicable requirements of the NER.⁴⁴

What happens if a proposed tariff structure statement is not approved?

A distributor may submit a revised tariff structure statement no later than 45 business days after we publish our draft decision.⁴⁵ Under the NER, a distributor may only make revisions to its tariff structure statement to address matters raised by our draft decision.⁴⁶ We will publish the distributor's revised tariff structure statement and again call for submissions before making a final decision.⁴⁷

What happens after a tariff structure statement is approved?

Once approved, a tariff structure statement will remain in effect for the relevant regulatory control period.⁴⁸ The distributor must comply with the approved tariff structure statement when setting prices annually for direct control services.⁴⁹

We will separately assess the distributor's annual pricing proposals for the coming 12 months. Our assessment of annual pricing proposals will also be to ensure consistency with the requirements of the approved tariff structure statement.

An approved tariff structure statement may only be amended within a regulatory control period with our approval.⁵⁰ We will approve an amendment if the distributor demonstrates that an event has occurred that was beyond its control and which it could not have foreseen so that the amended tariff structure statement materially better complies with the distribution pricing principles.⁵¹

19.3.1 Interrelationships

⁴² NER, cl. 6.10.2; cl. 11.76.2(a).

⁴³ NER, cl. 6.10.2(a)(3); cl. 11.76.2.

⁴⁴ NER, cl. 6.12.3(k).

⁴⁵ NER, cl. 6.10.3(a).

⁴⁶ NER, cl. 6.10.3(b).

⁴⁷ NER, cl. 6.10.3(d)(e).

⁴⁸ Tariff Structure Statements may only be amended during a regulatory control period, with our approval, if an event occurs that is beyond the distributors' reasonable control and could not reasonably have been foreseeable requires a change.

⁴⁹ NER, cl. 6.18.1A(c).

⁵⁰ NER, cl. 6.18.1B.

⁵¹ NER, cl. 6.18.1B(d).

In assessing TasNetworks' tariff structure statement, we are considering the tariffs TasNetworks' can charge for the provision of its distribution services over the 2017–19 regulatory control period. Our final decision sets out the total revenue requirement TasNetworks' can recover through these tariffs. Our final decision on the total revenue requirement is set out in attachment 1 – Annual revenue requirement.

Our final decision also sets out the revenue cap control mechanism and the side constraint mechanism which calculates TasNetworks' revenues for each regulatory year after the first year in a regulatory control period. Our final decision on these mechanisms is set out in attachment 14 – Control mechanisms.

Tariffs set out in the approved tariff structure statement need to recover the annual revenue requirement and comply with the price controls set out in attachment 14. We check for this as part of our annual assessment of pricing proposals (that is, proposed tariffs) for the upcoming 12 months.

19.4 Reasons for final decision

The following discusses our reasons for this final decision.

19.4.1 Tariff classes

We approve the tariff classes proposed by TasNetworks because we are satisfied they contribute to achievement of compliance with the distribution pricing principles. We approved the same tariff classes in our draft decision.⁵²

TasNetworks' proposed tariff classes are the same as those applied in the current regulatory control period. The tariff classes group similar customers together taking into account their connection to and use of the network. Therefore, we are satisfied the proposed tariff classes are compliant with the rule requirements on the assignment and re-assignment of customers to tariff classes.⁵³

A simplified version of the tariff classes are set out in table 19.3. A more detailed version is set out in table 18 of TasNetworks' tariff structure statement – Background and explanation.⁵⁴

Table 19.3 TasNetworks' tariff classes for standard control services

Network tariff class	Description
Residential	Tariff class is for premises that are wholly or principally as private residential dwellings. This is a relatively homogenous group of customers.

⁵² AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 50–51.

⁵³ NER, cl.6.18.3.

⁵⁴ TasNetworks, *Tariff structure statement: Background and explanation: Amended clean*, 29 March 2017, Table 18, pp. 91–96.

Controlled energy	Tariff class is for off-peak water, residential space and/or indoor pool heating for installations that are private residential dwellings. This is a relatively homogenous group of customers.
Uncontrolled energy	Tariff class is for water, residential space and/or domestic indoor pool heating for installations that are private residential dwellings. This is a relatively homogenous group of customers.
Small low voltage	Tariff class is for all other businesses (i.e. installations that are not private residential dwellings) that are connected to the low voltage network.
Irrigation	Tariff class is for primary producers' business installations that are used primarily for the irrigation of crops.
Large low voltage	Tariff class is for large businesses (i.e. installations that are not private residential dwellings) low voltage customers that, due to their size, are likely to have dedicated (or largely dedicated) transformers and use a small proportion of the shared low voltage system.
High voltage	Tariff class is for large customers that are able to agree a specified maximum demand that is then used for pricing purposes.
Unmetered	Tariff class is for unmetered connections, other than streetlights. This is a relatively homogenous group of customers.
Streetlights	Tariff class is for customers that have a public lighting service (other than installation and replacement lamps). This is relatively homogenous group of customers.
Individual tariff calculation	Tariff class is for very large customers for which tariffs are calculated on an individual basis.
Embedded generators	Tariff class is for the recording of energy imported into the distribution network, and applies to customers with embedded generation. While there are specific tariffs within this tariff class, TasNetworks does not apply charges for these network tariffs.

Source: TasNetworks, *Tariff structure statement: Formal statement*, December 2016, pp. 13–15.

Standalone and avoidable costs

In setting tariffs, TasNetworks must comply with the distribution pricing principles, which includes removing cross subsidies between tariff classes. For each tariff class, expected revenue to be recovered from customers should be between the standalone cost of serving those customers and the avoidable cost of not serving those customers.⁵⁵ This constraint prevents large cross subsidies between tariff classes, such as between residential and business customers.

The standalone cost for a tariff class is the cost of supplying only the tariff class concerned, with all other tariff classes not being supplied at all. If customers were to pay above the standalone cost, then it would be economically beneficial for customers to switch to an alternative provider. It would also be economically feasible for an alternative service provider to operate. This creates the possibility of inefficient bypass of the existing infrastructure.

The avoidable cost for a tariff class is the reduction in network cost that would take place if the tariff class in question were not supplied (whilst all other tariff classes

⁵⁵ NER, cl. 6.18.5(e)

remained supplied). If customers were to be charged below the avoidable cost, it would be economically beneficial for the distributor to stop supplying the customers as the associated costs would exceed the revenue obtained.

TasNetworks' provided estimates of the avoidable and standalone costs for all of its tariff classes and explained its approach to estimating these costs.⁵⁶ TasNetworks' approach is consistent to that applied previously.

Table 19.4 compares TasNetworks' expected revenue estimates for 2017–18 for each tariff class against the avoidable and standalone costs of supply. As the expected revenue for each tariff class lies within the lower bound of the avoidable cost and the upper bound of the standalone cost, TasNetworks has complied with the NER.⁵⁷

Table 19.4 Avoidable and standalone costs, 2017–18 (\$, million)

Tariff class	Avoidable cost	Expected revenue	Standalone costs
Residential	7.6	102.3	318.4
Controlled energy	0	1.5	312.4
Uncontrolled energy	0	32.9	312.4
Small low voltage	2.1	55.3	313.3
Irrigation	0.4	4.8	312.7
Large low voltage	2.1	18.9	314.4
High voltage	1.3	6.4	313.6
Unmetered	0	0.8	312.4
Streetlights	0.1	1.8	312.4
Individual tariff calculation	0.1	1.2	312.5
Embedded generators ¹	n.a.	n.a.	n.a.

Source: TasNetworks, *Tariff structure statement: Background and explanation: Amended clean*, 29 March 2017, p. 77.

1.) TasNetworks does not apply a charge for this network tariff class.

Note: When responding to our information request, TasNetworks uncovered errors in table 15 of its revised tariff structure statement and provided amendments (see TasNetworks, *Response to questions raised by the AER: Request ID: IR#022*, 29 March 2017, p. 5). Table 19.4 incorporates these changes.

19.4.2 Residential customer tariffs

We approve TasNetworks' proposed five residential customer tariffs for the 2017–19 regulatory control period because we are satisfied they contribute to the achievement

⁵⁶ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 75–78.

⁵⁷ NER, cl. 6.18.5(e).

of compliance with the distribution pricing principles. We approved the same tariffs in our draft decision.⁵⁸

Four of the residential customer tariffs are currently available and will continue in their current design. TasNetworks will also introduce a new time of use demand tariff which will be available to customers on an opt-in basis. The design of the demand tariff will be new to TasNetworks' residential customers because this network tariff has never previously been offered.

TasNetworks' stated that its current consumption based tariffs are no longer fit for purpose because as they do not reflect the cost drivers of its business.⁵⁹ Rather than time of use demand based tariffs better reflect the costs of providing its network services and drivers of those costs.⁶⁰ TasNetworks' consideration is that all residential and business customers will transition to a time of use demand based tariff in the future.⁶¹

However, TasNetworks' proposed to continue with the consumption based tariffs over the 2017–19 regulatory control period to allow customers time to understand and accept the new demand tariff.⁶²

We consider this approach appropriate in the short term as the demand tariff represents a significant change for residential customers. We also consider this approach appropriate because residential customers will be able to transition to the demand tariff if they want to.

TasNetworks' also noted it will undertake a tariff trial to better understand the impacts of the new demand tariffs.⁶³ This information will help TasNetworks understand how customers respond to the demand tariffs in terms of electricity use and impacts on their total bills. It will also assist TasNetworks with tariff design and communication of tariff impacts with customers. We anticipate TasNetworks will provide outline the findings of its tariff trial in its next tariff structure statement.

19.4.2.1 Tariff design

We consider the tariff design of TasNetworks' proposed tariffs contributes to the achievement of compliance with the distribution pricing principles. TasNetworks' continuing (legacy) tariffs will maintain their current designs which are largely flat consumption or time of use consumption tariffs. The design of new time of use demand

⁵⁸ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 26–31.

⁵⁹ TasNetworks, *Revised tariff structure statement: Overview*, December 2016, p. 2; TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 8.

⁶⁰ That is, that the level of and changes in demand are the main drivers of network capex expansions.

⁶¹ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 41.

⁶² TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 6.

⁶³ TasNetworks, *Revised tariff structure statement: Overview*, December 2016, p. 12; TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 10.

tariff will comprise of a fixed charge and two demand charges (for peak and off-peak periods). While some continuing tariffs will not be cost reflective in the short term, we consider the overall suite of tariffs represent a positive movement along the cost reflectivity spectrum for the 2017–19 regulatory control period. We expect that TasNetworks will undertake measures to move further along the cost reflectivity spectrum in its 2019–24 tariff structure statement.

Continuing residential tariffs

We approve TasNetworks' continuing residential tariffs in their current design as set out in table 19.5:

- a default 'flat' consumption tariff comprising a fixed service charge (fixed charge) and a consumption charge that does not vary in different time periods or with how much electricity is consumed.
- a similarly structured flat consumption tariff is available to customers with a prepayment metering product.⁶⁴ However, this tariff is not available to new customers.⁶⁵
- an opt-in time of use consumption tariff comprising a fixed charge and variable consumption charges for different periods of the day—peak and off peak. Peak charges occur from 7am to 10am and 4pm to 9pm weekdays. All other times, including weekends, will be off peak.
- a similarly structured time of use consumption tariff available to customers who have a prepayment metering product.

Table 19.5 TasNetworks' continuing residential tariffs

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Residential low voltage general	New/Existing	Default for new/existing customers	Type 6 is the minimum requirement	Fixed charge + flat usage charge	
Residential low voltage PAYG	Existing	Closed to new customers	Prepayment meter	Fixed charge + flat usage charge	Customers must have a prepayment metering product installed prior to 1 July 2013.
Residential low voltage time of use	New/Existing	Optional for new/existing customers	Type 6 capable of recording time of use data is the minimum requirement	Fixed charge + time of use charges	Peak = 7–10AM, 4–9PM weekdays Off peak = All other times

⁶⁴ TasNetworks, *Indicative pricing schedule: Regulatory control period 1 July 2017 to 30 June 2019*, January 2016, p. 6.

⁶⁵ TasNetworks, *Network and tariff application and price guide 2017–18 and 2018–19*, March 2017, p. 21.

Residential low voltage PAYG time of use	New/Existing	Optional	Type 6 capable of recording time of use data is the minimum requirement	Fixed charge + time of use charges	Peak = 7–10AM, 4–9PM weekdays Off peak = All other times
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As noted TasNetworks' considered these consumption based tariffs are no longer fit for purpose as they do not reflect the cost drivers of its business.⁶⁶ Rather the new time of use demand based tariffs better reflect these cost drivers.

Although TasNetworks' consideration is that all residential and business customers will transition to a time of use demand based tariff over time, it proposed to continue with the consumption based tariffs during the 2017–19 regulatory control period.⁶⁷ By doing so it will allow customers time to understand and accept the new demand tariff.⁶⁸ It would also minimise potential disruption from a change in tariff charging for the vast majority of its customers.

We consider this approach appropriate in the short term as the demand tariff represents a significant change for residential customers. We also consider this approach appropriate because the more cost reflective demand tariff will be available to those residential customers who want to transition to it. It provides a signal to retailers that TasNetworks intends to utilise demand based charging for low voltage customers into the future.

New time of use demand tariff for residential customers

We approve TasNetworks' introduction of the time of use demand tariff for residential customers because we consider it contributes toward the achievement of compliance with the distribution pricing principles.

The design of the demand tariff will allow customers the ability to manage their peak loads which will ultimately assist in greater network utilisation and if customer behavioural change is effected towards reducing demand, minimise future investment costs. We consider the demand tariff shows movement along the cost reflectivity spectrum, away from consumption tariffs.

The design of the demand tariff includes a fixed service charge, a peak demand charge and an off peak demand charge (figure 19.1). To make this new tariff as simple to understand as reasonably possible, TasNetworks' demand tariff does not include any consumption based charges.

⁶⁶ TasNetworks, *Revised tariff structure statement: Overview*, December 2016, p. 2; TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 8.

⁶⁷ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 41.

⁶⁸ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 6.

Figure 19.1 Charging components of the time of used demand tariff



Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 48.

The demand charges are based on a customer's highest 30 minute demand over a billing period for each charging window—peak and off peak.⁶⁹ The peak demand charge will be set at a higher rate than the off peak demand charge thereby signalling to customers the value of using the network, particularly at peak times. The peak demand charge will signal the forward looking costs associated with demand growth.

The demand tariff charging windows will align with those of the continuing residential time of use consumption tariff. That is, peak charges will occur from 7am to 10am and 4pm to 9pm weekdays. All other times, including weekends, will be off peak.

We consider that this will make transitioning from the consumption based tariff to the demand tariff easier for customers because the peak and off-peak charging times will be the same. Customers will therefore be better able to respond to the new tariff if they choose to take it up without needing to adjust their behaviour to account for different peak and off-peak time periods.

Table 19.6 TasNetworks' residential time of use demand tariff

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Residential time of use demand	New/Existing	Optional	Type 6 capable of recording time of use demand data in half-hourly blocks is the minimum requirement	Fixed charge + peak and off peak demand charges	Demand charges are based on the highest 30 minute demand incurred for each charging window over a billing period (typically quarterly) Peak = 7–10AM, 4–9PM weekdays Off peak = All other times

While the distribution pricing principles require consideration of locational pricing,⁷⁰ currently in Tasmania network tariffs for customers that consume less than 150MWh of

⁶⁹ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 48.

⁷⁰ NER, cl. 6.18.5(f)(3).

electricity per annum are required to be uniform.⁷¹ Therefore TasNetworks' current ability to develop locational cost reflective tariffs is limited.

30 minute demand measurement periods

TasNetworks proposed to calculate the peak and off peak demand charges based on a customer's highest 30 minute peak demand over a billing period for each charging window.⁷² We approve of this basis of charging in this initial phase of tariff reform as we consider the simplicity of a single 30 minute period will be easily understood by customers which will allow them to respond to the price signals.⁷³ We also consider customer impact is adequately managed given the demand tariff is opt-in meaning only customers who choose to be exposed to the demand charges will face those price signals. We approved the same basis of charging in our draft decision.⁷⁴

Stakeholder submissions from David Headberry and Nekon raised concern regarding the demand measurement periods.⁷⁵ Both submissions considered monthly charging of one peak incident is not necessarily representative of a customer's demand on the network. Rather, a continuous incentive such as an average of peak demands over a period should be employed. Nekon also posited that a better representation of a true user pay approach would be daily peak demand charging.⁷⁶

While we accept TasNetworks' proposed approach for this initial phase of tariff reform for the reasons stated above, we too are interested in exploring whether an alternative basis of charging is a more reliable basis for TasNetworks' 2019–24 tariff structure statement. We set out our current considerations on this issue in the future directions discussion below (see section 19.4.2.3).

We also consider TasNetworks' demand tariff trial (discussed below) will provide valuable insights into measurement periods for TasNetworks' next tariff structure statement.

Billing periods

We approve TasNetworks' revised tariff structure statement to provide monthly billing for the new time of use demand based tariffs from 1 July 2017.⁷⁷ We consider monthly billing will provide customers timelier feedback on when their maximum demand incidents occur and how this impacts their bills. This timelier information will provide

⁷¹ NER, cl. 6.18.5(j) and cl. 9.48.4B.

⁷² TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 48.

⁷³ NER, cl. 6.18.5(i).

⁷⁴ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 29–30.

⁷⁵ CCP4 - David Headberry, *Submission on TasNetworks' revised proposal*, 21 December 2016, p. 40; Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 7.

⁷⁶ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 7.

⁷⁷ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 11.

sharper price signals to customers and support their decisions on how they consume electricity.

TasNetworks initially proposed quarterly billing cycles for the new demand tariffs due to current constraints; although it is noted that monthly billing cycles would be explored for the future.⁷⁸

While our draft decision accepted the quarterly billing cycles for TasNetworks' first tariff structure statement, we noted that monthly billing cycles should be implemented in TasNetworks' next tariff structure statement.⁷⁹ The introduction of monthly billing was supported by the Tasmanian Renewable Energy Alliance (TREA), TasCOSS and the Alternative Technology Association (ATA) who considered it optimal for the demand tariffs.⁸⁰

Based on TasNetworks revised proposal and its alignment with stakeholder views, we support TasNetworks' introduction of monthly billing for the demand tariffs for this initial phase of tariff reform.

Tariff trial and metering

We approve of TasNetworks' proposal to undertake a tariff trial to better understand the impacts of demand tariffs.⁸¹ TasNetworks' tariff trial will use advanced meters acting as 'off market' devices and will be located near existing meters. Data will be captured over a 24 month period and participants will be provided with a web-based interface displaying their household demand and consumption levels. The data will assist TasNetworks understand how its customers respond to the demand tariffs in terms of electricity use and impacts on their total bills. It will also assist TasNetworks with future tariff design and communication of tariff impacts with its customers.

We agree with the submissions from the Tasmanian Small Business Council (TSBC) and Consumer Challenge Panel member Jo De Silva which considered TasNetworks should be commended for its tariff trial of the new demand tariffs.⁸² The submissions considered TasNetworks and its customers will be in a better position to make informed decisions after their experience in the trial.⁸³

⁷⁸ TasNetworks, *Response to the AER's Issues Paper: Tariff structure statement proposals — TasNetworks*, April 2016, p. 23.

⁷⁹ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 30–31.

⁸⁰ TasCOSS, *Submission on AER Issues Paper: Tariff Structure Statement proposals (TasNetworks)*, 29 April 2016, pp. 2–3; Tasmanian Renewable Energy Alliance, *TREA response to AER March 2016 issues paper: TasNetworks tariff structure statement proposals*, 5 May 2016, pp. 3–4; TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, December 2016, p. 2; ATA, *Submission to draft decision: TasNetworks tariff structure statement*, December 2016, p. 2.

⁸¹ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 10.

⁸² TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 17; CCP 4 - Joe De Silva, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 12.

⁸³ TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 17.

The trial will also address Nekon's concern that there is a lack of data to support TasNetworks' proposed tariff reform.⁸⁴ We also consider the trial will provide insights into John Herbst's considerations that peak volume charging is more cost reflective and provides better price signal than peak demand charging.⁸⁵ We expect TasNetworks to provide the findings of its tariff trial in its next tariff structure statement development process.

We also note that Don Maisch and Nekon submitted concerns about the cost of the metering technology needed for the new demand tariffs.⁸⁶ As noted in our draft decision, the network tariff reform is commencing at the same time as reforms to the provision of metering and metering services.⁸⁷ The reforms will introduce competition in the provision of meters from 1 December 2017 through 'a market-led approach to the deployment of advanced meters'.⁸⁸ Therefore, while customers will incur the cost of a new advanced meter, we consider that competition for the provision of these meters will see customers pay no more than necessary for them.

Don Maisch also submitted concerns regarding the health effects of consumers from advanced meter emissions.⁸⁹ However, we have no role in determining possible health related impacts of the meters. We do observe that there have been concerns about the health effect of smart meters raised by consumers such as Don Maisch and such concerns have been considered by other agencies in other jurisdictions.

All smart meters installed in Victoria must comply with electromagnetic exposure limits developed by the Australian Radiation Protection and Nuclear Safety Agency. That agency found that radiofrequency electromagnetic radiation from these meters is very low and well below exposure limits.⁹⁰ To further respond to consumers concerns about the health related implications of smart meters, the Victorian government undertook independent testing in 2011 and 2015 to ensure the smart meters continued to meet the standards set by the Radiation Protection agency. The studies confirmed this to be the case.⁹¹

19.4.2.2 Tariff assignment

⁸⁴ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016.

