



Improving the way we price our services

**Tariff Structure Statement – Background and
Explanation**

**Regulatory Control Period
1 July 2017 to 30 June 2019**

Tasmanian Networks Pty Ltd
Tasmanian Distribution Tariff Structure Statement - Background and Explanation
Regulatory Control Period: 1 July 2017 to 30 June 2019

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1 Summary

Retail electricity tariffs have been used in Tasmania to charge customers for energy use for decades. However, prior to 2008 there was no requirement for separate network tariffs. The revenue needed to pay for network services was simply recovered via an internal charging mechanism between Aurora Energy's distribution and retail businesses.

When network tariffs were introduced they were developed on the basis of the existing retail tariffs, and did not reflect underlying network cost drivers. Our current range of network tariffs are, therefore, largely an evolution of those original network tariffs. In some cases, they also reflect decisions about retail electricity prices that were made decades ago, long before TasNetworks commenced operations, to offer particular groups of customers price-led incentives to use more electricity.

Like network companies across Australia, we are looking to change the way we charge for the delivery of electricity and access to the distribution network. Technological and customer driven changes in the electricity market, such as the widespread uptake of solar panels, mean that the current flat, consumption based network tariffs used to recover the cost of network services are no longer fit for purpose.

There have also been recent changes to the National Electricity Rules that require us to apply a more cost reflective approach to determining our network tariffs and other regulated charges. As a result, the charges for each customer must reflect the efficient cost of providing network services to that customer.

The process of tariff reform is challenging and, to be successful, we will need to gain customers' understanding and acceptance of any new or modified tariffs. To that end, we have been consulting with our customers and the wider community about the process of tariff reform, in order to better understand what customers want and value from their electricity service.

Customers are central to everything we do at TasNetworks and our success is anchored to our customers' prosperity and well-being. Through our customer and community engagement activities we have sought feedback and input on a wide range of tariff reform options and the tariffs set out in this paper reflect that feedback.

In the coming regulatory control period, beginning on 1 July 2017, and in the regulatory control periods that follow, TasNetworks will transition towards more cost reflective pricing. This will involve three main initiatives:

- realigning the relative prices of a number of existing tariffs to eliminate some long standing cross subsidies between different customer groups;
- rebalancing the service and variable charging parameters of most of our existing network tariffs, by increasing the emphasis on service charges and reducing the extent to which variable, consumption based charges are used to recover the cost of providing network services; and
- introducing time of use, demand based network tariffs for residential and low voltage business customers which, initially, will be available as a choice for our customers (opt-in basis) through their retailer.

The changes we have proposed will require transitional arrangements to ensure that we avoid any sudden adverse impacts for our customers, referred to as 'price shocks'. For most customers the transition will, therefore, involve only incremental changes.

The changes in our tariffs are designed only to be more cost reflective and provide better pricing signals to customers, not to increase the revenue we recover from our customers. A greater focus on cost reflective tariffs will allow customers to make more informed choices about their electricity usage, as well as investments in electricity generation, storage and/or control technology, like solar panels.

Nobody wants to pay more than they have to for electricity. We are committed to ensuring that customers pay only to the extent that they access and use our network services, and that the prices they pay are the lowest, sustainable prices possible. It's all part of our vision to be trusted by our customers to deliver today and create a better tomorrow.

During every stage of tariff reform, our annual revenue for the provision of network services will continue to be set by the Australian Energy Regulator (**AER**). The AER has recently published its draft decision on our proposed revenue and our new network tariff structures. The AER substantially approved our proposed tariffs – which are set out in our Tariff Structure Statement – but expressed concern that we had not fully considered the impact of the proposed increases in 'service (fixed) charges' for high voltage business customers, as the service charge is increasing significantly in percentage terms.

In this document, which is separate to the formal Tariff Structure Statement, we explain our thinking in developing our network tariff proposals and why they comply with the Rules requirements. We also address the AER's concerns regarding the impact of the proposed increases in the service charges for high voltage business customers.

2 Background

2.1 Who we are

We commenced operations as TasNetworks on 1 July 2014. We are a State Owned Corporation with total assets of over \$3 billion. We own, operate and maintain the network that delivers electricity to more than 280,000 Tasmanian households, businesses and organisations. Our purpose is to create value for our customers, our owners and our community.