⁸⁵ John Herbst, *Submission on TasNetworks' tariff structure statement*, 23 December 2016, p. 2.

⁸⁶ Maisch, D., *Submission on TasNetworks' revised proposal*, 21 December 2016, pp. 1–3; Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 8.

⁸⁷ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 60–61.

⁸⁸ AEMC, *Final rule determination: Expanding competition in metering and related services*, 26 November 2015, p. i.

⁸⁹ Maisch, D., *Submission on TasNetworks' revised proposal*, 21 December 2016, pp. 3–8.

⁹⁰ Victorian Department of Economic Development, Jobs, Transport and Resources, *Smart Meters and your health fact sheet*, p 1, see <http://www.smartmeters.vic.gov.au/safety/health>

⁹¹ Victorian Department of Economic Development, Jobs, Transport and Resources, *Smart Meters and your health fact sheet*, p.p. 2-3, see <http://www.smartmeters.vic.gov.au/safety/healthf>

We approve TasNetworks' proposed tariff assignment policy for residential customers. We approved the same tariff assignment policy in our draft decision.⁹²

For the 2017–19 regulatory control period, no residential customers will be mandatorily assigned to a time of use consumption or demand tariff. Instead these tariffs will be offered on an opt-in basis.⁹³ The default assignment of residential customers will remain the 'flat' consumption tariff.

We received a number of submissions on TasNetworks' tariff assignment policy.

Consumer Challenge Panel member Jo De Silva, TSBC and TREA supported the introduction of the new cost reflective time of use demand tariffs on an opt-in basis.⁹⁴ These stakeholders considered an opt-in approach appropriate as time was needed for customers to better understand the tariffs and their impacts before being subject to them. The TSBC encouraged TasNetworks to provide further assistance to customers to support this outcome.⁹⁵

While TREA supported the demand tariffs be made available on an opt-in basis, it raised concern with TasNetworks' view that all customers will transition to time of use demand tariffs in future.⁹⁶ It considered that data should be collected over the 2017–19 regulatory control period to inform TasNetworks on any additional options for moving to more efficient and cost reflective tariffs, while minimising adverse customer impacts.

Consumer Challenge Panel member David Headberry did not support the opt-in approach for the demand tariffs. He considered it distorts cost reflectivity because customers will only opt-in if they get a lower bill.⁹⁷ While Nekon submitted there was not enough information on opting out provisions for demand tariffs once a customer has opted in.⁹⁸

After taking into consideration the stakeholder submissions, we maintain our draft decision view that TasNetworks' proposed opt-in approach contributes to the achievement of compliance with the distribution pricing principles.⁹⁹

We are of this view because it takes into account customer impacts by ensuring that residential customers have time to better understand new demand tariffs before switching to it. TasNetworks has taken account of customer concerns by only

⁹² AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 51–52.

⁹³ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 47.

⁹⁴ CCP 4 - Joe De Silva, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 12; TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, pp. 16-17; TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, December 2016, p. 2.

⁹⁵ TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 17.

⁹⁶ TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, December 2016, p. 2.

⁹⁷ CCP4 - David Headberry, *Submission on TasNetworks' revised proposal*, 21 December 2016, p. 40.

⁹⁸ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, pp. 6–7.

⁹⁹ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 51–52.

proposing an opt-in demand tariff for 2017–19. In this way, the goal of tariff reform is progressively explained over time, lending itself to potentially more acceptance than one based on significant short term change. TasNetworks has also taken into account the relatively short two year regulatory control period when considering customer assignments in the immediate term.

The basis of our view that customers need time to understand the tariff changes is prevalent in the submissions from Nekon and residential retail customer, Michael Powe. Nekon submitted that the broader community is yet to understand and provide input into the proposed tariff changes.¹⁰⁰ While Michael Powe considered the current tariffs should not be altered and if TasNetworks requires more income then it should increase the kilowatts per hour charge rather than implementing new tariffs.¹⁰¹

Michael Powe's submission is a personal account of the concerns of TasNetworks' customers during this initial phase of tariff reform. It also supports our considerations on TasNetworks tariff structure statement which attempts to balance the transition to more cost reflective pricing against customer awareness and impacts. TasNetworks needs to develop cost reflecting pricing under the new rules. The continuation of TasNetworks' existing tariffs over the 2017–19 regulatory control period will allow customers like Michael Powe, time to understand the new demand tariffs as they represent a significant change to customers. And these customers will not be compelled to take up the new demand tariff.

As noted by TasNetworks, an important part of its ongoing network tariffs review and continuing tariff reform journey is customer consultation.¹⁰² We encourage TasNetworks to continue to engage with customers, such as Michael Powe, for its next tariff structure statement. We consider TasNetworks tariff trial to better understand the impacts of demand tariffs and how customers respond to these tariffs through their electricity use and impacts on total bills will assist with this engagement. This position is supported by TREA.¹⁰³

While we accept an opt-in approach for this initial phase of tariff reform, we acknowledge David Headberry's view that opt-in arrangements may not be appropriate into the medium term. As we discuss further below, for the next round of tariff structure statements we may consider default assignment to cost reflective tariffs with opt-out provisions or mandatory assignment may be more appropriate. We note the approach of moving customers to cost reflective tariffs will need to be considered against the customer impact principle in the NER. This position is also supported by TREA.¹⁰⁴

In regard to Nekon's consideration that there was not enough information provided by TasNetworks on the provisions for opting out of a demand tariff once a customer has

¹⁰⁰ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 8.

¹⁰¹ Powe, M., *Submission on TasNetworks' revised proposal*, 22 December 2016.

¹⁰² TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 10.

¹⁰³ TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, December 2016, p. 2.

¹⁰⁴ TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, December 2016, p. 2.

opted in, we agree.¹⁰⁵ We note upon request from us, TasNetworks has provided its Network Tariff Application and Price Guide for the 2017–19 regulatory control period which provides detail of the opt out arrangements. We have published TasNetworks' Network Tariff Application and Price Guide with our final decision.

We also note that TasNetworks total revenue requirement is not impacted by the introduction of the new demand tariffs, as alluded to by Michael Powe.¹⁰⁶ Rather TasNetworks' total revenue requirement is subject to a revenue cap control mechanism for the 2017–19 regulatory control period. As such, TasNetworks' cannot earn more revenue than that as set out in our final decision. We note our final decision total revenue requirement will see TasNetworks' earn lower annual revenues over the 2017–19 regulatory control period than it has over the current regulatory control period.

On a related issue, Nekon submitted that while the total revenue requirement is capped it is concerned there are no measures to cap annual tariff levels.¹⁰⁷ We note the NER sets out that for each regulatory year after the first year in a regulatory control period, side constraints apply to the weighted average revenue raised from each tariff class.¹⁰⁸ In accordance with the NER, the permissible percentage increase is the greater of CPI–X plus 2 per cent or CPI plus 2 per cent. Although this constraint applies at the tariff class level, by way of application it also constrains the movement in individual tariffs.

Further, TasNetworks tariff structure statement is required to be accompanied by an indicative pricing schedule which sets out the price level for each tariff of the regulatory control period.¹⁰⁹ Any significant departures from the indicative pricing schedule must be explained in TasNetworks' annual pricing proposal.¹¹⁰ We consider both of these mechanisms together impose limitations on annual individual tariff variations.

Our final decision on TasNetworks' revenue cap control mechanism and the side constraint mechanism is set out in attachment 14 – Control mechanisms. Our final decision on TasNetworks' revenues is set out in attachment 1 – Annual revenue requirement. TasNetworks' indicative pricing schedule is set out in its revised tariff structure statement.

We also note that TasNetworks responded to our draft decision consideration that its revised tariff structure statement should set out that a pre-requisite to opt-in to the demand tariff is to obtain an appropriate meter.¹¹¹ This requirement was not clear in

¹⁰⁵ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, pp. 6–7.

¹⁰⁶ Powe, M., *Submission on TasNetworks' revised proposal*, 22 December 2016.

¹⁰⁷ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 6.

¹⁰⁸ NER, cl. 6.18.6(c).

¹⁰⁹ NER, cl. 6.18.1A(e).

¹¹⁰ NER, cl. 6.18.2(b)(7A).

¹¹¹ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 28–29; TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 10.

TasNetworks' initial tariff structure statement and was raised as an issue in the submission from TasCOSS.¹¹²

19.4.2.3 Future direction

Demand measurement periods

While we accept TasNetworks' calculation of peak and off peak demand charges based on a customer's highest 30 minute peak demand over a billing period, we are interested in whether an alternative basis of charging is a more reliable basis for TasNetworks' 2019–24 tariff structure statement.

For example, an alternative approach is to average a customer's top several demand periods for each charging window during a billing period. We note Ergon Energy proposed to average the four highest demand periods as the basis of calculating the peak demand charge for its residential customers. While we approve TasNetworks' approach of using a single 30 minute period, we also consider there are potential benefits in the averaging approach. We are interested in working through this issue with the industry and stakeholders for the next round of tariff structure statements.

We note the submissions from David Headberry and Nekon considered a continuous incentive such as an average of peak demands over a period should be employed.¹¹³ Nekon also posited another approach that would better represent a true user pay approach would be daily peak demand charging.¹¹⁴

The potential differences in these approaches relate to the extent to which they:

- send price signals to customers that are more closely aligned with the network's co-incident demand
- enable customers to respond to price signals
- avoid or manage the potential for a customer to incur 'bill shock'.

It is not an individual customer's peak demand that drives network costs, but the extent to which that customer's peak demand contributes towards network congestion and the network's co-incident demand. However, the network's co-incident demand may not be on the same day as an individual customer's highest demand. As an example, Ergon Energy's averaging approach increases the probability that a customer's highest demand will coincide with the day, or days, on which Ergon Energy's network peak demand also occurs.

¹¹² TasCOSS, *Submission on AER Issues Paper: Tariff Structure Statement proposals (TasNetworks)*, 29 April 2016, pp. 2–3.

¹¹³ CCP4 - David Headberry, *Submission on TasNetworks' revised proposal*, 21 December 2016, p. 40; Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 7.

¹¹⁴ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 7.

We encourage distributors to collect data during this first tariff structure statement period that demonstrates the extent to which customers' peak demand typically occurs at the same time as the network also experiences its peak demand. This should provide a useful basis for determining if subsequent tariff structure statements should change to averaging a customer's highest demand days. TasNetworks should consider Ergon Energy's averaging of demand days when undertaking its 2019–24 tariff structure statement consultation on ways to measure customer demand.

The use of a single period or averaging approach may also have an impact on a customer's ability to respond to price signals. Price signals aim to elicit an informed and considered response by customers. If a customer has automatic appliances (e.g. air-conditioner or battery storage programmed to respond to peak demand periods), then responding to price signals might be straight forward.

However, in the absence of automatic appliances, there is the potential for customer's peak demand periods to occur more by accident than design, especially initially, as customers gradually become familiar with demand signals and the amount of electricity different appliances consume. If a customer's top 30 minute demand window occurs by accident in one billing period, they will have a heightened incentive to understand their electricity usage the following billing period to avoid a repeat situation. Whereas an averaging approach might assist a customer in responding within the billing period, rather than waiting until the next billing cycle. For similar reasons, an averaging approach may also assist a customer to avoid or manage 'bill shock'.

We consider TasNetworks' demand tariff trial will provide valuable insights into the demand measurement period as well as how customers respond to these signals for its next tariff structure statement.

Tariff assignment

For this first round of tariff structure statements, we have accepted the use of opt-in assignment policies in moving customers to cost reflective tariffs. However, we also observe that sole reliance on opt-in arrangements may not be appropriate into the future. Distributors should consider this as part of their consultation for their next tariff structure statements.

Our views about tariff assignments and how we see this evolving over future regulatory periods was set out in each of our tariff structure statement decisions for distributors across Queensland, New South Wales, South Australia and the Australian Capital Territory. This is set out below.

An opt-in approach to tariff assignment is at one end of the spectrum of possible approaches, including:

- assigning customers to a cost reflective tariff (subject to appropriate metering) by default but allowing opt-out provisions
- leaving existing customers on current tariffs but assigning new customers to cost reflective tariffs (subject to appropriate metering) and allowing opt-out provisions

- mandatorily assigning customers to cost reflective tariffs wherever appropriate metering is available (with no opt-out provisions).

Our current view is that, for the next round of tariff structure statements, default assignment to cost reflective tariffs with opt-out provisions should be adopted over opt-in arrangements. This is because it would better contribute to compliance with the distribution pricing principles by providing more appropriate price signals to retailers. Each tariff structure statement should show movement towards more cost reflective tariffs, taking into account of possible customer impacts.¹¹⁵ We are also open to considering mandatory tariff assignment arrangement proposals (i.e. no opt-out provisions), as long as distributors have addressed the customer impact principle in the NER.

In the next round of tariff reform we consider new customers across all networks should be assigned by default to cost reflective tariffs.¹¹⁶ By ‘new’ customer, we mean customers in new premises who are connecting their premise to the network for the first time. This is because:

- After 1 December 2017, newly connected premises must have a smart meter installed—this means these customers will have meters which are capable of calculating cost reflective network tariffs.¹¹⁷
- These customers are also at a point where they are about to make new investment decisions and they should make these decisions on the basis of cost reflective network tariffs—these decisions may include the energy efficiency of their building design, whether they install solar PV or batteries in their new home or office, and decisions over any new appliances they are buying as part of moving to a new premise.
- Alignment with the metering contestability rule change also means that this change occurs in an environment where the meter is provided by or through a customer's retailer on a competitive basis. The meter will no longer be a regulated service provided by the distributor. While the NER prescribe minimum functional requirements for these meters, retailers can also offer customers smart meters with a range of other additional features. The installation of smart meters by retailers may increase the range of services and pricing options that are available to customers, and therefore help customers respond to retail packages that incorporate the new network tariffs.¹¹⁸

On the other hand, existing customers may have made significant investments on the basis of current tariff structures. Further, many existing customers (outside of Victoria) may not have appropriate metering technology in place to enable uptake of more cost

¹¹⁵ NER, cl. 6.18.5(e) – (h).

¹¹⁶ NER, cl. 6.18.5(c).

¹¹⁷ Australian Energy Market Commission, *National Electricity Amendment (Expanding competition in metering and related services) Rule 2015*, November 2015.

¹¹⁸ NER, cl. 6.18.5(h).

reflective network tariff options. However, for existing customers, there are two approaches we consider meet the need to move customers onto cost reflective network tariffs¹¹⁹ while balancing the customer impact¹²⁰ considerations. We encourage distributors to focus on either or both of these approaches. These two approaches are outlined below.

Firstly, for existing customers making significant new investments we consider these customers could be assigned by default to cost reflective network tariffs. This approach should be technology neutral—for example, we did not approve SAPN’s proposed ‘solar tariff’.¹²¹ We consider the time of making new investments is a good time to transition customers to cost reflective tariffs. This approach gives customers the opportunity to consider their new investment with regard to the implications of the new tariff they will be assigned—that is, the network cost implications of their usage.¹²² Significant new investments may include:

- change from single to three phase connection
- new solar photovoltaic connection
- new battery
- new electric vehicle.

Some of these upgrades are identifiable to distributors; others may require additional reporting arrangements.¹²³

In moving to default assignment to cost reflective tariffs in the next tariff structure statement period, distributors are required to address the customer impact provisions of the NER.¹²⁴ One option suggested by SAPN, would be to assign residential and small business customers (with smart meters) to a cost reflective tariff only after at least one or two years of interval metering data is available.¹²⁵ Our preliminary view is that we are open to this approach as we expect it would enable the end customer to make more informed decisions over what retail offer they choose because they would have a better understanding of their current consumption patterns.

Secondly, for existing customers who remain on flat consumption or block tariffs, we consider the relative levels of these network tariffs could be increased compared to more cost reflective tariff options. This is to encourage customers to choose retail offerings which voluntarily opt-in to cost reflective network tariffs.

¹¹⁹ NER, cl. 6.18.5(c).

¹²⁰ NER, cl.6.18.5(h).

¹²¹ AER, *Draft decision, Tariff structure statement proposal— SA Power Networks*, August 2016, pp. 43–44.

¹²² NER, cl.6.18.5(h).

¹²³ i.e. SAPN has used the change from single to three phase and the installation of a new inverter as a trigger for reassignment to cost reflective tariffs.

¹²⁴ NER, cl.6.18.5(h).

¹²⁵ SAPN, *Revised tariff structure statement proposal – part B*, October 2016, p. 123.

In our view all customers should eventually be on cost reflective tariffs as this will provide more appropriate pricing signals to retailers. By cost reflective network tariffs we mean network tariffs which incorporate higher charges during times of network congestion and lower charges during times when the network is not congested. Demand and time-of-use tariffs are examples of tariffs with this feature. In contrast, we consider flat rate, inclining block or declining block network tariffs are not cost reflective. This is because the charges under these tariffs are unrelated to times of network congestion.

Emerging technologies—batteries and electric vehicles

In the near future some customers may change their pattern of use by installing battery storage at their premises. The low but increasing popularity of electric vehicles may also have an impact on the grid. If the incentives are right, with appropriate pricing signals, battery storage and electric vehicle adoption could bring many benefits to the electricity network. They have the potential to help manage peak demand, reducing the need to grow the network, ultimately relieving pressure on electricity prices. On the other hand, if the incentives are not right, the increase in batteries and electric vehicles could lead to inefficient investments—both by the network and end customers—with these inefficient costs paid for by end customers. This consideration is supported by TasNetworks.¹²⁶

Customers with batteries and electric vehicles are likely to be beneficiaries of cost reflective tariffs. Even without opt-out arrangements, it is possible these customers may opt-in by choosing retail tariffs based on cost reflective network tariffs. This is because batteries and electric vehicles have the capacity to store energy at off-peak times and inject energy at peak times—this could assist in reducing a household's use of electricity drawn from the grid at peak times. The effect could be to reduce network demand, all else equal.

It would be useful to monitor the extent to which customers with batteries and electric vehicles choose retail tariffs that are based on the more cost reflective network tariffs. If uptake is not forthcoming, changes to reporting arrangements may be desirable to make these customers identifiable to distributors. This could then be used as a basis for default tariff assignment to cost reflective network tariffs in the future if necessary.

We invite distributors and industry, as part of the development of the next phase of tariff structure statements, to consider whether triggers, such as the installation of electric vehicles and batteries should be considered for reassignment. Further:

- What impediments (if any) would need to be addressed to allow this to occur?
- Are additional changes required to incentivise customers to charge or discharge their batteries or electric vehicles at efficient times?

¹²⁶ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 22–23.

Even with the above changes, it is likely the speed of tariff reform will still be gradual. This is because it will depend on customer and retailer driven factors, as only a proportion of customers over any given period will be have a new connection to the network or significantly change their connection. Nonetheless the pace of reform will likely be quicker than if chief reliance is placed on an opt-in only approach.

Tariff reform is a long term process. We consider the distribution pricing principles require movement towards more cost reflective tariffs with every tariff structure statement proposal over upcoming regulatory control periods.¹²⁷

19.4.3 Controlled and uncontrolled load tariffs

We approve TasNetworks' proposed continuation of its controlled and uncontrolled load tariffs for the 2017–19 regulatory control period. These tariffs are primarily used for water heating and space heating for low voltage customers.

We approved the same tariffs in our draft decision.¹²⁸

19.4.3.1 Tariff design

The tariff design of the controlled and uncontrolled load tariffs include a service charge and a flat consumption charge. These tariffs are set out in table 19.7.

The controlled load tariffs utilise the network at off–peak times at a reduced rate. However, the uncontrolled load tariff is not cost reflective as it allows consumption at off-peak rates at all times, including peak periods. TasNetworks also noted this tariff is not cost reflective because it is subsidised by other customers.¹²⁹ The cross subsidy is due to historical policy settings which TasNetworks acknowledged are no longer relevant or compliant with the current regulatory arrangements.

TasNetworks proposed to remove the cross subsidy by aligning the uncontrolled load tariff to be at parity with the residential low voltage general network tariff.¹³⁰

TasNetworks considered this an appropriate approach as there is no distinguishable difference between the customers on these tariffs.

We maintain our draft decision consideration to approve TasNetworks' proposed approach to remove the cross subsidy over time as a movement along the cost reflectivity spectrum.¹³¹ The removal of the cross subsidy will allow tariffs to be based on the cost of providing the service.¹³²

¹²⁷ NER, cl. 6.18.5(b) to (d).

¹²⁸ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 31–32.

¹²⁹ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, pp. 6–7.

¹³⁰ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 7.

¹³¹ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, p. 32.

¹³² NER, cl. 6.18.5(f).

Table 19.7 TasNetworks' controlled and uncontrolled load tariffs

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Uncontrolled low voltage heating	New/Existing	Optional	Type 6 is the minimum requirement	Fixed charge + flat usage charge	Tariff is cross subsidised by other customers. Tariff only available with Residential low voltage general, Business low voltage or Business low voltage nursing homes
Controlled low voltage energy – Off peak with afternoon boost	New/Existing	Optional	Type 6 is the minimum requirement	Fixed charge + flat usage charge	Available for nine hours between 10PM–7AM with a further two hours between 1PM–4:30PM Tariff only available with Residential low voltage general, Business low voltage or Business low voltage nursing homes
Controlled low voltage energy– with night period	New/Existing	Optional	Type 6 capable of recording time of use data and ability to control energy flows is the minimum requirement	Fixed charge + flat usage charge	Available between 10PM–7AM Tariff only available with Residential low voltage general, Residential low voltage time of use, Business low voltage or Business low voltage time of use

19.4.3.2 Tariff assignment

We approve TasNetworks' proposed tariff assignment policy for the controlled and uncontrolled load tariffs.

The controlled and uncontrolled load tariffs are optional for both new and existing customers. The tariffs are not available as a single use tariff but rather available for customers who also have a general network tariff. A type 6 meter is the minimum requirement for these tariffs.

TasNetworks noted as part of its stakeholder engagement one of the options it proposed was to remove the uncontrolled low voltage network tariff to all new customers.¹³³ However, feedback it received during its customer engagement was not supportive of this approach. As a result, it changed its strategy to rebalance the tariff to be more cost reflective.

19.4.3.3 Future direction

¹³³ TasNetworks, *Tariff structure statement*, January 2016, p. 26.

TasNetworks stated it will realign the uncontrolled load tariff with the residential low voltage general network tariff by the end of the 2024–29 regulatory control period. However, it will seek to rebalance the tariffs more quickly where revenue determinations and price impacts allow. We approve of this approach by TasNetworks.

We also note the controlled and uncontrolled load tariffs are not available to customers on the time of use consumption and demand tariffs. We would expect this practice to continue for future regulatory control periods.

19.4.4 Low voltage business customers

We approve the low voltage business customer tariffs for the 2017-19 regulatory control period as contributing to achieving compliance with the distribution pricing principles. These tariffs are mostly paid by small to medium sized businesses. We approved the same tariffs in our draft decision.¹³⁴

Existing tariffs for customers assigned to these tariffs are being realigned to make them more cost reflective, and a new opt-in demand tariff is to be introduced to signal the impact of customers' usage decisions on the network. We note that demand is a driver of network costs, so tariffs which attempt to signal demand are a move along the cost reflectivity spectrum.

This does not mean that they are the only tariff types that are cost reflective. Locational or geographic prices could also be used in future to send more targeted price signals to retailers and end use customers.

The revised tariff structure statement sets out TasNetworks intent to amend tariffs as part of its tariff reform journey. These tariffs will involve the removal of cross subsidies and be aligned with the general purpose tariff (called TAS22). The affected tariffs are:

- Business low voltage nursing homes network tariff (TAS34), which is closed to new connections.
- General network – Business curtilage network tariff (TASCURT). This tariff is closed to new connections.

Our draft decision approved the removal of cross subsidies within low voltage business tariffs. This is on the basis that the introduction of a demand tariff for the low voltage customers and the realignment of legacy tariffs contributed to achievement of compliance with the distribution pricing principles.¹³⁵ The realignment of existing tariffs removes the cross subsidies between tariffs and customers. By realigning tariff rates, pricing distortions are reduced for all customers, helping to achieve efficient consumption and demand patterns in the long run.

¹³⁴ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 32–36.

¹³⁵ NER, cl 6.18.5.

The new time of use demand tariff will consist of the following elements¹³⁶:

- Service charge—this is fixed service to property charge
- Peak demand charge—operates during the peak demand window
- Off peak demand charge—this is charged at a lower rate than the peak demand charge.

The demand component will be charged based on the average of demand over a 30 minute interval. The highest recorded demand during the 30 minute intervals in the peak period charging window will be the amount of demand that is charged to the customer. During weekends only the off-peak tariff rate will be charged.

TasNetworks will also bill retailers on a monthly basis for those customers that choose the opt-in demand tariff. This amendment from its initial tariff structure statement is being introduced to provide customers with more timely information about their demand and consumption levels.

Customers remaining on their existing legacy tariffs will continue to receive bills on a quarterly basis.¹³⁷ However we note that TasNetworks implies that over time, its intention is to move towards more regular billing cycles, to enhance the opportunity for customers to respond quickly to price signals. We support this approach as do various stakeholders.¹³⁸

This is most relevant where a customer has a smart meter and other devices like in-home displays or web based applications that can provide real time data. This will enable customers to see which appliances are driving their electricity use at any point in time. They can then adjust behaviour to shift that load or reduce it in response to price signals.

In this way, a customer on the demand tariff will be rewarded for reducing their demand during the peak charging period. This will reduce pressure on the network and mitigate the need for costly investment upgrades potentially required to otherwise meet increasing demand within set reliability limits. We consider that tariffs which help to achieve such an outcome contribute to achieving compliance with the distribution pricing principles.¹³⁹

¹³⁶ TasNetworks, *Overview—Improving the way we price our services, Tariff structure statement for period 1 July 2017 to 30 June 2019*, December 2016, p. 11.

¹³⁷ TasNetworks, *Overview—Improving the way we price our services, Tariff structure statement for period 1 July 2017 to 30 June 2019*, December 2016, p. 11.

¹³⁸ TasCOSS, *Submission on AER Issues Paper: Tariff Structure Statement proposals (TasNetworks)*, 29 April 2016, pp. 2–3; Tasmanian Renewable Energy Alliance, *TREA response to AER March 2016 issues paper: TasNetworks tariff structure statement proposals*, 5 May 2016, pp. 3–4; TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, December 2016, p. 2; ATA, *Submission to draft decision: TasNetworks tariff structure statement*, December 2016, p. 2.

¹³⁹ NER, cl 6.18.5.

We acknowledge that some stakeholders, such as Tasmanian Renewable Energy Alliance, consider that a demand tariff is not the only means to achieve a cost reflective tariff. They were concerned that customers might find it difficult to understand, and potentially confusing, and that a change in customer behaviour may not occur under this new pricing regime.¹⁴⁰

We agree that a demand tariff is not the only option for developing a cost reflective tariff. Others could include time of use tariffs that charge based on energy throughput (kWh) at different times of the day. Critical peak charges, or rebates, could also apply during extreme days on the network. In this case, prices could be many times higher than for all other periods when the network is not facing a potential network constraint. Other options could be to charge customers based only on their location within the network, with only those locations most heavily affected by a network constraint or high maximum demand being charged peak tariffs. All other locations could maintain a much lower charge.

All these measures have the challenge of customer education and acceptance. With the exception of time of use tariffs, the other tariff types have been used only sparingly in the national electricity market. They are likely to perhaps face a bigger hurdle for energy networks and retailers to overcome when engaging with their customers about new tariffs.

Distributors have therefore been given discretion under the rules to propose tariffs that they consider meet the pricing principles. Our role is to assess if those proposal meet the principles. That does not mean of course, that some other groups or set of tariffs could not also meet the pricing principles.

We note that TasNetworks has decided to use demand charges as the basis for its new cost reflective tariffs and wants to approach this over an extended transition period. It will use this time to educate network customers about the new tariffs, explore data collection options and customer behavioural responses, which might enable refinement of future tariffs. Demand, measured in kW, is also a more prevalent driver of a distribution networks costs than consumption alone.

We encourage all distributors, including TasNetworks, to consider other tariff options for future tariff structure statements. This is to ensure that with each new proposed tariff structure that improvements to cost reflective price signals are being made and introduced.

Some stakeholders were concerned by the proposed increase in fixed charges. Nekon noted this in two submissions.¹⁴¹ Its contention was that a customer might not be able to respond to this charging regime.

¹⁴⁰ Tasmanian Renewable Energy Alliance, *Fair and effective tariff reform for Tasmania*, 1 December 2016, 3.

¹⁴¹ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 7.

Networks need to recoup the investment they have made in augmenting and replacing their assets, and in providing ongoing operation and maintenance of the network. Many of the costs are fixed, and remain regardless of how much consumption or demand occurs on the network. These residual costs are usually recovered through a fixed supply charge and, or, a variable energy consumption charge.

Distributors throughout the national electricity market have been using an increase in the fixed supply charge to recoup some of their residual costs. Energy consumption charges (i.e. kWh based charging) have also been used in other jurisdictions to allocate residual costs.

In addition, TasNetworks acknowledges that the tariff impacts for individual customers cannot be quantified definitively at present.¹⁴² This is because the information from accumulation meters does not provide it with the rich data to compare with a case of a customer on a demand tariff (which requires a meter delivering interval data).

Nevertheless, TasNetworks did provide some updated estimates, and considered that an average low voltage business customer switching to the demand tariff would see network bill reductions.¹⁴³ More relevantly, this is despite the large increase in percentage terms for the fixed supply charge, which nonetheless still only amounts to around \$300 per annum. That is, the fixed supply charge will still only be a relatively small fraction of a customer's network bill.

Over time, TasNetworks implies that it will seek to reduce the number of tariffs it has available for customers, to simplify its suite of tariffs. However, this is anticipated to take several years and will not be an immediate outcome of its efforts to reform its overall tariff strategy.

19.4.4.1 Tariff design

TasNetworks' has two tariff classes for low voltage business customers—small and large. Similar to the residential tariff class, TasNetworks proposed the continuation of currently available tariffs for both of these tariff classes over the 2017–19 regulatory control period. These tariffs will continue in their current tariff design.

TasNetworks noted two continuing small business low voltage tariffs are not currently cost reflective. Consistent with the uncontrolled load tariff, the Business low voltage nursing home tariff and the General network–business curtilage tariff has been historically cross subsidised by other customers. For both of these tariffs, TasNetworks proposed to address this by rebalancing these tariffs, rather than a change to their tariff design.

¹⁴² TasNetworks, *Tariff structure statement: Background and explanation – Regulatory control period 1 July 2017 to 30 June 2019*, December 2016, p. 70.

¹⁴³ TasNetworks, *Tariff structure statement: Background and explanation – Regulatory control period 1 July 2017 to 30 June 2019*, December 2016, p. 71.

In addition to the continuing tariffs, TasNetworks proposed to introduce the new time of use demand tariff for both the small and large low voltage business customers. The designs of the demand tariffs are exactly the same as the time of use demand tariff being introduced for residential customers. These demand tariffs will be optional.

Continuing low voltage business tariffs

We approve TasNetworks continuing to offer its previous tariffs to business customers as contributing to compliance with the distribution pricing principles.

The existing suite of tariffs is set out in Table 19.8 and these are long standing tariffs that customers have become accustomed to. Some of these, such as the nursing homes tariff and the business curtilage tariff, will be realigned to make them more cost reflective. They are also now closed to new connection customers. Customers will be able to choose the business low voltage general tariff as their first option, or alternatively opt-in to the low voltage (or large low voltage) time of use demand tariff.

Table 19.8 TasNetworks' continuing low voltage business tariffs

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Business low voltage general	New/Existing	Default for new/existing customers	Type 6 is the minimum requirement	Fixed charge + flat usage charge	
Business low voltage nursing homes	Existing (must be registered as a nursing home)	Closed to new customers	Type 6 is the minimum requirement	Fixed charge + declining block usage charges	First charging block = first 500kWh per quarter Second charging block = remaining consumption
General network–Business curtilage	Existing	Closed to new customers	Type 6 is the minimum requirement	Fixed charge + flat usage charge	Must also be taking supply under the Business low voltage general tariff
Business low voltage time of use	New/Existing	Optional. Default for new nursing home customers	Type 6 capable of recording time of use data is the minimum requirement	Fixed charge + time of use charges	Peak = 7AM–10PM weekdays Shoulder = 7AM–10PM weekends Off peak = All other times
Business low voltage kVA Demand	New/Existing	Default for new/existing customers	Type 6 is the minimum requirement	Fixed charge + flat usage charge + all demand charge	Maximum demand measured in kilovolt–Amperes (kVA)

New time of use demand tariff for low voltage customers

TasNetworks proposed to introduce two new time of use demand tariffs for low voltage customers—one tariff for small low voltage business customers and one tariff for large low voltage business customers.

We are satisfied the introduction of the demand tariffs contributes to the achievement of compliance with the distribution pricing principles. These demand tariffs will allow the low voltage business customers the ability to manage peak load on the network which will ultimately assist in greater network utilisation and minimise future investment costs. These new demand tariffs show movement towards cost reflectivity and away from consumption tariffs.

The design of the time of use demand tariffs for the low voltage business customers is the same as the residential customers. That is, the demand tariffs will include a fixed service charge, a peak demand charge and an off peak demand charge. The demand charges will be based on a customer's highest 30 minute demand over a billing period for each charging window—peak and off peak. The peak demand charges are set at a higher rate than the off peak demand charges, signalling to customers the value of using the network, particularly at peak times. Table 19.9 shows the characteristics of these new demand tariffs.

Table 19.9 TasNetworks' low voltage business time of use demand tariffs

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Low voltage time of use demand	New/Existing (small low voltage customers)	Optional	Type 6 capable of recording time of use demand data in half-hourly blocks is the minimum requirement	Fixed charge + peak and off peak demand charges	Demand charges based on the highest 30 minute demand incurred for each charging window over a billing period (typically quarterly) Peak window = 7–10AM, 4–9PM weekdays, Off peak window = All other times
Large low voltage time of use demand	New/Existing (large low voltage customers)	Optional	Type 6 capable of recording time of use demand data in half-hourly blocks is the minimum requirement	Fixed charge + peak and off peak demand charges	Demand charges based on the highest 30 minute demand incurred for each charging window over a billing period (typically quarterly) Peak window = 7–10AM, 4–9PM weekdays, Off peak window = All other times

19.4.4.2 Tariff rebalancing

Consistent with our draft decision, we approve TasNetworks' proposed realignment of the following tariffs to remove long standing cross subsidies between different customer groups for our final decision:¹⁴⁴

- Business low voltage nursing home tariff

¹⁴⁴ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, pp. 6–7.

- General network – business curtilage tariff
- Uncontrolled low voltage tariff.

We are satisfied that there is no apparent differentiation in customer type or load for these tariffs and removing these cross subsidies is a movement along the cost reflectivity spectrum. This contributes to the achievement of compliance with the distribution pricing principles. By realigning tariff rates that reduce cross subsidies, pricing distortions are reduced for all customers, helping to achieve efficient consumption and demand patterns in the long run. It means that all customers are contributing to the recovery of a distributor's efficient network costs in proportion to their electricity usage. We acknowledge these cross subsidised tariffs are a result of historical policy decisions which are no longer relevant to TasNetworks or compliant with the current regulatory requirements.

The TSBC and David Headberry submitted support for TasNetworks' removal of cross subsidies from existing tariffs.¹⁴⁵ However, the TSBC raised concern with the 15 year transition period which it considered should be reduced.¹⁴⁶

We observe that TasNetworks will make these tariffs more cost reflective over a shorter time period, depending on its future proposed revenue requirements. Customer feedback during future rounds of tariff structure statement consultation will also inform the speed of tariff reforms.

We approve the proposed realignment to be undertaken over a 15 year period which began in 2014–15 because the gradual progression will allow predictability in customer pricing.¹⁴⁷ However, like TBSC, we encourage TasNetworks to seek realignment under a shorter time period where circumstances allow.

19.4.4.3 Future direction

As noted, TasNetworks stated it will unwind the cross subsidies and rebalance the applicable low voltage business tariffs by the end of the 2024–29 regulatory control period. However, it will seek to rebalance the tariffs more quickly where revenue determinations and price impacts allow. We consider TasNetworks next tariff structure statement should provide an update on the timeframe for this progression.

Also, while we approve these low voltage demand tariffs in their proposed design, we encourage TasNetworks to collect data during this initial phase of tariff reform to determine whether an alternative design could provide more detailed cost reflective price signals in future periods. A more targeted approach for low voltage customers may be more reliable than the use of a 'one size' fits all approach to demand tariffs.

¹⁴⁵ TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, pp. 16-17; CCP4 - David Headberry, *Submission on TasNetworks' revised proposal*, 21 December 2016, p. 40.

¹⁴⁶ TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 18.

¹⁴⁷ Because tariff realignment started in 2014-15, this means the transition period will actually take another 12 years to complete, rather than 15 years.

19.4.5 Irrigation customers

We approve TasNetworks' proposed irrigation customer tariff for the 2017–19 regulatory control period because we are satisfied they contribute to the achievement of compliance with the distribution pricing principles. We approved the same tariff in our draft decision.¹⁴⁸

TasNetworks proposed the continuation of a time of use tariff for irrigation customers. The design of this tariff consists of a fixed service charge and a number of variable charges for different periods of the day—peak, off peak and shoulder. The tariff also features varying seasonal time of use charges. We consider this tariff is relatively cost reflective given these design features.

Recent changes to jurisdictions tariff structures have caused some concerns for the irrigation and agricultural sector. This was most notable in Queensland, where Canegrowers were not convinced that Ergon Energy seasonal time of use energy and seasonal time of use demand tariffs represented the most effective tariff design.¹⁴⁹

The intention of TasNetworks in both its initial and revised statements is to slowly unwind cross subsidies for the irrigation sector. This will mean in some instances higher tariffs, relative to what they would have been in the past. The Tasmanian Farmers and Graziers Association were concerned about such moves having a negative impact on economic growth and the sector's ability to develop and enhance the productive capacity of the agricultural industry.¹⁵⁰

TasNetworks notes that the new time of use demand tariffs available to low voltage and irrigation customers will be opt-in only for the 2017–19 tariff structure statement period. This is a means by which customer impacts are being mitigated, so that those customers potentially affected can consider if a new demand based tariff is suitable for them in future.

Customers should contribute equally to shared network investments. Without more granular localised network price signals, demand tariffs will necessary still be averaged. This is typical of the way all electricity network services have been priced in recent years. Cost reflective prices make this averaging process more equitable. What this means is that irrigation customers share with other low voltage business customers some of the costs to serve and upgrade the electricity network.

TasNetworks will apply a long run marginal cost signal via the demand tariff. It will recoup its remaining costs via the service to property charge (fixed charge) and where

¹⁴⁸ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 36–37.

¹⁴⁹ AER, *Final Decision, Queensland distribution businesses—Tariff Structure Statement 2017–20*, February 2017, p.p. 7, 9, 13, 47.

¹⁵⁰ Tasmanian Farmers and Graziers Association, *Submission on TasNetworks' revised proposal*, December 2016, p. 1.

applicable, the variable energy consumption charges. This applies to the legacy irrigation tariff (TAS75).

The Graziers Association states that for the current 2017–19 tariff structure statement period, it still has reservations about new demand tariffs on an opt-in basis.¹⁵¹ This seems to be on the basis of requiring more information from TasNetworks.

TasNetworks advised during discussions with us that it intends to obtain further load and behavioural information over the coming years to attempt to further quantify and establish customer impacts from its new tariffs.¹⁵² This includes for the new time of use demand tariffs for low voltage business customers. Such information should be used to assist the irrigation sector understand its electricity usage and how it can make effective use of new cost reflective demand tariffs into the future.

We consider that an opt-in cost reflective tariff is a conservative move along the cost reflectivity spectrum. Experience has been that opt-in approaches generally only see a small customer uptake and therefore minimal customer behavioural change. Relying on opt-in approaches will likely result in minimal tariff reform in the medium term.

Nevertheless, irrigation customers will be able to remain on their legacy tariff but will see a change in the relative price of this tariff. This is because TasNetworks will seek to realign the existing irrigation tariff (shown in Table 19.10) closer to a cost reflective level. Mitigating some of the tariff impacts is the relatively slow process of aligning tariffs. This is intended to be complete by around 2029. In the meantime, this will give the distributor time to provide irrigation customers with additional information about the impacts of the demand tariff and to help those affected businesses to adjust their electricity consumption and demand behaviour.

We consider this opt-in arrangement does contribute to achievement of compliance with the distribution pricing principles. We have approved it in other jurisdictions.¹⁵³

¹⁵¹ Tasmanian Farmers and Graziers Association, *Submission on TasNetworks' revised proposal*, December 2016, p.2.

¹⁵² Meeting between AER representatives and TasNetworks' representatives, Melbourne, 17 March 2017.

¹⁵³ See for instance tariff structure statements for New South Wales, Victorian, Queensland and South Australian distributors, available on the AER website.

Table 19.10 TasNetworks' irrigation low voltage business tariff

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Irrigation low voltage time of use	New/Existing	Existing irrigation customers	Type 6 capable of recording time of use data is the minimum requirement	Fixed charge + seasonal time of use charges	<p>Winter: Peak = 7AM–10PM weekdays, Shoulder = 7AM–10PM weekends, Off peak = All other times</p> <p>Summer: Shoulder = 7AM–10PM weekdays, Off peak = All other times</p>

19.4.6 High voltage business customers

We approve TasNetworks' proposed high voltage business customer tariffs for the 2017–19 regulatory control period because we are satisfied they contribute to the achievement of compliance with the distribution pricing principles. We approved the same tariffs in our draft decision.¹⁵⁴

In our draft decision we accepted the proposed tariffs for high voltage customers as contributing to the achievement of compliance with the distribution pricing principles.

However, we did seek explanation from TasNetworks as to the impacts of these customers from some of the proposed increases in service charges. We considered TasNetworks had not demonstrated reasonable consideration of the impact of the proposed increases in fixed charges on high voltage business customers. We consider TasNetworks has addressed this issue in its revised tariff structure statement. Our discussion on this issue is set out in section 19.4.7.3.

Networks do have a significant fixed cost structure which needs to be recovered from network users. TasNetworks is using the fixed service charges to recoup costs associated with the connection and ongoing management of each customer.¹⁵⁵

We note that with a flat or declining revenue requirement over the coming regulatory control period, there is more ability for TasNetworks to adjust its charging parameters to align with more cost reflective pricing principles without causing substantial upward adjustments to tariffs.

We did not accept TasNetworks initial tariff structure statement because we considered TasNetworks had not demonstrated reasonable consideration of the impact of the

¹⁵⁴ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, p. 43.

¹⁵⁵ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 17.

proposed increases in fixed charges on high voltage business customers. We consider TasNetworks has addressed this issue in its revised tariff structure statement. Our discussion on this issue is set out in section 19.4.7.3.

19.4.6.1 Tariff design

TasNetworks' proposed the continuation of its high voltage business customer tariffs in their current design. We consider these tariffs are cost reflective given the tariffs feature elements such as time of use charges, demand based charges and seasonal variations. We also note the individual calculation tariffs have locational price signals.

Table 19.11 TasNetworks' high voltage business tariffs

Tariff	Customer type	Assignment	Meter type	Tariff structure	Notes
Business high voltage kVA specified demand	New/Existing	Default for new/existing customers	Metering of consumption (and demand) for an installation occurs at the high voltage connection point and requires a meter capable of recording interval data.	Fixed charge + seasonal time of use charges + demand charges	Tariff applies to customers taking supply at high voltage, with an expected any-time maximum demand (ATMD) less than 2 megavolt-Amperes (MVA) Negotiated specified demand
Business high voltage kVA specified demand >2MVA	New/Existing	Default for new/existing customers	Metering of consumption (and demand) for an installation occurs at the high voltage connection point and requires a meter capable of recording interval data.	Fixed charge + seasonal time of use charges + demand charges	Tariff applies to customers with an ATMD in excess of 2.0 MVA Negotiated specified demand

19.4.6.2 Tariff assignment

We approve TasNetworks' proposed tariff assignment for the high voltage business tariffs. The tariffs are available for any customer taking supply at high voltage.¹⁵⁶ Customers must supply their own transformers and switchgear. We consider this assignment takes into account the nature and extent of a customer's usage and connection to the network.

19.4.7 Tariff levels

¹⁵⁶ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 34.

An important feature of this final decision is the concept of long run marginal cost. Long run marginal cost is equivalent to the forward looking cost of a distributor providing one more unit of service, measured over a period of time sufficient for all factors of production to be varied.¹⁵⁷ Long run marginal cost could also be described as a distributor's forward looking costs that are responsive to changes in electricity demand.

The NER requires network tariffs to be based on long run marginal cost.¹⁵⁸ However, not all of a distributor's costs are forward looking and responsive to changes in electricity demand. If network tariffs only reflected long run marginal cost, a distributor would not recover all its costs. Costs not covered by a distributor's long run marginal cost are called 'residual costs'. The NER requires network tariffs to recover residual costs in a way that minimises distortions to the price signals for efficient usage that would result from tariffs reflecting only long run marginal costs.¹⁵⁹

This section sets out our considerations on TasNetworks' approach to calculating long run marginal cost, passing those costs through to customers and residual costs.

19.4.7.1 Calculation and recovery of long run marginal cost

When tariffs accurately reflect the marginal or forward looking cost of increasing demand, consumers may make informed choices about their electricity usage. Tariff reform seeks to promote additional investment in the network by distributors only when consumers value increased demand more than the cost of delivering the additional network capacity necessary to meet that demand.

We are satisfied that TasNetworks' approach to estimating long run marginal cost and passing it through to customers contributes to the achievement of compliance with the distribution pricing principles.¹⁶⁰ We note that forward looking price signals will, on average, improve over time as less cost reflective tariffs are progressively phased out. TasNetworks' application of forward looking price signals within its more cost reflective tariffs, particularly demand tariffs, appropriately matches costs to tariff components.

We received no comments from stakeholders on TasNetworks' long run marginal cost methodology and calculation.

TasNetworks used the average incremental cost approach to derive its long run marginal cost estimates. In its approach, TasNetworks identified forecast works (projects and programs) required to meet the forecast cumulative growth in maximum demand on the network over the next 10 years. TasNetworks calculated its long run

¹⁵⁷ NER, cl 10 Glossary defines long run marginal costs as the cost of an incremental change in demand for direct control services provided by a distribution network service provider over a period of time in which all factors of production required to provide those direct control services can be varied.

¹⁵⁸ NER, cl. 6.18.5(f).

¹⁵⁹ NER, cl. 6.18.5(g)(3).

¹⁶⁰ NER, cl. 6.18.5(f).

marginal cost estimates as the ratio of the present value of augmentation capex and associated operating costs to the present value of growth in demand.¹⁶¹

TasNetworks' reasons for adopting this approach included:¹⁶²

- the approach relied on information already available, and included as part of its overall 2017–19 revenue proposal
- distributors throughout Australia commonly employed the approach as it is generally considered to be well suited to situations where there is a fairly consistent profile of investment over time to service growth in demand.

Table 19.12 summarises TasNetworks' estimates of long run marginal cost for its tariffs, by tariff class. TasNetworks proposed to recover revenue from long run marginal costs through the demand based component of its tariffs. TasNetworks stated it set these demand charges equal to (or approaching) TasNetworks' estimates of long run marginal cost for each tariff. TasNetworks stated such demand-based charges will send a strong signal to customers about the impact of their usage decisions on future costs of the network.¹⁶³

Table 19.12 TasNetworks' long run marginal cost estimates by tariff class

Tariff class	Tariff	LRMC (\$/kW)
High Voltage	Business High Voltage kVA Specified Demand (TASSDM)	70
	Business High Voltage kVA Specified Demand >2MVA (TAS15)	110
Irrigation	Irrigation Low Voltage Time of Use (TAS75)	138
Large Low Voltage	Business Low Voltage kVA Demand (TAS82)	89
	Large Low Voltage Commercial Time of Use Demand (TAS89)	89
Small Low Voltage	Low Voltage Commercial Time of Use Demand (TAS88)	129
	Business Low Voltage General (TAS22)	165
	Business Low Voltage Nursing Homes (TAS34)	91
	General Network – Business, Curtilage (TASCURT)	165
Residential	Business Low Voltage Time of Use (TAS94)	129
	Residential Time of Use Demand Tariff (TAS87)	182
	Residential Low Voltage General (TAS31)	182
	Residential Low Voltage PAYG (TAS101)	182

¹⁶¹ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 98–99.

¹⁶² TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 18.

¹⁶³ TasNetworks, *Response to AER Issues Paper: Tariff Structure Statements proposals – TasNetworks*, April 2016, pp. 15–16.

	Residential Low Voltage PAYG Time of Use (TAS92)	182
	Residential Low Voltage Time of Use (TAS93)	182
Uncontrolled Energy	Uncontrolled Low Voltage Heating (TAS41)	122
Controlled Energy	Controlled Low Voltage Energy – Off Peak with afternoon boost (TAS61)	146
	Controlled Low Voltage Energy – Night period only (TAS63)	146
Unmetered	Unmetered Supply Low Voltage General (TASUMS)	167
Street Lighting	Unmetered Supply Low Voltage Public Lighting (TASUMSSL)	167

Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 99–100.

AER assessment

Our final decision maintains our draft decision consideration.¹⁶⁴ We consider some elements of TasNetworks' method to estimate long run marginal cost contribute to compliance with the distribution pricing principles better than other elements. That said, taken as a whole, we are satisfied TasNetworks' method contributes to the achievement of compliance with the distribution pricing principles for this initial round of tariff reform.¹⁶⁵ We are satisfied the proposal complies with the requirements for tariffs to be based on long run marginal costs.¹⁶⁶

Accordingly, we have not made any changes to TasNetworks' method for this first tariff structure statement. Nonetheless, we elaborate here on the elements of TasNetworks' method we consider are less reflective of the distribution pricing principles. We do so to provide guidance to TasNetworks, and the industry more generally, on our views on the direction the industry should be heading to maintain compliance with the distribution pricing principles in the future. Tariff reform is a long term project, and we expect a trend towards greater cost reflectivity over time. Accordingly, in subsequent tariff structure statements, we envisage distributors would likely need to propose additional reforms in order to be compliant with the NER. In its next tariff structure statement, we encourage TasNetworks to make further improvements to its long run marginal cost estimation methods.

We consider the choice of overall approach or method TasNetworks used at this early stage of tariff reform—the average incremental cost approach—is compliant with the relevant distribution pricing principles. However, we encourage TasNetworks to continue to improve its method for estimating long run marginal cost. We also encourage TasNetworks to consider if asset replacement costs should also be included in future calculations of long run marginal cost.

¹⁶⁴ AER, *Draft decision: TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19: Tariff structure statement*, September 2016, pp. 44–45.

¹⁶⁵ NER, cl. 6.12.3(k).

¹⁶⁶ NER, cl. 6.18.5(f).

We discuss these improvements in more detail in the sub-sections that follow.

Average incremental cost approach

All distributors in the National Electricity Market used the average incremental cost approach to estimate long run marginal costs for their first tariff structure statements. We consider this approach contributes to the achievement of compliance with the distribution pricing principles for this first round of tariff structure statements.

On the other hand, we encourage distributors to continue to refine and improve their methods for estimating long run marginal cost so their tariffs better reflect their efficient costs of providing direct control services. This may entail modifying the average incremental cost approach to suit the distributor's particular stage in the tariff reform process. Alternatively, distributors may choose to adopt more sophisticated approaches, such as the Turvey approach, to estimate long run marginal cost in future tariff structure statements if they consider it appropriate.

The Energy Networks Association (ENA) submitted the average incremental cost approach is incapable of estimating how long run marginal cost might change where consumption or demand is falling in parts of the network. The ENA noted this is particularly relevant to the potential inclusion of replacement capex in long run marginal cost estimates (see our discussion in the 'definition of marginal cost' section below). The ENA did not consider this would be an issue when generating network-wide estimates of long run marginal costs. However, the ENA considered it can become problematic as distributors generate more localised estimates in future tariff reforms. The ENA suggested we devote resources to improve the estimation of long run marginal cost in all circumstances.¹⁶⁷

We agree with the ENA that the industry should devote resources to improve the estimation of long run marginal cost. We therefore encourage TasNetworks to make further improvements and refinements to its long run marginal cost methods in future tariff structure statements.

This process of improving estimates of long run marginal cost was envisioned during the rule change process for distribution pricing. The Australian Energy Market Commission (AEMC) noted the NER does not prescribe a particular method for estimating long run marginal costs. Rather, the NER focuses on providing guidance in terms of sending efficient pricing signals. This approach allows distributors to decide whether the benefits of using particular methods exceed the costs, depending on the stage of tariff reform.¹⁶⁸ For example, the AEMC noted the average incremental cost approach has relatively low information requirements, so distributors can implement it

¹⁶⁷ ENA, *Submission: Australian Energy Regulator draft decision on tariff structure statement proposals*, 7 October 2016, p. 3. This submission was for the tariff structure statement process for the NSW, ACT, SA and Queensland distributors. However, the discussion is equally relevant for TasNetworks' tariff structure statement.

¹⁶⁸ AEMC, *Rule determination: National electricity amendment (distribution network pricing arrangements) rule 2014*, 27 November 2014, pp. 129–130.

more readily. On the other hand, it produces highly averaged estimates of long run marginal cost and so may not signal network congestion as well as other approaches. More sophisticated approaches, such as the Turvey approach, can produce long run marginal cost estimates that better signal network congestion. However, such approaches have greater information requirements and are not as easily implemented.¹⁶⁹

On estimation approaches under falling demand, we note NERA's report to the AEMC also considered the average incremental cost method cannot estimate long run marginal costs under such conditions.¹⁷⁰ This appears to stem from the way NERA specified the calculation of long run marginal cost using this method. It involves taking the ratio of future expenditure required to serve demand (in present value terms) to the additional demand served (also in present value terms).¹⁷¹ Under this specification, NERA stated the denominator is undefined if there is decreasing demand.¹⁷²

By comparison, the Turvey approach compares the optimal expenditure required under the status quo demand condition with the optimal expenditure required under an alternative demand condition (all in present value terms).¹⁷³ Accordingly, NERA considered the Turvey approach can be applied where there is falling demand, as well as where there is increasing demand. If there is a demand decrement, we would expect the optimal expenditure to be lower than under the status quo, so the estimate of long run marginal cost is positive.¹⁷⁴

We note NERA stated the following regarding the estimation of avoidable cost:¹⁷⁵

To estimate the avoidable cost, a distributor should consider the forward looking costs that could be avoided if demand from the class of customers was to be reduced. Conceptually this is no different to applying the average incremental cost methodology with a decrement to demand.

This appears to be analogous to the measurement of long run marginal cost under the Turvey approach when there is a decrement in demand. It also suggests distributors may be able to adapt the average incremental cost method for situations where demand is decreasing by using a slightly different concept for the numerator (such as

¹⁶⁹ AEMC, *Rule determination: National electricity amendment (distribution network pricing arrangements) rule 2014*, 27 November 2014, pp. 129–130.

¹⁷⁰ NERA, *Economic concepts for pricing electricity network services: A report for the Australian Energy Market Commission*, 21 July 2014, p. 32.

¹⁷¹ NERA, *Economic concepts for pricing electricity network services: A report for the Australian Energy Market Commission*, 21 July 2014, p. 15.

¹⁷² NERA, *Economic concepts for pricing electricity network services: A report for the Australian Energy Market Commission*, 21 July 2014, p. 32.

¹⁷³ NERA, *Economic concepts for pricing electricity network services: A report for the Australian Energy Market Commission*, 21 July 2014, pp. 14–15.

¹⁷⁴ NERA, *Economic concepts for pricing electricity network services: A report for the Australian Energy Market Commission*, 21 July 2014, p. 15.

¹⁷⁵ NERA, *Economic concepts for pricing electricity network services: A report for the Australian Energy Market Commission*, 21 July 2014, p. 16.

avoidable cost due to a demand decrement).¹⁷⁶ This may be useful in cases where there is falling demand but the costs of implementing more sophisticated approaches like Turvey are likely to still outweigh the benefits.

In any case, the key message here is we expect distributors to refine their methods for estimating long run marginal cost in future tariff structure statements. As we noted above, we consider the way TasNetworks used the average incremental cost approach in this first round of tariff structure statements contributes to the achievement of compliance with the distribution pricing principles. However, this may not be the case in future tariff structure statements. We would expect the estimation methods to evolve as tariff reform progresses.

Definition of marginal costs

We encourage TasNetworks to further refine its definition of marginal costs in future tariff structure statements. As we discussed in our draft decision, we consider TasNetworks should investigate including replacement capex relevant to long run network planning in their estimates of long run marginal cost.

The NER defines long run marginal costs as the cost of an incremental change in demand over a period of time in which all factors of production can be varied.¹⁷⁷ We note that in the long run, the level of capacity is variable. When assets come to the end of their useful life, distributors have a choice of maintaining their current level of capacity, increasing capacity or decreasing capacity, depending on demand and use of the network. Distributors should not adopt a default position of maintaining existing capacity levels, especially where existing networks have spare capacity and where there are changing patterns of use. We consider long run marginal cost estimates should include replacement capital expenditure and associated operating expenditure. This promotes network capacity in the long run to be at a level that consumer's value.

In the draft decision, we noted TasNetworks intended to include forecast replacement expenditure in the calculation only when the expenditure increased capacity.¹⁷⁸ From the revised proposal, it does not appear that TasNetworks included replacement expenditure in calculating its long run marginal cost estimates. Rather, it included augmentation capital expenditure (and associated operating expenditure) only.¹⁷⁹ However, this reasoning overlooks the point made above that the level of network capacity (whether to increase, maintain or decrease) is not fixed in the long run.

The ENA agreed distributors should not maintain existing capacity levels as the default position in replacement planning decisions. However, the ENA submitted it is not

¹⁷⁶ Whether the resultant method is still strictly the average incremental cost method is another matter.

¹⁷⁷ NER, Chapter 10—Glossary.

¹⁷⁸ AER, *Draft decision: TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19: Tariff structure statement*, September 2016, p. 44; TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, p. 16.

¹⁷⁹ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 79.

appropriate to treat all replacement capex decisions equally. There are multiple drivers and circumstances within which asset replacement decisions are made.¹⁸⁰ For example, the ENA considered long run marginal cost estimates should not include replacement capex specifically required by regulatory obligations.¹⁸¹

We agree that distributors should not include all types of replacement capex in their estimates of long run marginal cost. Long run marginal costs are forward looking costs required to meet an incremental change in demand. Certain types of regulatory obligations, such as those requiring retro-fitting of specific types of assets for safety purposes, are not forward looking. They are also not required to meet an incremental change in demand. We agree distributors should classify such capex as residual costs.

On the other hand, this does not mean all capex required under 'regulatory obligations' should automatically be part of residual costs. For example, capex required to meet reliability standards can be forward looking and can be required to meet an incremental change in demand. Such capex should be part of long run marginal costs. We would add that neither should distributors include all types of augmentation capex in these marginal cost estimates. Rather for both augmentation and replacement capex, expenditure required to meet certain regulatory obligations should be treated as residual costs, and other augmentation and replacement capex treated as marginal costs.

Distributors have scope to optimise other types of replacement capex with respect to expected levels of demand (and other factors). We note augmentation capex also has different triggers besides demand growth. Hence, distributors should also not include all types of augmentation capex in estimates of long run marginal cost. Where capex—whether augmentation or replacement—contribute to forward looking costs, we consider distributors should include them in estimates of long run marginal cost.

We encourage TasNetworks to review this element of its long run marginal cost method in the lead-up to the next round of tariff structure statements.

19.4.7.2 Recovery of residual costs

We approve TasNetworks' proposed approach to the recovery of residual costs. We are satisfied TasNetworks' approach contributes to the achievement of compliance with the distribution pricing principles for this first round of tariff structure statements.¹⁸²

Not all of a distributor's costs are forward looking and variable. Costs not captured by long run marginal cost estimates are called residual costs. Together, long run marginal costs and residual costs form a distributor's total costs. The distribution pricing principles require total costs be recovered in a way which minimises distortions to price

¹⁸⁰ ENA, *Submission: Australian Energy Regulator draft decision on tariff structure statement proposals*, 7 October 2016, p. 2.

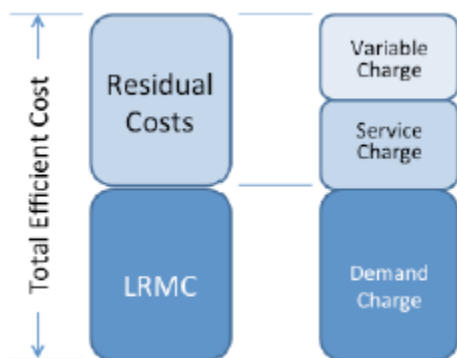
¹⁸¹ AER, *File note - Non-Victorian TSS - Discussion with ENA*, 17 October 2016 (AER reference: D16/140751).

¹⁸² NER, cl 6.18.5(g)(3) and (h).

signals for efficient usage resulting from tariffs reflecting long run marginal cost.¹⁸³ In this context, non-distortionary tends to mean unresponsive to customer usage. That is, because customers cannot avoid the residual costs they are asked to pay, they should respond to long run marginal cost price signals about their usage. For demand tariffs, to conform to the distribution pricing principles requirements, distributors generally propose recovery of residual costs through a form of fixed charge.

TasNetworks provided high level information within its tariff structure statement on what its residual costs were and how they intend to recover them. We noted in section 19.4.7.1 that TasNetworks recoups revenue associated with long run marginal cost via the demand charge. Figure 19.2 shows TasNetworks' residual costs represent the remaining costs not recovered from the forward looking long run marginal cost signal. That is, TasNetworks recovers residual costs from the fixed charge and usage components of its tariffs.¹⁸⁴

Figure 19.2 TasNetworks recovery of total efficient costs



Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 97.

TasNetworks highlighted its process of determining how forward looking and residual costs are recovered from each tariff component.¹⁸⁵ They:

- determine the total efficient costs at the tariff class/tariff level
- apportion its long run marginal cost to the demand charge (where a tariff has a demand charge)
- determine the residual costs for each tariff
- calculate the fixed charge to recover the residual costs
- recover any remaining residual costs from each tariff's usage charge, where the tariff has such a charge applied.

¹⁸³ NER, cl. 6.18.5(g)(3).

¹⁸⁴ See also TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, pp. 14 and 18–19.

¹⁸⁵ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 82; TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, pp. 14 and 18–19.

We consider using a fixed charge to recover residual costs for demand tariffs is reasonable and are satisfied this contributes to the achievement of compliance with the distribution pricing principles, in particular, clause 6.18.5(g)(3). It does not distort the price signal being provided to customers through the demand charge, and also signals to customers there is an on-going cost for customers to remain connected to the network.

We note TasNetworks has proposed to increase its fixed charge for all of its tariffs. We discuss this issue in section 19.4.7.3 below.

TasNetworks recovers the remaining residual costs via usage charges. We consider this method of recovering fixed costs reasonable for these types of tariffs. Other distributors recovered some revenue associated with long run marginal costs from usage charges with a time-of-use component. The NSW distributors, for example, converted their long run marginal cost estimates, which were in \$/kW or \$/kVA, into \$/kWh format. They then used these estimates as the basis for their time-of-use consumption charges.¹⁸⁶

TasNetworks, on the other hand, recovers only residual costs from its usage charges. Hence, TasNetworks did not appear to base the usage charges of its time-of-use tariffs on its estimates of long run marginal cost. On the other hand, we consider the relative differences between its peak, shoulder and off-peak prices are sufficiently large to provide customers with the incentive to shift usage outside of times of network congestion. This is consistent with the general purpose of time-of-use pricing.

Importantly, TasNetworks stated it is aiming to introduce a demand charge to all of its network tariffs in the medium to long term.¹⁸⁷ This medium to long term tariff strategy is consistent with the intention to recover long run marginal costs through demand charges, rather than time-of-use usage charges.

19.4.7.3 Tariff re-balancing

TasNetworks proposed to rebalance its tariffs, such that there is more emphasis on the fixed charge component and less on consumption based charging, over the 2017–19 regulatory control period.¹⁸⁸ TasNetworks considers that customers will pay lower charges overall as a result of these changes. We approve TasNetworks' proposed tariff rebalancing approach. We consider the increase in fixed charges can signal the fixed nature of network costs and therefore we are satisfied it contributes to the achievement of compliance with the distribution pricing principles. At the same time, we consider TasNetworks' proposed increases in fixed charges takes into account the impact on customers.¹⁸⁹

¹⁸⁶ The NSW distributors also proposed to recover residual costs from the usage charges of time-of-use tariffs (in addition to long run marginal costs).

¹⁸⁷ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 79.

¹⁸⁸ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 6.

¹⁸⁹ NER, cl 6.18.5(g)(3) and (h).

TasNetworks' tariff structure statement proposed to increase fixed charges for all tariffs it offers to residential, low voltage and high voltage business customers (see table 19.13). The move to increase cost recovery through a fixed charge is a reflection that a large portion of TasNetworks' costs are fixed, having been incurred in the past to supply business and household connections. The increase in fixed charges will be offset by the recovery of fewer costs through consumption charges (where applicable) and so TasNetworks expects that customers will be better off overall.

Table 19.13 TasNetworks' proposed annual increases in fixed charges from 2015–16 to 2018–19 (per cent)

Tariff class	Tariff	2016-17	2017-18	2018-19
High Voltage	Business High Voltage kVA Specified Demand (TASSDM)	20	50	14
	Business High Voltage kVA Specified Demand >2MVA (TAS15)	20	3	4
Irrigation	Irrigation Low Voltage Time of Use (TAS75)	5	0	3
Large Low Voltage	Business Low Voltage kVA Demand (TAS82)	10	17	11
	Large Low Voltage Commercial Time of Use Demand (TAS89)	N/A	N/A	5
Small Low Voltage	Low Voltage Commercial Time of Use Demand (TAS88)	N/A	N/A	11
	Business Low Voltage General (TAS22)	5	1	2
	Business Low Voltage Nursing Homes (TAS34)	5	1	2
	General Network – Business, Curtilage (TASCURT)	15	10	7
	Business Low Voltage Time of Use (TAS94)	5	17	13
Residential	Residential Time of Use Demand Tariff (TAS87)	N/A	N/A	7
	Residential Low Voltage General (TAS31)	5	0	4
	Residential Low Voltage PAYG (TAS101)	5	0	5
	Residential Low Voltage PAYG Time of Use (TAS92)	5	12	1
	Residential Low Voltage Time of Use (TAS93)	5	12	1
Uncontrolled Energy	Uncontrolled Low Voltage Heating (TAS41)	5	7	11
Controlled Energy	Controlled Low Voltage Energy – Off Peak with afternoon boost (TAS61)	5	16	4
	Controlled Low Voltage Energy – Night period only (TAS63)	5	16	4
Unmetered	Unmetered Supply Low Voltage General (TASUMS)	5	1	2

Source: TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, p. 13; TasNetworks, *Annual distribution pricing proposal 1 July 2016 – 30 June 2017*, June 2016, pp. 21–22.

Note: TasNetworks' proposed fixed charges did not change in its revised tariff structure statement.

In our draft decision, we observed that TasNetworks' high voltage customers will incur substantially larger increases in fixed charges over the 2017–19 regulatory control period than other customers. We considered TasNetworks' initial tariff structure statement did not consider the impact of the proposed increases in fixed charges for these high voltage business customers. On this basis, we did not approve TasNetworks' tariff structure statement.¹⁹⁰

We now approve TasNetworks' tariff structure statement, as we consider it contributes to compliance with the distribution pricing principles.¹⁹¹ TasNetworks clarified in its revised tariff structure statement that it re-balanced the components of its high voltage tariffs such that customers pay lower overall charges on average.

TasNetworks acknowledged it proposed a large increase in the fixed charge for high voltage customers. However, TasNetworks also proposed decreases in the variable charge components which, on average, lead to an overall decrease in the network charge. TasNetworks stated the reduction in the variable charges more than offsets the increase in the fixed charge for a typical high voltage customer.¹⁹²

For example, the typical customer on the 'TASSDM' high voltage tariff would see their annual fixed charge increase from \$681 to \$1,025 between 2016–17 and 2017–18. On the other hand, the variable components charges decrease from \$7,050 in 2016–17 to \$5,700 in 2017–18. This is a net reduction of \$1,006 on the overall bill the typical customer on the TASSDM tariff pays.¹⁹³ A typical customer on the 'TAS15' high voltage tariff would incur larger savings under TasNetworks' indicative price schedule. Figure 19.3 shows a customer would save approximately \$50,000 between 2016–17 and 2017–18.

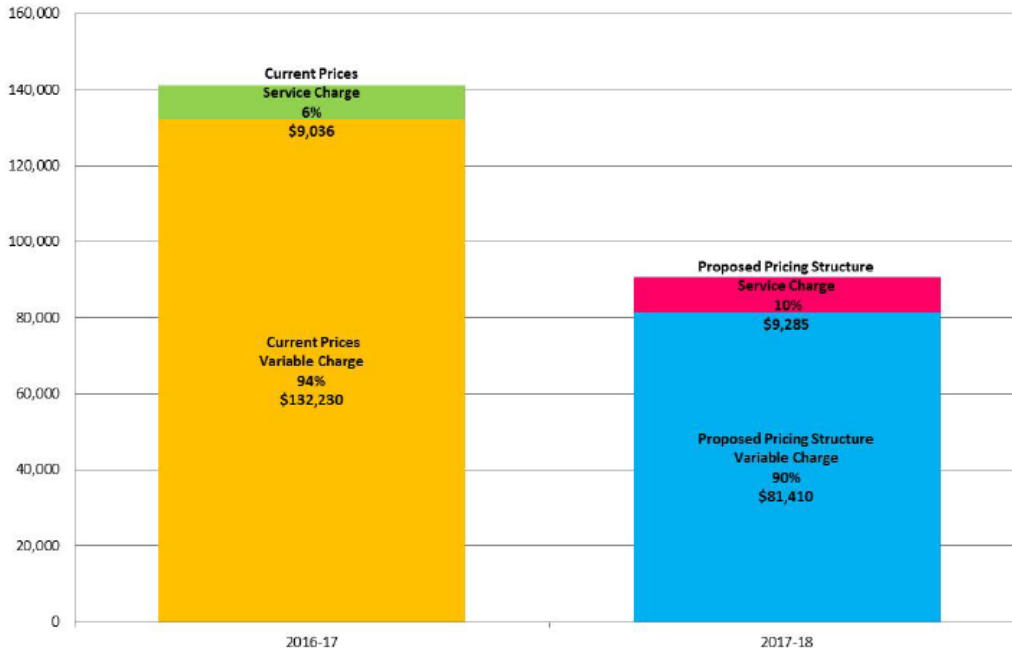
¹⁹⁰ AER, *Draft decision: TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19: Tariff structure statement*, September 2016, p. 48.

¹⁹¹ NER, cl 6.18.5(h).

¹⁹² TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 14–15.

¹⁹³ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 15.

Figure 19.3 Annual DUOS charge for a typical customer on the TASS15 high voltage tariff



Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 14.

TasNetworks stated it consulted further with its high voltage business customers after our draft decision. TasNetworks stated its customers understand the fixed charge is a small component of the overall network charge and support the tariff re-balancing, noting the overall forecast reduction in network charges.¹⁹⁴ TasNetworks undertook further consultation with its pricing reform working group, and engaged directly with large business customers after our draft decision was released. This was to explain the proposed increase in fixed charges and their rationale. Discussions were also held with retailers to explain the tariff strategy.¹⁹⁵

Customers apparently have a better understanding of the magnitude of the fixed charges relative to their overall network bill following these updated consultations.¹⁹⁶

Nekon submitted large percentage increases in fixed charges would reduce the capacity of business to save energy costs. It also reduces benefits from investments customers have already made in energy saving devices.¹⁹⁷ TREA, TSBC, raised similar concerns in their submissions.¹⁹⁸

¹⁹⁴ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 15.

¹⁹⁵ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 15.

¹⁹⁶ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 15.

¹⁹⁷ Nekon, *Submission on TasNetworks' draft decision and tariff structure statement*, 29 November 2016 p. 2; Nekon, *Submission on TasNetworks' distribution determination proposal for 2017–19*, 9 December 2016.

¹⁹⁸ TREA, *Submission on TasNetworks' draft decision and tariff structure statement*, 1 December 2016, p. 1; TSBC, *Submission on TasNetworks' draft decision and tariff structure statement*, November 2016, p. 17.

Consumer Challenge Panel member David Headberry also raised concerns about rising fixed charges and noted the pricing principles do not stipulate what share of a tariff should be subject to a fixed charge.¹⁹⁹ Rather, the pricing principles stipulate only that the return from a tariff in aggregate must achieve revenues which reflect the costs to provide the service to that class of customers. David Headberry pointed out that a tariff can comprise varying amounts of fixed and variable elements; hence distributors can allocate residual costs to variable elements such as usage charges. Usage charges can still provide appropriate signals and allows the reduction of the fixed element, which acts to reduce the incentive to modify usage patterns.²⁰⁰ John Herbst and Michael Powe raised similar concerns in their submissions.²⁰¹

We are satisfied TasNetworks' rebalancing toward fixed charges reasonably considers the impact on customers.²⁰² Table 19.13 shows the proposed annual increases in fixed charges are low for nearly all of TasNetworks' tariffs. As we discussed above, the large increases in fixed charges for high voltage customers are, on average, more than offset by reductions to the variable charges.

TasNetworks allocated residual costs to both fixed charges and usage charges, including time-of-use charges (see figure 19.2). Further, we consider TasNetworks' tariff levels for its peak, shoulder and off-peak windows provide customers with the incentive to shift usage outside of times of network congestion (see section 19.4.7.2). Consistent with the David Headberry's submission²⁰³, we consider TasNetworks' allocation of residual costs to time-of-use tariffs provide appropriate signals of network congestion. At the same time, it mitigates the amount of residual costs that TasNetworks must recover through fixed charges.

We will continue to monitor how TasNetworks, and other distributors, allocate residual costs and its impact on customers in future tariff structure statements.

TasNetworks noted the rebalancing of tariff components will be undertaken over time and is anticipated to be complete by June 2029, unless customer feedback in coming years indicates that a faster transition is preferable, and can be achieved.²⁰⁴ The latter might occur if there are overall reductions in future revenues, providing headroom to rebalance tariff components without significant customer impacts.

We note that recovering a distributor's fixed (sunk) costs can be done either by a fixed supply charge—usually charged in cents per day, or dollars per day—or by a minimum charge of some description. This charge could include for instance specifying a

¹⁹⁹ CCP4 – David Headberry, *Submission on TasNetworks' revised proposal*, 21 December 2016, p. 41.

²⁰⁰ CCP4 – David Headberry, *Submission on TasNetworks' draft decision and tariff structure statement*, 12 December 2016, pp. 40–41.

²⁰¹ Herbst J, *Submission on TasNetworks' tariff structure statement 2017–2019*, 23 December 2016, p. 3; Powe M, *Submission on TasNetworks' revised proposal*, 22 December 2016.

²⁰² NER, cl 6.18.5(h).

²⁰³ CCP4 – David Headberry, *Submission on TasNetworks' revised proposal*, 21 December 2016, p. 41.

²⁰⁴ TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, p. 11.

minimum level of demand that will be charged for the billing period, irrespective of actual customer demand over that period.

TasNetworks has chosen the fixed supply charge option. This is likely due to the considerable number of customers expected to be on consumption based charges during the 2017–19 regulatory control period.

TasNetworks noted the revenue cap control mechanism applying to it permits it to recover its allowed revenue no matter the actual level of energy consumption.²⁰⁵ Differences between actual revenues and allowed revenues due to variation in actual energy delivered compared to forecast are resolved via the unders and overs account. By placing a greater reliance on fixed charges, and less on consumption based charges, bill volatility can be reduced.

Increases in fixed charges will also remove cross subsidies from existing tariffs. This is consistent with David Headbury's view that cross subsidies need to be eliminated as these distort cost reflectivity.²⁰⁶ TasNetworks has lower prices embedded into certain tariffs than would occur under full cost reflectivity. Hence, TasNetworks would be unwinding cross subsidies that apply to specific industries (like irrigators) and nursing homes. TasNetworks has other tariffs available for these customers, and noted in particular that there were relatively few nursing homes customers on the legacy tariff. Most of these customers had already switched to another tariff as they would be better off.

19.4.7.4 Future directions

We encourage TasNetworks to continue to refine its methods for estimating long run marginal cost. We consider it is possible for TasNetworks, and distributors in general, to make further refinements while retaining the average incremental cost method in future tariff structure statements. Alternatively, we would also be open to distributors adopting more sophisticated estimation methods, such as the Turvey method.

We also consider distributors should have the flexibility to calculate and apply long run marginal cost in the way that best suits the characteristics of their networks and customers.²⁰⁷

All electricity distributors currently calculate their long run marginal cost using the average incremental cost approach. This approach estimates long run marginal cost as the average change in forward looking capital and operating expenditure resulting from an increase in demand. It is estimated by:

²⁰⁵ TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, pp. 3–5 and 12.

²⁰⁶ CCP4 – David Headberry, *Submission on TasNetworks' draft decision and tariff structure statement*, 12 December 2016, p. 39.

²⁰⁷ NER, cl. 6.18.5(g).

- Initially, estimating future operating and capital costs to satisfy expected increases in demand
- Then estimating the anticipated increase in the relevant charging parameter
- Finally, dividing the present value of future costs by the present value of the charging parameter over the time horizon chosen.

The Energy Networks Association submitted the average incremental cost approach is incapable of estimating how the long run marginal cost might change where consumption or demand is falling in parts of the network.²⁰⁸ As we discussed in the sub-section, 'Average incremental cost approach', this appears to stem from the standard specification of the average incremental cost function.

We suggest distributors explore adapting the average incremental cost approach for situations where demand is decreasing (see the 'Average incremental cost approach' sub-section). Alternatively, distributors may consider adopting more advanced methods, if they consider it is appropriate to do so.²⁰⁹

In addition to refining the specification of the method for estimating long run marginal cost, we encourage distributors to continue refining the way they apply these methods. We expect distributors to utilise inputs that better represent long run marginal cost. In particular we consider long run marginal cost estimates should incorporate certain types of replacement capital expenditure, and associated operating expenditure, in addition to augmentation expenditure (and associated operating expenditure). We discussed this in detail in the 'Average incremental cost approach' sub-section.

TasNetworks acknowledged introducing seasonality to its demand tariffs would increase cost reflectivity. TasNetworks suggested it may do so by charging higher rates in winter, which reflects the winter peaking nature of its network (see Figure 19.7) TasNetworks elected not to introduce such higher rates in this round of tariff structure statements to mitigate the impact on customers.²¹⁰ We encourage TasNetworks to explore options to introduce seasonality to its tariffs in future tariff structure statements. We also discuss seasonality in the context of charging windows in section 19.4.8.

19.4.8 Charging windows

In setting out tariffs, a distributor has to determine over what periods it will charge customers. This includes determining if there should be peak period, shoulder period or off peak period charges, or if charges should vary by season (summer, winter and/or other). We refer to these here as 'charging windows'.

²⁰⁸ ENA, *Submission: Australian Energy Regulator draft decision on tariff structure statement proposals*, 7 October 2016, p. 3.

²⁰⁹ For example, the Turvey method.

²¹⁰ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 87.

Charging windows will have a bearing on how customers use the network through their response to prices and their network (and final retail) bills.

We are satisfied TasNetworks' proposed charging windows contribute towards the achievement of compliance with the distribution pricing principles for this first round of tariff structure statements. With regard to the new time of use demand tariffs, the charging windows reflect times of overall network stress and incorporate times either side of the peak which aid in avoiding issues surrounding customers shifting load and creating new peaks.²¹¹

Table 19.14 summarises TasNetworks' proposed charging windows. TasNetworks proposed to introduce three new time of use demand tariffs: TAS89 (for large low voltage customers), TAS88 (for small low voltage customers) and TAS87 (for residential customers).

Table 19.14 TasNetworks charging windows

Tariff	Season	Type of day	AM						PM						
			12	1	2	3	4	5	6	7	8	9	10	11	
High voltage (TASSDM, TAS15), Irrigation (TAS75)	Summer	Weekday													
		Weekend													
	Winter	Weekday													
		Weekend													
Small low voltage (TAS94)	NA	Weekday													
		Weekend													
Residential TOU (TAS92, TAS93)	NA	Weekday													
		Weekend													
TOU demand tariffs (TAS87, TAS88, TAS89)	NA	Weekday													
		Weekend													

	Peak
	Shoulder
	Off peak

Source: TasNetworks, *Tariff structure statement: Formal statement: Regulatory control period 1 July 2017 to 30 June 2019: AER amended: PUBLIC Appendix C: Network tariff application and price guide 2017-18 and 2018-19*, 21 April 2017, pp. 19–50.

Note: The charging windows for the new time of use demand tariffs apply to the demand charge. For all other tariffs, the charging windows apply to the consumption charge (and not the demand charge, if present).

19.4.8.1 Residential customers

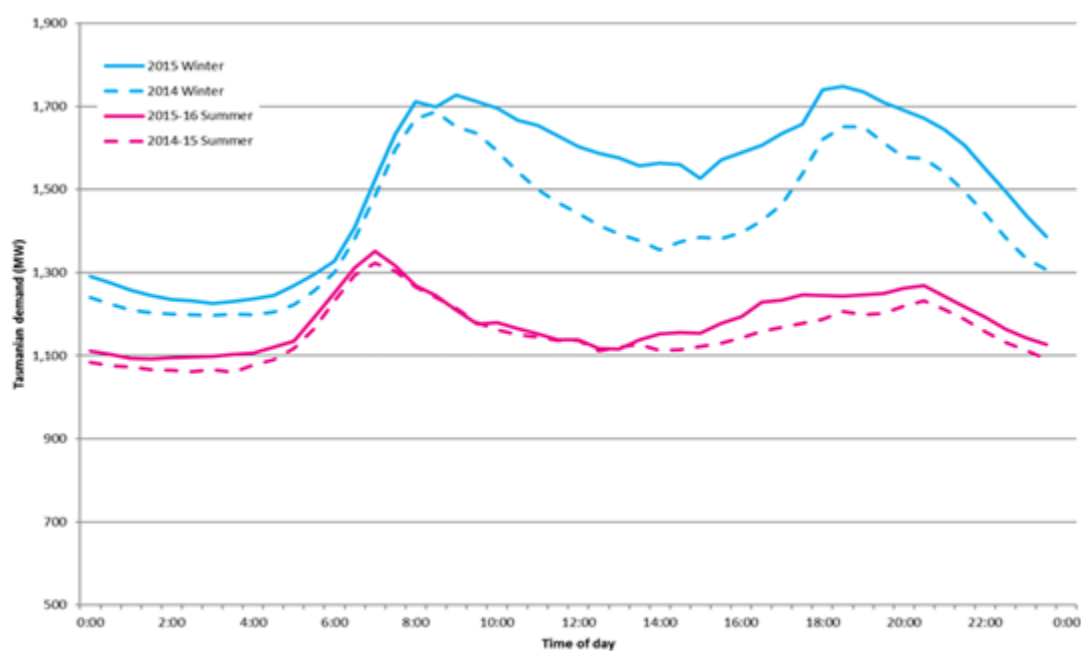
TasNetworks' tariff structure statement will align the charging windows for its residential time of use consumption tariffs and the new residential time of use demand

²¹¹ TasNetworks refers to these new demand tariffs as time of use demand because the rate charged differs between peak and off-peak periods. In contrast, its existing demand tariffs charge on an 'anytime' basis.

tariff.²¹² In terms of design, TasNetworks decided to only distinguish between peak and off peak periods and determine charges accordingly. It noted this simplicity in charging was to ensure customers can readily understand the tariffs. TasNetworks introduced this charging structure in response to feedback from the TasNetworks Tariff Reform Working Group.²¹³

As figure 19.4 shows, TasNetworks' load profile is a winter peaking network where peaks occur twice during the day—early morning and late afternoon/early evening on weekdays.²¹⁴ This load profile is particularly prominent for residential customers.²¹⁵ TasNetworks has a winter peaking network and therefore it has proposed morning and evening peak windows.

Figure 19.4 Comparison of winter and summer peak demand



Source: TasNetworks, *Response to AER Issues Paper: Tariff structure statements proposals – TasNetworks*, April 2016, p. 19.

TasNetworks noted the peak and off peak charging windows reflect a week day as it is more representative of its system wide peak—as shown in figure 19.5.

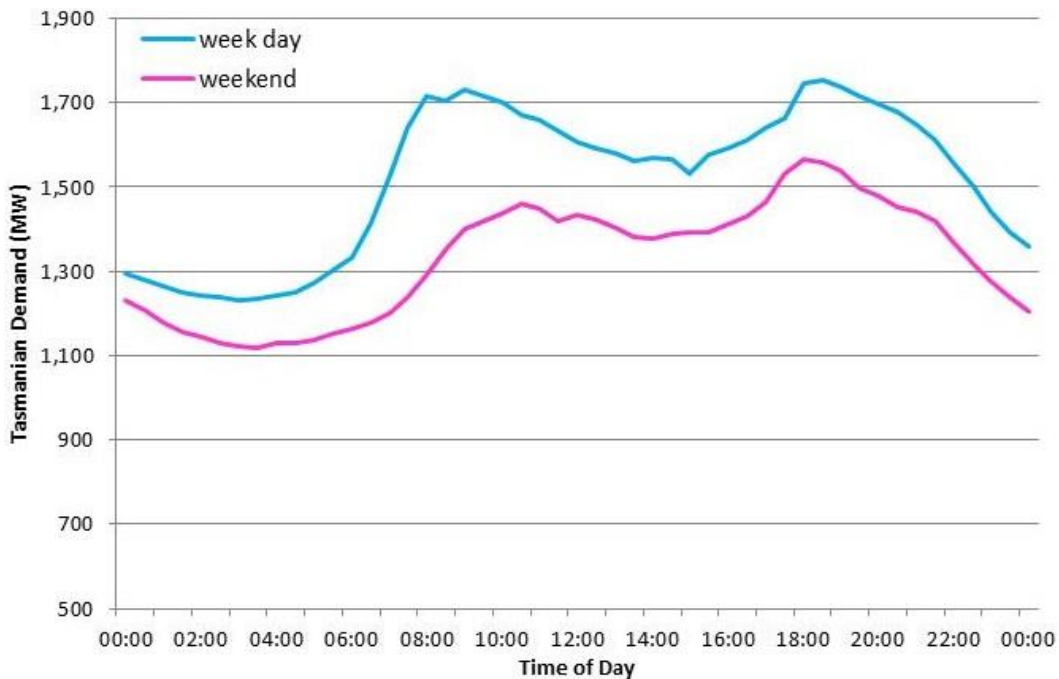
²¹² TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 50.

²¹³ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 51.

²¹⁴ TasNetworks, *AER information request: TasNetworks response to questions raised by the AER*, May 2016, p. 33.

²¹⁵ TasNetworks, *AER information request: TasNetworks response to questions raised by the AER: Appendix: Custload_AER*, May 2016.

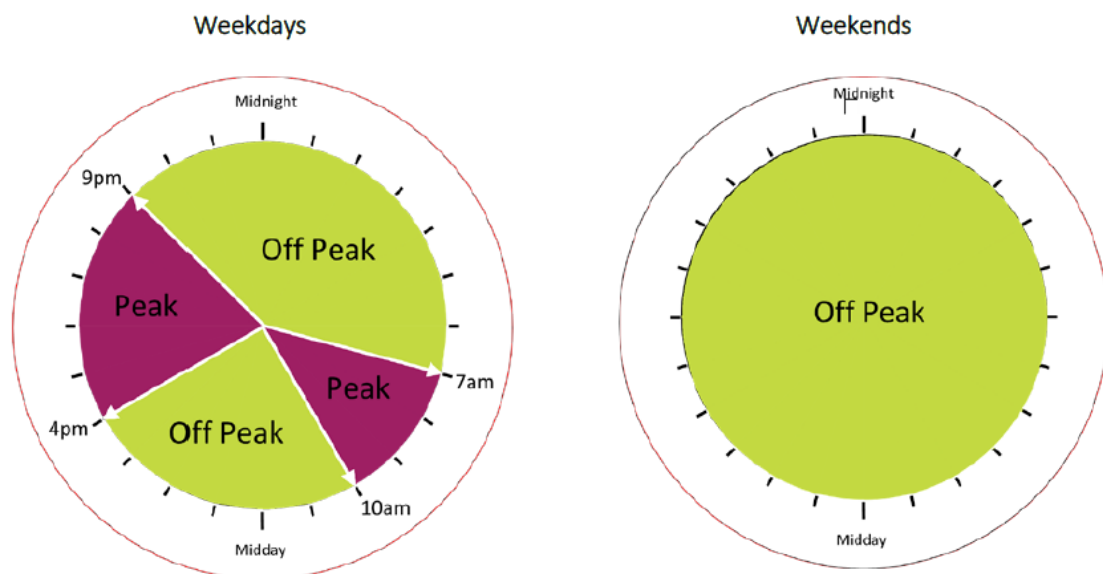
Figure 19.5 Comparison of peak demand on week days and weekends



Source: TasNetworks, *Response to AER Issues Paper: Tariff Structure Statements proposals – TasNetworks*, April 2016, p. 20.

On this basis, TasNetworks proposed peak charges to apply from 7am to 10am, and then again from 4pm to 9pm, on weekdays only. All other times are off peak, including all day weekends. These charging windows are set out in figure 19.6 and table 19.14.

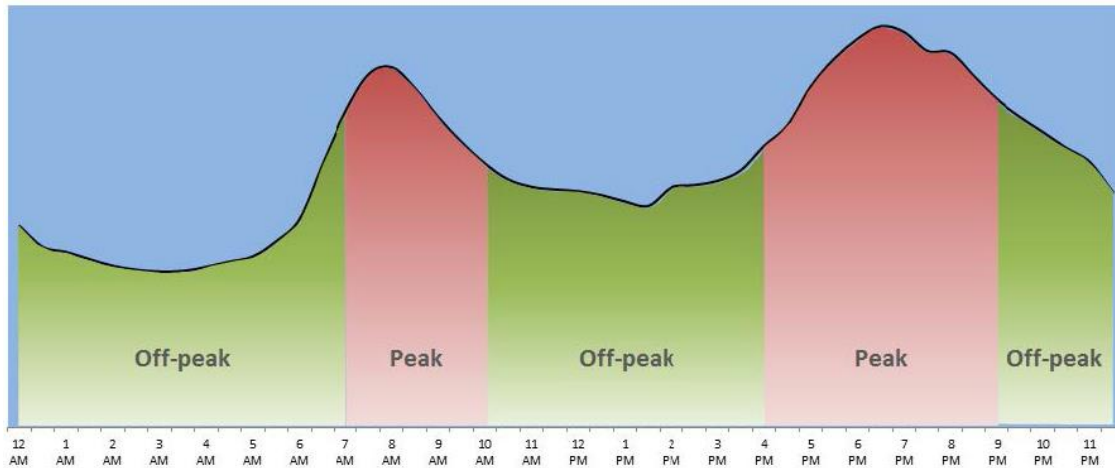
Figure 19.6 TasNetworks proposed residential time of use consumption and demand tariff charging windows



Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 50.

TasNetworks acknowledged that while the load profile in locations may differ slightly due to the diversity of customers, it elected to use the load profile of the system as a whole to identify the peak and off peak periods.²¹⁶ This approach aligns with the jurisdictional requirement that tariffs must be uniform for all small customers in Tasmania. As figure 19.7 shows, the proposed peak and off peak charging parameters reflect the system wide load profile.

Figure 19.7 Time of use periods and peak demand in winter, system wide load



Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 51.

We consider the peak period charging windows proposed by TasNetworks are wide enough to capture periods of high demand. But they also allow customers, particularly in the afternoon/evening, enough flexibility within which to shift their demand to outside the peak period. Avoidance of electricity use during the peak period is not necessary. Rather, customers can respond to the price signal by reducing the number of appliances concurrently used during this period. This intensive use—sometimes called appliance stacking—will drive up the level of recorded demand. Appliance use that is spread out during the peak period (turning off one appliance before another is used) will limit household peak demand, and so enable bill savings to be made. Evening out this peak will also reduce the need for, or defer, future network asset upgrades, resulting in savings for all customers.

For this first tariff structure statement, we consider the proposed charging windows provides customers with an ability to respond to the signals network use, and further, that they will be able to shift some of their load to the off peak periods.

19.4.8.2 Low voltage business customers

²¹⁶ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 50.

Unlike the residential tariffs, TasNetworks has not sought to align the charging windows of the low voltage business time of use demand tariffs with the time of use consumption tariffs.

Instead it has decided to align the charging windows across the three demand tariffs—residential, small low voltage and large low voltage. The demand tariff charging windows for the low voltage business customer demand tariffs are shown above in figure 19.6 and table 19.14.

In terms of the demand tariff charging windows, TasNetworks acknowledged the daily load profiles of residential and low voltage business are not the same.²¹⁷ However, it decided to keep the same peak and off peak windows across the new demand tariffs to ensure the right pricing signals are sent to customers about system wide demand.

We are satisfied the alignment of charging windows for the time of use demand tariffs contribute towards the achievement of compliance with the distribution pricing principles. The alignment of charging windows reflects times of overall network stress and incorporates times either side of the peak which aid in avoiding issues surrounding customers shifting load and creating new peaks.

In terms of the small low voltage time of use consumption tariff—Business low voltage time of use—we note that unlike the time of use demand tariff it has three charging windows—peak, off peak and shoulder. As shown in table 19.15 and table 19.14, the charging windows of the Business low voltage time of use tariff are different to those of the time of use demand tariff.

Table 19.15 Charging windows for Business low voltage time of use tariff

Charging windows	Tariff rate
Week day (07:00–22:00) (Monday - Friday)	Peak
Weekend day (07:00–22:00) (Saturday and Sunday)	Shoulder
Any day (22:00–24:00) (Monday-Sunday)	Off peak
Any day (0:00–07:00) (Monday-Sunday)	Off peak

Source: TasNetworks, *Tariff structure statement: Formal statement: Regulatory control period 1 July 2017 to 30 June 2019: AER amended: PUBLIC Appendix C: Network tariff application and price guide 2017-18 and 2018-19*, 21 April 2017, pp. 28–29.

²¹⁷ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 51.

Although the charging windows are different, we approve the continuation of the Business low voltage time of use tariff charging windows over the 2017–19 regulatory control period for a number of reasons.

First, we have taken into consideration customer impacts and consider the continuation of these tariffs in their current design will limit any short term price impacts to customers. In forming our decision, we have taken into consideration stakeholders submissions which posited that in this initial stage of tariff reform, the customer impacts and simplicity to minimise customer confusion should be key considerations.²¹⁸

Second, we consider the point of difference between the charging windows of the consumption and demand tariffs will encourage customers to inquire about how the demand tariff might suit their needs. Given these customers have the ability to choose between tariffs, the time of use demand tariff may be attractive to them. On this basis we approve the continuation of the charging windows as the ability for customers to respond to price signals by moving to a more cost reflective tariff is an appropriate response of the tariff reform. Again we have taken into consideration stakeholder submissions which posited that customers be given an opportunity to learn more about the demand tariff and how it might suit their needs before committing to it.²¹⁹

Finally, we consider maintaining the current charging windows is reasonable given TasNetworks indicated it will align the charging windows of the time of use tariff with the demand tariff.²²⁰ On this final consideration, we expect TasNetworks' next tariff structure statement to include a timeframe for when this alignment would take place to allow predictability in pricing to customers.

As for TasNetworks' large low voltage kVA demand tariff, it does not need to have specified charging windows as its demand charge is based on anytime demand (c/kVA/day). We approve of this charging structure as the anytime demand charge reflects that these customers peak demand can occur at any time during the week, and that when that peak occurs it puts stress on the network. It is also consistent with current practice, so maintaining this structure assists in mitigating the impact on current customers.²²¹ Further, TasNetworks indicated it would unwind all of its anytime demand tariffs in the future (except for the unmetered tariff class).²²² TasNetworks has

²¹⁸ ENA, *Australian Energy Regulatory Issues papers on draft tariff structure statements for TasNetworks*, 28 April 2016, pp. 2–3; TasCOSS, *Submission on AER Issues Paper: Tariff Structure Statement proposals (TasNetworks)*, 29 April 2016, pp. 2–3; TREA, *TREA response to AER March 2016 issues paper: TasNetworks tariff structure statement proposals*, 5 May 2016, pp. 1–2; TREA, *Fair and effective tariff reform for Tasmania: TREA submission in response to AER draft decision, TasNetworks distribution determination 2017-2019*, 1 December 2016, pp. 1–2.

²¹⁹ ENA, *Australian Energy Regulatory Issues papers on draft tariff structure statements for TasNetworks*, 28 April 2016, pp. 2–3; TasCOSS, *Submission on AER Issues Paper: Tariff Structure Statement proposals (TasNetworks)*, 29 April 2016, pp. 2–3; TREA, *TREA response to AER March 2016 issues paper: TasNetworks tariff structure statement proposals*, 5 May 2016, pp. 1–2; TREA, *Fair and effective tariff reform for Tasmania: TREA submission in response to AER draft decision, TasNetworks distribution determination 2017-2019*, 1 December 2016, pp. 2–3.

²²⁰ TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 9.

²²¹ NER, cl 6.18.5(h).

²²² TasNetworks, *Tariff structure statement: Formal statement*, December 2016, p. 9.

already begun this process with the introduction of its 'time of use demand' tariffs, which is available on an opt-in basis.

19.4.8.3 Irrigation customers

TasNetworks' Irrigation low voltage time of use tariff is cost reflective in that the tariff charging windows not only incorporate time of use charges but also seasonal variations as shown in table 19.16 and table 19.14. We approve of the charging windows for this tariff for the same reasons we are approving the continuation of the Business low voltage time of use tariff charging windows discussed above.

Table 19.16 Charging windows for Irrigation low voltage time of use tariff

Time Periods	Summer (1 Oct – 31 Mar)	Winter (1 Apr – 30 Sep)
Week Day (07:00 – 22:00) (Monday – Friday)	Shoulder	Peak
Weekend Day (07:00 – 22:00) (Saturday and Sunday)	Off-peak	Shoulder
Any Day (22:00 – 24:00) (Monday – Sunday)	Off-peak	Off-peak
Any Day (0:00 – 07:00) (Monday – Sunday)	Off-peak	Off-peak

Source: TasNetworks, *Tariff structure statement: Formal statement: Regulatory control period 1 July 2017 to 30 June 2019: AER amended: PUBLIC Appendix C: Network tariff application and price guide 2017-18 and 2018-19*, 21 April 2017, pp. 31–32.

19.4.8.4 High voltage business customers

We are satisfied TasNetworks' high voltage business customer charging structures contribute towards the achievement of compliance with the distribution pricing principles. These tariffs feature elements such as time of use charges, demand based charges and seasonal variations. The time of use charging windows for the tariffs are the same as those for the Irrigation low voltage time of use tariff set out in table 19.16 and table 19.14. The demand charges are negotiated between TasNetworks and the customer on the basis of the level of specified demand for the coming financial year.

19.4.8.5 Future directions

We encourage TasNetworks, and distributors more generally, to continue making refinements to their charging windows in future tariff structure statements to more closely reflect the times of congestion on their particular network. Broadly, we encourage distributors to refine.²²³

²²³ NER, cl. 6.18.5(a).

- their methods for setting charging windows, and
- the charging windows themselves

We discuss these in turn below.

19.4.8.5.1 Methods for determining charging windows

Distributors have used varying methods and information to support their proposed charging windows in this first round of tariff structure statements. We have therefore assessed each distributor's proposed charging windows on the basis of their individual method. We assessed whether their methods and the information they provided in their tariff structure statements were sufficiently robust (given this early stage of tariff reform).²²⁴ We then assessed whether the resulting charging windows were consistent with the findings of their methods and reasonably signalled the potential timing of congestion on their networks. We regularly consulted with the distributors to better understand the justification for their proposed charging windows. We did this through information requests to the distributors, for example, to get the dataset and models underlying their analysis, or to get their datasets in different formats. We also had discussions and workshops with the individual distributors to clarify issues identified during our assessment. We also applied this approach to the assessment of TasNetworks proposal.

We consider the methods and information from TasNetworks provided sufficient support for their proposed charging windows for this first round of tariff structure statements. However, we consider distributors should continue to explore ways to refine their methods for determining charging windows in future tariff structure statements. In discussing this aspect further, we also compare TasNetwork's proposal with those of other distributors.

All of the distributors provided some form of daily load profiles to determine or provide justification for their proposed charging windows in this first round of tariff structure statements.²²⁵ For example, Essential Energy provided the 'average weekday' and 'average weekend' load profiles for summer and winter. Several distributors provided the actual load profile for the peak day of the year, including TasNetworks.²²⁶ ActewAGL provided a load profile that showed the maximum demand measured for each half-hour interval for a given year.²²⁷ Ausgrid and Endeavour Energy showed the time of the highest demand points for a given year (using data from several years).²²⁸ Distributors variously provided daily load profiles at system and/or spatial levels.²²⁹

²²⁴ NER, cl 6.18.5(a) and (h).

²²⁵ Daily load profiles depict the level of demand for each half-hour interval over 24 hours.

²²⁶ TasNetworks, *Load data and graphs*, 14 June 2016. See also the revised tariff structure statements of Essential Energy, SA Power Networks, ActewAGL, Ergon Energy and Energex.

²²⁷ ActewAGL, *Revised tariff structure statement: Explanatory statement*, 4 October 2016, p. 78.

²²⁸ This is a 'semi-complete' load profile as it does not include data points for all half-hour intervals of the day.

²²⁹ Spatial level means the daily load profiles applies to particular assets in the networks, particularly zone substations. System level means the daily load profiles applies to the distributor's network as a whole.

Each distributor also provided other types of information to supplement daily load profiles and further support their proposed charging windows, including:

- graphs showing the frequency of peak times for each half hour interval²³⁰
- ‘heat maps’ of demand²³¹
- timing of peak demand for individual substations²³²
- load duration curves (see the ‘network utilisation information’ section below for further discussion).²³³

The distributors provided the information described above in formats showing demand levels only. Such information did not explicitly consider network capacity or utilisation (Endeavour Energy’s and TasNetworks’ approach to using load duration curves indirectly considers network utilisation as we discuss in the next section).

We consider focusing on demand levels only may be reasonable in the first round of tariff structure statements. Tariffs historically applied at the network (rather than regional or local) level and so send averaged signals of the drivers of network costs.²³⁴ The first round of tariff structure statements largely maintained the use of tariffs that apply network-wide, which we consider is consistent with the customer impact principle.²³⁵ The shape of daily load profiles supplemented by other demand-based information as described above can suggest when the network may be experiencing congestion. We consider such information serves to indicate the potential timing of network congestion under tariffs that apply network-wide. Hence, we consider such evidence contributed to the achievement of compliance with the distribution pricing principles in this first round of tariff structure statements.²³⁶

However, we expect the distributors to transition towards more cost reflective tariff structures in future tariff structure statements, including potentially moving away from network wide tariff approaches. Among other things, this could include charging windows that more accurately reflect times of network congestion than currently. From our assessment of the first round of tariff structure statements, we make several suggestions for distributors to explore to facilitate this transition. We discuss these in turn below.

Network utilisation information

²³⁰ For example, see Essential Energy, *Tariff structure statement: Attachment 8: Addendum to our tariff structure statement: Explanations and reasoning*, 4 October 2016, p. 14.

²³¹ See Energex, *Tariff structure statement: Explanatory statement*, 4 October 2016, p. 45.

²³² See Ausgrid, *Revised tariff structure statement*, 4 October 2016, pp. 32 and 35; Essential Energy, *Tariff structure statement: Attachment 8: Addendum to our tariff structure statement: Explanations and reasoning*, 4 October 2016, p. 15.

²³³ See Endeavour Energy, *Tariff structure statement: Explanatory statement*, 4 October 2016, pp. 46–47.

²³⁴ With the exception of customer-specific tariffs, which apply to very large customers.

²³⁵ NER, cl 6.18.5(h) and (i).

²³⁶ NER, cl 6.18.5(a).

The evidence the distributors provided generally showed information regarding demand levels only. As we noted earlier, we consider this is reasonable in this first round of tariff structure statements. However, it is network utilisation—the relationship between demand levels and asset capacity—that is a key driver input into distributors' decisions to make investments in the long run. Distributors' long run investment decisions are guided by their expectations of network utilisation. For example, they would invest in additional capacity when they expect demand to exceed the capacity of assets.²³⁷ We therefore encourage distributors to explore whether they can incorporate information on network utilisation to develop and evidence their charging windows in future tariff structure statements.

We consider Endeavour Energy's revised proposal provided a useful starting point for exploring such an approach. Endeavour Energy justified its peak and shoulder hours using the highest demand intervals in recent years. Endeavour Energy stated its peak period contains data points within 10 per cent of the peak demand for each year. The shoulder period contains the data points between 10 per cent and 20 per cent of the peak demand interval for that year.²³⁸

Endeavour Energy explained the 10 per cent and 20 per cent thresholds are related to network planning. Endeavour Energy stated its planners begin investigations into an asset when the proportion of time that asset exceeds its firm rating is greater than 1 per cent. This includes considering augmentation capex or demand management options.²³⁹

Because Endeavour Energy's tariffs apply at a network level, it uses the network load duration curve as indicative of likely demand at an asset level. Endeavour Energy's highest demand points are within 20 per cent of maximum demand for one per cent of the time. Its highest demand points are within 10 per cent of maximum demand for 0.2 per cent of the time.²⁴⁰

We consider Endeavour Energy's approach is a useful starting point as it establishes a link between its charging windows and network utilisation (it does this indirectly via its planning criteria).

In addition, Endeavour Energy's approach uses an objective method to determine the thresholds between peak, shoulder and off-peak hours. By comparison, evidence based on demand levels alone does not provide as clear a guide on the thresholds between the peak, shoulder and off-peak hours. As a result, it was not always clear

²³⁷ Alternatively, distributors consider expected levels of demand when deciding asset capacity in replacement capital expenditure decisions. See section 19.4.7 for further discussion.

²³⁸ Endeavour Energy, *Tariff structure statement*, 27 November 2015, p. 72.

²³⁹ Endeavour Energy, *Tariff structure statement: Explanatory statement*, 4 October 2016, p. 46.

²⁴⁰ Endeavour Energy, *Tariff structure statement: Explanatory statement*, 4 October 2016, p. 46.

how distributors, including TasNetworks, determined the thresholds between charging windows, which is not as transparent.²⁴¹

We emphasise Endeavour Energy's approach can be a useful starting point when considering approaches for the next round of tariff structure statements. We encourage TasNetworks (and other distributors) to explore ways to improve the use of load duration curves (should distributors adopt or continue to use them) in future tariff structure statements.²⁴² Alternatively, distributors may choose to explore other approaches to incorporate information on network utilisation to determine charging windows.

We note TasNetworks included load duration curves in its response to our questions on its proposed charging windows.²⁴³ However, the explanation of the link between its load duration curves, network utilisation and its charging windows are less clear compared to Endeavour Energy. For example, it is unclear from TasNetworks' analysis of load duration curves why it requires the proposed morning peak period for the new demand tariffs (in contrast with the analysis in figure 19.7). It is also unclear whether and how TasNetworks utilised the load duration curves to directly set the thresholds between its peak and off-peak hours.²⁴⁴

If TasNetworks utilises load duration curves in setting charging windows in the future, we encourage TasNetworks to include a detailed description of its methods in future tariff structure statements.

Developing an industry approach for charging windows

The Energy Networks Association stated it will discuss with its members options for developing charging windows.²⁴⁵

We support the ENA's initiative to consult with its members regarding methods for establishing charging windows. We consider it is a good opportunity for the industry to discuss and explore ways to improve methods for determining charging windows—including its place in the broad context of tariff reform. This could potentially lead to more rigorous and objective methods to setting charging windows. Distributors may then utilise findings from these discussions to refine their methods to suit their individual circumstance. This could in turn lead to more cost reflective tariffs.²⁴⁶

²⁴¹ For example, it is not clear from Figure 19.7 why the morning peak period would end at 10AM, rather than 9AM when the demand levels are approximately the same as at 7AM (the start of the morning peak period).

²⁴² See section 8.2 of AER, *Final decision: Tariff structure statements: Ausgrid, Endeavour and Essential Energy*, February 2017.

²⁴³ TasNetworks, *AER information request: TasNetworks response to questions raised by the AER: Appendix: Peak_demand_windows_Methodology*, May 2016, pp. 2–5.

²⁴⁴ TasNetworks, *AER information request: TasNetworks response to questions raised by the AER: Appendix: Peak_demand_windows_Methodology*, May 2016, pp. 3–5.

²⁴⁵ ENA, *Submission: Australian Energy Regulator draft decision on tariff structure statement proposals*, 7 October 2016, p. 4.

²⁴⁶ NER, cl. 6.18.5(g).

The ENA also stated to us it will discuss with its members the prospect of developing an ‘industry approach’ for charging windows.²⁴⁷ This does not mean that all distributors would have the same charging windows. Rather, that a consistent analytical or conceptual approach is used to determine the charging windows specific to each particular network.²⁴⁸

At this stage, it is unclear to us whether it is necessary, or even desirable, to develop an industry approach for charging windows. We acknowledge an industry approach has benefits. It could aid stakeholders to more easily understand the reasons for a distributor’s proposed charging windows, and the reasons for differences with other distributors’ charging windows.²⁴⁹

On the other hand, adopting a common approach poses the risk of ‘settling’ into this approach and slowing innovation in this area. As moving from demand based to utilisation based approaches to determining charging windows would be new for most distributors, it may be useful for different distributors to innovate and adopt different methods. The strengths and weaknesses of these different methods could then be assessed at a later stage, with a common industry approach a potential longer term goal which is informed by these earlier innovations. An industry approach should therefore not dampen the incentive for individual distributors from innovating on methods to determine charging windows.

If the ENA and its members consider developing an industry approach is appropriate, they should also keep in mind the transitional nature of the tariff reform process. That is, distributors are at various stages of transition. We consider an industry approach, if developed and adopted, should have the flexibility to accommodate individual distributors’ circumstances as well as the dynamic nature of tariff reform.

19.4.8.5.2 Charging windows

Our suggestions on refining charging windows are specific to each distributor. This is because the distributors introduced various levels of reform to their charging windows in their revised tariff structure statements. In addition, they all have slightly different patterns of network utilisation. As examples, the improvements that we would expect to see in some of the distributors’ future tariff structure statements include:²⁵⁰

- Narrowing peak windows—Some stakeholders consider the peak window is too long, so customers have limited opportunity to access lower prices, and less incentive to respond to the peak price signal. We consider there is scope for distributors to narrow their peak hours to better target times of network congestion. For example, many networks show a narrower peak period in winter compared to

²⁴⁷ ENA, *Submission: Australian Energy Regulator draft decision on tariff structure statement proposals*, 7 October 2016, p. 4; AER, *File note - Non-Victorian TSS - Discussion with ENA*, 17 October 2016 (AER reference: D16/140751).

²⁴⁸ NER, cl. 6.18.1A(a).

²⁴⁹ NER, cl. 6.18.5(i).

²⁵⁰ NER, cl. 6.18.5(f).

summer. These networks can consider introducing different peak hours for their winter and summer months.

- Introducing or expanding seasonal differences—Many networks exhibit highly seasonal demand patterns. As we noted earlier, many networks have narrower winter peak periods compared to summer. We note TasNetworks already incorporates seasonality for several tariffs. In particular, the charging windows for its high voltage and irrigation tariffs differ between summer and winter months (see table 19.16 and table 19.14). This reflects the winter peaking nature of TasNetworks' network (see figure 19.4). On the other hand, TasNetworks does not apply seasonality to its small low voltage and residential time of use tariffs. We encourage TasNetworks to investigate whether it can extend seasonality of charging windows to these other tariffs.

Further, many distributors are summer-peaking and/or winter-peaking and show a marked decrease in demand levels in non-summer and non-winter months. These networks can potentially remove peak hours during those non-summer and non-winter months and only include shoulder and off-peak periods.²⁵¹ TasNetworks' summer and winter periods encompass the entire year (see table 19.16). We encourage TasNetworks to investigate whether it can refine the way it applies seasonality to its tariffs. For example, TasNetworks can investigate whether demand levels in the 'official' summer months (December to February inclusive) and winter months (June to August inclusive) differ significantly from levels in other months. TasNetworks may then be able to refine the way it applies seasonality in its charging windows.

- Introducing locational differences within a network—Currently, most charging windows are based on system wide network data. However, this can mask important regional differences within a network. For example, a network might be summer peaking overall, but contain alpine regions which are winter peaking. In these cases, different charging windows could be applied to the alpine and non-alpine regions. Alternatively, regions within a network which are dominated by residential demand might have very different load characteristics to regions which are dominated by large industrial demand. Distributors should consider whether there is a case for regional differences in their charging windows.

We understand jurisdictional obligations require TasNetworks to offer the same tariffs to small customers regardless of their location.²⁵² We encourage TasNetworks to explore the region-based pricing for customers that fall outside of these jurisdictional obligations.

²⁵¹ To avoid confusion, we do not use the terms 'spring' and 'autumn'. Some distributors define summer as the period between November and March inclusive, which includes months that are 'officially' spring and autumn (see <http://www.australia.gov.au/about-australia/australian-story/austn-weather-and-the-seasons>).

²⁵² TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 50.

A Background of tariff structure statements

The requirement on distributors to prepare a tariff structure statement arises from a long process of reform to the NER governing distribution network pricing. The purpose of the reforms is to empower consumers to make informed choices by:

- Providing better price signals—tariffs that reflect what it costs to use electricity at different times so that customers can make informed decisions to better manage their bills.
- Transitioning to greater cost reflectivity—requiring distributors to explicitly consider the impacts of tariff changes on customers, and engaging with customers, customer representatives and retailers in developing network tariff proposals over time.
- 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.

Why is network tariff reform important?

Distribution tariffs historically have not varied according to the time when electricity is used. But distribution costs are significantly driven by the peak demand the network must cater for at times of congestion on the network. This means the structure of existing network tariffs don't reflect network costs. Most existing retail tariffs send price signals that don't inform customers about the costs imposed on distribution networks in peak demand periods.

Lifestyle changes, including the use of air conditioners during hot summer periods, means customers now use relatively more of their electricity at peak times, even if overall energy consumption has declined. Network costs have increased over the last decade as distributors invest in additional infrastructure upgrades to meet the higher peak demand. This increased investment has been a factor driving electricity price rises in the last decade.²⁵³

Given that there is far greater diversity today in how customers use electricity, it is important for customers to understand the value of their choices. Moving to network tariffs that reflect electricity use during peak demand periods will make electricity pricing more transparent.

As such, cost reflective pricing means the network tariffs retailers pay more accurately reflect the way electricity is used by customers. Retailers whose customers use electricity at peak times should pay rates better reflecting the costs created by their use. Customers who use less electricity in peak demand periods and more at other

²⁵³ Over the last couple of years, network costs and prices have started to flatten out or even decrease in some areas. This has been due, in part, to lower financing costs associated with these network investments.

times should benefit from lower network prices during non–peak times by their retailer offering them lower retail prices during these times. And if customers are given the opportunity to respond to these price signals by their retailer, network investment requirements will be lower than they otherwise would be. This reduces upwards pressure on electricity prices for everyone.

What are the key concepts to understand?

This final decision incorporates concepts which may be unfamiliar to some readers. In this section we provide descriptions of the more commonly used concepts. Readers familiar with electricity network regulation and terminology may choose to skip to the next section.

Difference between demand and consumption

Electricity consumption is the total amount of electricity consumed (used) over a period of time. For example, a typical Australian household might use between 5,000kWh to 6,000 kWh of electricity over 12 months.²⁵⁴ Demand means the amount of electricity used at a single point in time. Peak demand is the maximum amount of electricity used at a single point in time over a defined time period, often a day or a year. A typical Australian household might have its yearly peak demand of around 5kW, either on a hot summer afternoon when air conditioning is used, or on a winter evening when electric heating is used.²⁵⁵ That is, the household's annual peak demand is 5kW.

A good analogy for electricity consumption compared to electricity demand is a river flowing under a bridge. Annual electricity consumption is equivalent to the total water volume flowing under the bridge during a year. Electricity demand is equivalent to the volume of water under the bridge at a single point in time. Peak electricity demand is equivalent to the time when the largest volume of water is flowing under the bridge.

Long run marginal cost and residual costs

An important feature of this draft decision is the concept of long run marginal cost. Long run marginal cost is equivalent to the forward looking cost of a distributor providing one more unit of service, measured over a period of time sufficient for all factors of production to be varied. Long run marginal cost could also be described as a distributor's forward looking costs that are responsive to changes in electricity demand. This could include replacement of fixed assets at the end of their economic life.

²⁵⁴ Total consumption for a 'representative' residential household is estimated to fall between 5,000 kWh and 6,000 kWh in Queensland, NSW and South Australia. Total consumption for a representative residential household is lowest in Victoria (at around 4,000 kWh) and highest in the ACT (at around 7,000 kWh). AEMC, *2016 Residential electricity price trends—Final report*, December 2016, p.xii.

²⁵⁵ EMET Consultants Pty Ltd as referenced by solarchoice.net.au.

The NER require network tariffs to be based on long run marginal cost.²⁵⁶ However, not all of a distributor's costs are forward looking and responsive to changes in electricity demand. Hence, if network tariffs only reflected long run marginal cost, distributors would not recover all their costs. Costs not covered by a distributor's long run marginal cost are called 'residual costs'. The NER require network tariffs to recover residual costs in a way that minimises distortions to the price signals for efficient usage that would result from tariffs reflecting only long run marginal costs.²⁵⁷

Types of network tariffs

A network 'tariff' is the combination of charges that are billed to a customer's retailer in return for the distributor providing network services to that customer. Historically, most residential and small business customers in Australia have been on either a flat tariff or a block tariff (tiered pricing):

- **Flat tariff**—usually consists of a fixed charge and flat usage charge. That is, usage is charged the same price per unit of electricity consumed no matter how much electricity the customer uses.
- **Inclining block tariff**—usually consists of a fixed charge and a series of block charges where the price per unit of electricity consumed changes depending on the size of the customer's total consumption. The first consumption block is charged the lowest price, and each successive block of consumption is charged at higher rates.
- **Declining block tariff**—usually consists of a fixed charge and a series of block charges where the price per unit of electricity consumed changes depending on the size of the customer's total consumption. The first consumption block is charged the highest price, and each successive block of consumption is charged at lower rates. A declining block tariff is the reverse of an inclining block tariff.

Flat tariffs or inclining block tariffs are relatively common. Declining block tariffs are now relatively uncommon in most jurisdictions. Neither flat tariffs nor block tariffs are cost reflective. As explained above, network costs are largely driven by consumption during peak demand periods, with electricity consumption during off-peak periods relatively inexpensive to provide. However, the tariff structures of flat and block tariffs are unrelated to whether the customer is consuming electricity during peak or off-peak periods.

In contrast, time-of-use tariffs, demand tariffs and critical peak pricing are all more cost reflective forms of network tariffs. This is because the tariff structures are related to whether the customer is consuming electricity during peak or off-peak periods. Each of these tariffs is explained further below.

²⁵⁶ NER, cl. 6.18.5(f).

²⁵⁷ NER, cl. 6.18.5(g)(3).

A **time-of-use (TOU) tariff** usually also has a combination of fixed and usage charges (similar to flat and block tariffs). The difference is that time-of-use tariffs apply a different usage charge depending on when the customer consumes electricity. A time-of-use tariff will have defined charging windows when different rates apply. These charging windows might be labelled the 'peak' window, 'shoulder' window, and 'off-peak' window. The highest usage rate applies to consumption during the peak window, and the lowest usage rate applies to consumption during the off-peak window.

A **demand tariff** includes a charge based on the customer's highest measured demand during a specified period of time (e.g. over the billing period). Often, demand charges will be limited to the highest demand measured during peak charging windows. Typically, charging windows will coincide with the peak demand times for the whole network or for specific customer types (e.g. residential or small business customers). Demand tariffs may also include fixed charges and usage charges.

Critical peak pricing is another tariff variant and an example of more dynamic tariffs. Under this approach a distributor can specify periods of critical network peak demand, and will set prices particularly high for any demand or consumption that occurs during the specified critical peak event. This approach is generally in use currently only for certain larger business customers who can moderate consumption (e.g. by shutting down part of a production line) or use their own generation assets as a substitute for network electricity.

Distributors sometimes offer combinations of a primary tariff, such as those listed above, with secondary tariffs, such as controlled load tariffs. These controlled load tariffs typically apply a lower rate to electricity used for certain appliances in return for only being able to use those appliances during off peak times. For example, off peak hot water. In other cases, a lower rate may apply to customers who allow a distributor to remotely cycle appliances on and off during peak demand periods. For example, CitiPower and Powercor have tested technology to cycle customers' air conditioning. They are now considering how to trial this technology with customers.²⁵⁸ Distributors will often limit access to secondary tariffs to customers on specified primary tariffs such as flat tariffs or block tariffs.

In addition to tariffs, distributors sometimes seek to influence demand by offering rebates (partial refunds) to customers in return for demand reductions made by the customer during specific time periods. Rebates may be linked to critical peak demand times or to specific geographic areas or both.

Metering and tariffs

Flat tariffs or block tariffs can be applied to customers with basic accumulation meters (type 6 meters). This is because to calculate the tariff, it is only necessary to know the customer's total consumption, not when that consumption has occurred.

²⁵⁸ CitiPower and Powercor, Email to AER staff, *Remote air-conditioning cycling through meters or other means in Victoria*, 12 August 2016.

In Victoria, all customers with annual consumption of less than 160MWh have advanced metering infrastructure (AMI)—commonly referred to as **smart meters**—since 2009. The installation of these meters was undertaken by the five electricity distributors as part of a State Government mandated rollout. Smart meters can facilitate time-of-use or demand tariffs or more dynamic tariffs. This is because they measure both when, where and how much electricity a customer has consumed, which is necessary to calculate a time-of-use tariff or demand tariff. These meters are read remotely through communications functionality that is included in this metering infrastructure.

Outside Victoria, smart meters will become the standard for residential and small business customers for all new connections and existing premises where the meter must be replaced, from 1 December 2017. This means that in those states and territories outside Victoria that smart meters will gradually become increasingly common over time.

Degree of choice in network tariff assignment

A constituent element of a tariff structure statement are the policies and procedures a distributor will apply for assigning customers to network tariffs or reassigning customers from one network tariff to another.²⁵⁹ These policies and procedures should include certainty around whether a tariff is a 'mandatory' tariff, 'opt-out' tariff or 'opt-in' tariff for particular customer types. Among other possibilities, customer types might be based on the connection characteristics and metering arrangements of the customer, as well as whether the customer is a new or existing customer. The differences between these three options are:

- **A mandatory tariff**—means this is the only network tariff available for customers of a particular type. For example, industrial customers connected to the high voltage network and whose annual consumption falls within a particular range may be required to be assigned to a particular demand tariff, and there may be no other tariff options available to their retailer for them to choose from.
- **An opt-out tariff**—means the customer is assigned to this network tariff by default, but the customer (through their retailer) can choose to be re-assigned to a different tariff. For example, a residential customer may by default be assigned to a block tariff, but could (through their retailer) choose to switch to a time-of-use tariff.
- **An opt-in tariff**—means the customer (through their retailer) can choose to be re-assigned to this tariff, but the customer is by default assigned to some other network tariff. This is the opposite of an opt-out tariff. In the previous example, the time-of-use tariff would be described as an opt-in tariff.

It is important that distributors are clear in their tariff structure statements which of their proposed tariffs are mandatory, opt-out and opt-in, and for which customer types.

²⁵⁹ NER, cl.6.18.1A(a)(2).

Typically end customers are not directly involved in the process of selecting which *network tariff* they are assigned to. It is the retailer who submits the application to a distributor which determines what type of network tariff an end customer is assigned (where the distributor provides a choice over this assignment). End customers are involved in selecting the type of *retail tariff* that best meets their requirements.

Network tariff structures are not required by the NER to be reflected in retail tariff structures, so we do not yet know how retailers will respond to the new cost reflective network tariffs. We consider that even under mandatory or opt-out network tariff assignment policies it is likely end customers, especially residential and small business customers, would continue to have a choice from retailers over their retail tariff structure. Rather, cost reflective network tariffs place an incentive on *retailers* to respond to these peak price signals, as they are the ones who must pay the network tariffs.

To assign customers to one of the various tariffs offered by a distributor requires also that the distributor group customers into types, or classes. Customer classes might be based on a customer's connection type or metering arrangements, their annual usage, or whether the customer is a new or existing customer.

Elements of a tariff structure

A tariff structure incorporates the charges that make up a tariff. For example, a demand tariff typically comprises a fixed charge, a usage charge and a demand charge. How those charges are applied to a customer reflect the tariff's charging parameters. The design of a charging parameter might include:

- how frequently a charge is applied to a customer
- the times during which usage or demand is measured to calculate a charge
- variations in charges and how those variations are triggered.

Charging parameters may be varied to match the purpose of the distributor when designing the tariff. For example, the demand charge within a demand tariff may target the time of a distributor's broad network peak, a local regional peak, or a customer class peak (e.g. residential customers).

A group of customers with similar connection and usage characteristics will be grouped into the same tariff class. There can be multiple tariffs within a tariff class to which a customer could be assigned.

How does the tariff structure statement fit into the regulatory process?

Tariff structure statements are a new element of the NER. Generally, tariff structure statements will be submitted to us by distributors with their regulatory proposals for us to assess and determine how much revenue they are allowed to earn over the next regulatory control period (which is typically a five year period). Within this usual distribution determination process we will publish, assess and invite feedback on a

tariff structure statement along with a distributor's regulatory proposal. An approved tariff structure statement will then apply to the distributors' tariffs for the coming five year regulatory control period.

In this case, for the first round of tariff structure statements for each distributor, the NER require tariff structure statements be submitted outside the distribution determination process for all distributors, other than TasNetworks . This is because the timing of the introduction of tariff structure statements is occurring midway through the regulatory control period for all distributors other than TasNetworks.

The timing of TasNetworks' distribution determination enabled the Australian Energy Market Commission to specify in the NER that TasNetworks' tariff structure statement be submitted with its distribution determination. The upcoming distribution regulatory period for TasNetworks is to be only two years long. Hence, TasNetworks' initial tariff structure statement will apply for only two years.

For other distributors the next distribution determination processes are too far into the future for the usual process to be followed. Delaying submission of the initial tariff structure statement for those distributors would unduly delay the tariff reform process. For distributors in South Australia, Victoria, New South Wales, the Australian Capital Territory and Queensland, the NER required that tariff structure statements be submitted in advance of the next distribution determination. The initial tariff structure statements for these distributors will also apply for abbreviated periods, reflecting the time remaining until their next distribution determination. For ACT and NSW distributors, this is two years, covering the period 1 July 2017 to 30 June 2019. For Queensland and South Australian distributors, this is three years, covering the period from 1 July 2017 to 30 June 2020. For Victorian distributors, this is four years, covering the period from 1 January 2017 to 31 December 2020. For all distributors, their first tariff structure statement comes into effect in 2017.

Once approved, a tariff structure statement will guide a distributor in shaping its annual pricing proposals, submitted to us prior to each regulatory year. The annual pricing proposal is where a distributor translates the total allowed revenue from its distribution determination, and the allowed tariff structures from its tariff structure statement, into prices for individual tariffs.

We check that total expected revenue to be earned in the coming regulatory year is consistent with the annual revenue we determined may be earned in that year. We will now also check that an annual pricing proposal is consistent with a distributor's approved tariff structure statement. For example, a distributor may not propose a tariff which was not included in its approved tariff structure statement.²⁶⁰ Nor may a distributor vary the parameters of a tariff from that described in its tariff structure statement. This provides retailers, customers and other stakeholders with certainty about the structure of tariffs to be charged in each year of the regulatory control period.

²⁶⁰ The exemption to this is trial tariffs. Distributors may trial new tariffs that were not approved through the tariff structure statement if the tariff meets the requirements in NER clause 6.18.1C.

Tariff structure statements, in principle, address tariffs for both standard control services and alternative control services. However, in practice the tariffs for alternative control services are almost entirely dealt with by our distribution determinations and the annual pricing approval process. There is relatively little regulatory role left for tariff structure statements in the context of alternative control services. For this reason distributors deal with alternative control services in their tariff structure statements relatively briefly. For the same reason our tariff structure statement decisions will focus on standard control services and make relatively little comment on a distributor's alternative control services.

How does network pricing reform interact with other reforms?

Network tariff reform is commencing at the same time as reforms to the provision of metering services and access to customer information. These related reforms have implications for network tariffs, including the pace at which tariffs can evolve to become more cost reflective.

For metering, changes to the NER will establish new minimum specifications similar to smart meters currently in use. Smart metering is already in use across Victoria as a result of the mandated smart meter rollout. This has resulted in better meter functionality and data flows and facilitates broader use of more cost reflective pricing over time.

Not all consumers might want to use their own detailed consumption data and instead engage an energy services provider or retailer to use this information to recommend bundled energy plans. In recognition of the changing nature of how customer energy usage information might become available and used, reforms were also recently introduced to make it easier to obtain access to this information.²⁶¹ Customers will now be able to access their data from their distributor or retailer, and grant access to other parties to do so on their behalf. These reforms will not only help customers but also energy service providers in developing and offering more tailored and innovative energy products and services over time.

How does network pricing interact with network planning and demand management?

Demand pressures can be addressed by sending price signals to encourage customers (and retailers) to reduce demand, consistent with the aims of tariff reform. Alternatively, demand pressures can be addressed by network expenditure, as has been the case in the recent past. Another option, which distributors are required by the NER to consider, is the use of demand management initiatives. These can include rebates for customers who reduce their consumption. Or distributors can install or utilise generation assets in areas where the associated cost is less than the cost of

²⁶¹ Australian Energy Markets Commission, National Electricity Amendment (Customer access to information about their energy consumption) Rule 2014, Final Determination, 6 November 2014.

network investment to meet local area demand. Distributors can adopt some demand management solutions directly themselves, whereas other demand management solutions must be procured through an affiliated entity or other third party in accordance with the requirements of our ring fencing guideline.

We consider it useful for tariff structure statements to describe the distributor's approach to integrating tariff reform, network investment and demand management. Such discussion will position tariff structure statements within the broader context of how distributors intend to respond to demand and service challenges. Also, while the NER require distributors to consider the time and location varying nature of network cost drivers, difficulties with locational pricing suggest a larger role for demand management initiatives to address local network demand pressures.

An example of this is United Energy's use of rebates for customers in selected locations within its network, to encourage demand reductions that will limit peak demand.²⁶² This will alleviate, or postpone, the need for more costly network upgrades to those areas where network constraints may be likely in the near term, and still ensure continuing electricity supply and reliability. CitiPower and Powercor also flagged an intention to trial critical peak rebates and tariffs for similar reasons to United Energy.

As new technologies emerge in energy markets, it is anticipated that distributors will also focus on demand management and other non-network solutions to complement pricing as a means to reduce peak demand (where the cost of meeting that peak demand is higher than the value customers place on electricity use during those times) and delivering electricity efficiently.

²⁶² United Energy, *Revised Tariff Structure Statement 2017–20*, 29 April 2016, p. 34-35.

B TasNetworks' customer consultation and customer impact analysis

This section sets out the consultation process that TasNetworks' undertook when developing its 2017–19 tariff structure statement and how it responded to customer and stakeholder feedback. This section also sets out TasNetworks' customer impact analysis over the 2017–19 regulatory control period.

The NER requires distributors to consult with their customers in order to help them understand the new tariffs and thereby how they might mitigate the tariffs' impact on them.²⁶³ We are of the view that TasNetworks' stakeholder engagement contributes to the achievement of compliance with the distribution pricing principles and the national pricing objective.

We consider TasNetworks undertook significant stakeholder consultation processes in developing its tariff structure statement proposal. TasNetworks' customer consultation included:²⁶⁴

- Consultation paper: *Improving the way we price our network services*
- Created TasNetworks Tariff Reform Working Group which was expanded between initial and revised tariff structure statement proposals to include greater business customer representation, in addition to electricity retailers, customer advocacy groups, and independent energy advisors.
- Consumer engagement workshops
- Surveys
- Engaging with retailers
- Consulting with high voltage business customers regarding proposed increases in service charges in response to the AER draft decision.

We find that the consultations undertaken to develop each distributor's tariff structure statements have been wide ranging, generally clear and understandable and that stakeholders comments have been taken up, where possible, in development of the statements.

With many issues to cover, and in some cases complex material to convey, it is not possible for 100 per cent of issues raised by either stakeholders or the networks to be agreed, much less implemented. Inevitably there are trade-offs between the needs of different customer groups and tariff classes, and within tariff classes.

²⁶³ NER, clauses 6.18.5(h)(2) and (3) and 6.18.5(i)(1) and (2).

²⁶⁴ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 24–37.

As noted by TasNetworks, an important part of its ongoing review of network tariffs and continuing tariff reform journey is customer consultation.²⁶⁵ We encourage TasNetworks to continue to engage with customers such as Michael Powe and stakeholders such as Nekon for its next tariff structure statement as they consider the broader community is yet to understand and provide input into the proposed tariff changes.²⁶⁶ This position is supported by TREA.²⁶⁷

Table 19.17 sets out how TasNetworks responded to what stakeholders raised during consultation.

Table 19.17 Stakeholders' messages and TasNetworks' response

What stakeholders said	How TasNetworks responded
Better customer communication	<p>Designed a consultation plan focussed on stakeholders' awareness for network tariff reform process and openly canvassed the trade-offs involved in balancing competing goals, such as pricing simplicity versus cost reflectivity.</p> <p>It will consult with customers in developing future tariff structure statements and continue to seek feedback on how to improve customer communications.</p>
The peak demand problem doesn't exist in Tasmania, so why change network tariffs?	<p>Acknowledged Tasmania has less 'peaky' demand than other states but demand remains a concern.</p> <p>Noted it is efficient to better use current assets than upgrade or build more. Also to build new or renew assets with smaller capacities if it will meet expected demand.</p> <p>Noted tariff design can send price signals that encourage customers' management of peak demand that supports higher network utilisation and minimise future investment.</p> <p>Noted tariff reform also addresses cross subsidy issues.</p>
How will time of use demand based network tariffs be calculated?	<p>Proposed a number of models for calculating demand based tariffs. Stakeholders broadly agreed that a time of use demand based tariff the best option to reduce peak demand and investment required to renew and upgrade the network in the future. The two daily peak periods was also considered more appropriate than other options.</p>
Will the time of use demand based network tariffs be too complicated for people to understand?	<p>TasNetworks noted it was mindful to balance cost reflective tariffs with tariffs which are easy to understand. That is why the time of use demand tariff, consists of a service charge and both a peak and off-peak period.</p> <p>The demand based tariffs are available on an opt-in basis to allow time to understand the tariffs before switching.</p>
How will tariff reform affect customers?	<p>It is not yet possible to say whether an individual customer will pay more or less under a time of use demand based tariff. Partly because the metering data needed to do the necessary calculations does not currently exist. Also, because people use electricity differently if charged more for energy at peak times of the day than if they pay for how much electricity they consume.</p> <p>To help customers better understand the impacts of the time of use demand based tariff it will conduct a trial of the new tariffs.</p>
Will the network tariffs for home heating and hot water	<p>TasNetworks will not suddenly remove any existing network tariffs as part of the</p>

²⁶⁵ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 6.

²⁶⁶ Nekon Pty Ltd, *Submission on TasNetworks' draft decision and tariff structure statement (TSS)*, November 2016, p. 8; Powe, M., *Submission on TasNetworks' revised proposal*, 22 December 2016.

²⁶⁷ TREA, *Submission on TasNetworks' draft decision and tariff structure statement (TSS)*, December 2016, p. 2.

<p>be abolished?</p>	<p>process of tariff reform.</p> <p>An initial stakeholder engagement option was to remove the discounted network tariffs for all new customers. However, most of the feedback received was not supportive of this approach. As a result, it changed strategy to gradually rebalance these tariffs over time.</p>
<p>What impact will tariff reform have on vulnerable customers?</p>	<p>TasNetworks will transition customers to more cost reflective pricing over a period of time, to avoid significant changes in prices between years. This gives customers, including 'vulnerable' customers, an opportunity to understand and respond to changing price signals in order to reduce the potential impacts of tariff reform on their electricity bill.</p> <p>Its tariff structure statement engagement included a roundtable discussion to discuss how to support vulnerable customers. Its role in supporting vulnerable customers includes:</p> <ul style="list-style-type: none"> • contributing to the discussion on how the State Government's concession arrangements can support tariff reform; • working with retailers to provide information to support better customer decision making about their use of electricity, recognising the challenges faced by many vulnerable customers; • pursuing ongoing cost savings in order to put downward pressure on the delivered cost of electricity; and • ensuring that we provide predictable and sustainable pricing to our customers.
<p>If service charges increase, how will vulnerable customers control their electricity costs?</p>	<p>Proposed transition timelines designed to smooth out the transition to new and revised network tariffs. Transitioning customers to more cost reflective pricing over a period of time can avoid significant changes in prices between years.</p> <p>A gradual transition will give customers, including 'vulnerable' customers, an opportunity to understand and respond to changing price signals in order to reduce any potentially adverse impacts of tariff reform on their electricity bill. The steps to support vulnerable customers, outlined above, will also support the transition.</p>
<p>How long is the transition to the new network tariffs going to take?</p>	<p>TasNetworks will monitor the impact of the time of use demand based network tariffs on customers' electricity bills. This will be done in conjunction with the electricity retailers that offer retail tariffs that reflect the new network charges.</p> <p>Will transition existing tariffs towards full cost reflectivity over a period of up to 15 years. Initially proposed a faster pace of reform, but amended plans in response to customer and stakeholder feedback, which clearly expressed a preference for a longer transitional period.</p>
<p>Does cost reflective pricing mean that customers in different parts of the State will pay different prices?</p>	<p>For Tasmanian customers, jurisdictional requirements requires the distribution network tariffs for small customers of a particular class to be uniform, regardless of where in mainland Tasmania the customer is supplied with electricity. This applies to all customers in a given customer class that use less than 150 Megawatt hours per annum.</p>
<p>Will customers be forced onto demand tariffs?</p>	<p>The time of use demand based network tariffs will initially be available to customers as a choice (opt-in basis) through their electricity retailer. TasNetworks' Tariff Reform Working Group was particularly supportive of the proposal for time of use demand based network tariffs to be offered on an opt-in basis.</p> <p>Changes will be made to the existing network tariffs, but they will occur over the medium to long term, in order to facilitate a gradual transition. This will also give customers time to figure out at what point changing to a new time of use demand based network tariff would be to their advantage.</p>
<p>Will advanced meters be needed to implement time of use demand based network tariffs?</p>	<p>Following consideration of customer and stakeholder feedback, new time of use demand based tariffs will be underpinned by an advanced meter with communications; this enables the provision of monthly billing. Therefore, customers, switching to a time of use demand based network tariff will require the installation of a more advanced meter.</p>

Utilising advanced metering technology which allows monthly billing to retailers will mean TasNetworks can provide customers with timely information to help them better understand electricity usage in their homes.

What can customers on a time of use demand based network tariff do to reduce demand and control their electricity costs?

TasNetworks will work with customers to help them understand how they can reduce demand on the network at peak times. TasNetworks are working with retailers to better develop tools to help customers better understand electricity usage in their homes. Through a number of trials, TasNetworks' is learning and gathering information to develop tools which will be used to support ongoing customer engagement on tariff reform and new tariff offerings. More timely usage and demand information available over time through advanced meters, supporting information tools, and monthly billing will also help customers in better understanding their electricity usage.

Minimising demand during higher-priced peak periods (weekday mornings and evenings) can be as simple as switching off any discretionary appliances at those times, particularly appliances that use a lot of energy. Hot water systems may be set up to heat in non-peak periods and heaters may be able to be turned on ahead of the peak to warm homes and then operated at lower levels to maintain heating levels during the peak.

TasNetworks' aim is to provide network tariffs that provide a cost reflective signal so customers can understand the network costs associated with their usage at different times of the day.

Network tariffs need to be reflected in retail bills

TasNetworks are working closely with electricity retailers and the local economic regulator to support this outcome.

Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 30–37.

On customer impacts, we consider TasNetworks' revised tariff structure statement has demonstrated reasonable consideration of customer impacts due to the changes in its tariffs.²⁶⁸ As shown in table 19.18 and figure 19.8 below, TasNetworks' revised tariff structure statement includes customer impact analysis for customers on existing tariffs as well as customers transitioning to the new time of use demand tariffs.²⁶⁹

In regards to the latter, TasNetworks' included a worked example for calculating the demand charge for a residential customer on a time of use demand tariff.²⁷⁰ We consider the worked example will assist customers and stakeholders understanding of the new time of use demand tariff structure and impacts.

In determining customer impacts for customers transitioning to the new demand based tariffs, Jo De Silva, the TSBC, the ATA, the TREA and TasNetworks acknowledged the difficulty in assessing the impact because of the current limited metering data available.²⁷¹ Although acknowledging this limitation, the stakeholders considered that

²⁶⁸ NER, cl. 6.18.5(h); NER, cl. 6.18.5(i)

²⁶⁹ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 67–74.

²⁷⁰ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 67.

²⁷¹ CCP 4 - Joe De Silva, *Submission on TasNetworks' draft decision and tariff structure statement (TSS)*, November 2016, p. 12; TSBC, *Submission on TasNetworks' draft decision and tariff structure statement (TSS)*, November 2016, pp. 16-17; ATA, *Submission to draft decision: TasNetworks tariff structure statement*, December

TasNetworks' initial tariff structure statement had not given sufficient consideration to customer impacts and that this should be addressed in TasNetworks' revised tariff structure statement.²⁷²

In our draft decision we also acknowledged that TasNetworks' initial tariff structure statement did not contain a large amount of customer impact information in our draft decision.²⁷³ However, we also noted TasNetworks had developed more detailed customer impact analysis during its consultation process and that its revised tariff structure statement would benefit from its inclusion.

We consider TasNetworks' revised tariff structure statement has addressed the stakeholders concerns by including more detailed and updated customer impact analysis.²⁷⁴ Examples of this are set out in table 19.18 and figure 19.8 below. We also consider TasNetworks tariff trial will allow more detailed customer analysis the impacts of demand tariffs and help customers understand and respond in terms of electricity use and impacts on total bills. We expect TasNetworks to provide findings of its tariff trial in its next tariff structure statement.

Table 19.18 Summary of the impact on average customer network charges

Tariff	Typical network charge 2016	Typical network charge 2019	\$ impact	% impact
Residential (TAS31 & TAS41)	\$929	\$830	-\$99	10.6% lower
Small Business – Low Voltage (TAS22)	\$5,745	\$3,919	-\$1,826	31.7% lower
Small Business – Low Voltage Time of Use (TAS94)	\$13,531	\$10,254	-\$3,277	24.2% lower
Large Business – Low Voltage (TAS82)	\$28,594	\$22,305	-\$6,289	22.0% lower
Large Business – High Voltage (TASSDM)	\$97,240	\$79,238	-\$18,002	18.5% lower
Irrigation TAS75)	\$7,315	\$5,694	-\$1,621	22.1% lower
PAYG (TAS101)	\$706	\$651	-\$55	7.7% lower

Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 67.

2016, p. 2; TREA, *Submission on TasNetworks' draft decision and tariff structure statement (TSS)*, December 2016, p. 2; TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 70.

²⁷² ATA, *Submission to draft decision: TasNetworks tariff structure statement*, December 2016, p. 2.

²⁷³ AER, *Draft decision, TasNetworks distribution determination 2017–18 to 2018–19: Attachment 19 — Tariff structure statement*, September 2016, pp. 63–64.

²⁷⁴ TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, pp. 73–74.

Figure 19.8 TasNetworks' customer impacts for residential and small business customers moving to the time of use demand network tariffs

Figure 21: Network charge impact on an average residential customers of moving to the new time of use demand based network tariff

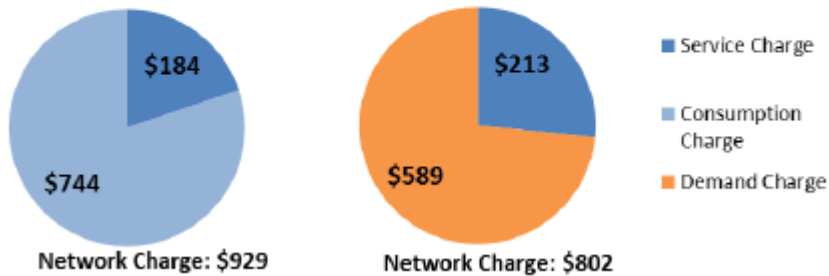
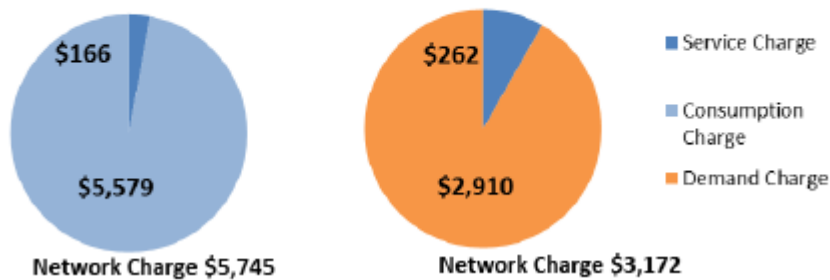


Figure 22: Network charge impact on an average low voltage small business customers of moving to the new time of use demand based tariff



Source: TasNetworks, *Tariff structure statement: Background and explanation*, December 2016, p. 67.

C AER consultation

On 11 March 2016, we published our issues paper on TasNetworks' tariff structure statement proposal. The paper summarised key aspects of TasNetworks' proposal, highlighting issues we considered relevant to our assessment and invited stakeholder submissions. Submissions on the issues paper closed on 28 April 2016. We received submissions from the following stakeholders:

1. Energy Networks Association
2. TasNetworks
3. Tasmanian Council of Social Services
4. Tasmanian Renewable Energy Alliance.

On 17 March 2016, we hosted a public forum on TasNetworks' tariff structure statement proposal. We highlighted issues we considered relevant to our assessment and invited stakeholder commentary.

On 21 April 2016, we provided TasNetworks with an information request covering topics such as tariff levels, tariff design, customer impacts and long run marginal cost. On 2 May 2016 TasNetworks provided a response to our request.

We published our draft decision on 29 September 2016. Submissions on our draft decision were invited by 1 December 2016. We received submissions from:

1. Consumer Challenge Panel 4 — David Headberry
2. Consumer Challenge Panel 4 — Jo De Silva
3. Nekon
4. Tasmanian Renewable Energy Alliance
5. Tasmanian Small Business Council
6. The Alternative Technology Association (ATA).

On 2 December 2016, we received TasNetworks' revised tariff structure statement. We invited submissions on TasNetworks' revised tariff structure statement. The submissions period closed on 23 December 2016. We received submissions from:

1. Consumer Challenge Panel 4 — David Headberry
2. Nekon
3. John Herbst
4. Don Maisch
5. Michael Powe
6. Tasmanian Farmers & Graziers Association.

On 28 April 2017, we made a final decision to approve TasNetworks revised tariff structure statement.