Our network supports a relatively small but highly dispersed population, and is characterised by comparatively low levels of customer and energy density, even in the State's major regional population centres. Our network is a largely rural overhead distribution network and the use of low voltage underground cables is generally restricted to central business districts, newer subdivisions and commercial centres in urban and suburban areas.

Figure 1: Our network

The network is made up of:

Transmission

3,500

circuit kilometres of
transmission lines

8,500

transmission line
support structures

11,000

hectares of
easements

Distribution

15,000

kilometres of high
voltage powerlines

5,000

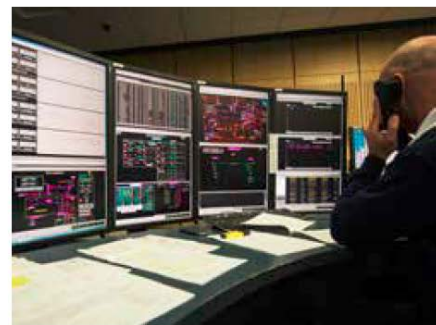
kilometres of low
voltage powerlines

2,000

kilometres of high
and low voltage
underground cables

222,000

poles



2.2 Purpose and objectives of this document

The purpose of this document is to clearly explain to our customers and other stakeholders how our tariffs have been developed and how they will apply during the regulatory period from 1 July 2017 to 30 June 2019. We are also continuing the conversation with our customers about how we intend to reform our range of network tariffs, particularly our plans for the subsequent regulatory period from 1 July 2019 to 30 June 2024.

Specifically, the objectives of this document are to:

- outline how we propose to move to pricing which is fairer for all our customers;
- facilitate customer and stakeholder understanding of our pricing by providing an overview of network pricing and associated concepts;
- set out our proposed tariff structures and charging parameters, as well as the approach for setting each tariff annually;
- explain how we arrived at our proposed tariffs and our future plans for tariffs in accordance with our strategy; and
- demonstrate how our tariffs and tariff structures comply with regulatory requirements.

As such, this document provides the background information and analysis that underpins our revised Tariff Structure Statement, which is submitted to the AER following its recent draft decision. A copy of our revised Tariff Structure Statement is available on our website.

2.3 Navigating this document

Table 1 provides answers to a number of common questions about our tariffs, as well as guidance on where to find more information on those topics in this Tariff Structure Statement.

Table 1: Navigation table

Question	Answer	Section
What is the purpose of this document?	The purpose of this document is to clearly explain to our customers and other stakeholders how our tariffs for the forthcoming regulatory period have been developed and how they will be applied. It accompanies the formal revised Tariff Structure Statement, which provides the specific network tariff information required in the Rules.	Section 2.2 Purpose and objectives of this document
Who is TasNetworks?	We are a provider of transmission and distribution network services for the Tasmanian region of the National Electricity Market. In this document, unless otherwise stated commentary relates to our capacity as a licensed distributor.	Section 2.1 Who we are

Question	Answer	Section
Summary of changes from our initial Tariff Structure Statement	<p>The AER substantially accepted our proposed network tariffs, but raised concerns that we had not given reasonable consideration of the impact of the proposed increases in 'service charges' for high voltage business customers, as the service charges are increasing significantly. The AER also suggested some minor improvements to the Tariff Structure Statement.</p> <p>We have addressed the AER's concerns regarding high voltage business customers and also adopted the suggested improvements.</p>	Section 3
How are electricity prices set? And who oversees our prices?	The Australian Energy Regulator determines the amount of revenue that TasNetworks is allowed to recover from customers. Each year we submit a Pricing Proposal to the Australian Energy Regulator that describes our proposed tariffs and demonstrates that any changes comply with our regulatory obligations.	Section 4.2 Regulation of revenue and tariffs
What is a standard control service?	'Standard control' refers to an approach taken by the Australian Energy Regulator to the regulation of prices which involves the use of a cap on the amount of revenue that a distribution network service provider is permitted to recover. The Australian Energy Regulator classifies the generic distribution network services which are relied on by most (if not all) customers, including connections to our distribution network, as standard control services. The annual revenue allowance which applies to our standard control services is recovered through general network charges (via network tariffs).	Section 4.2 Regulation of revenue and tariffs
What are alternative control services?	'Alternative control' denotes a form of pricing control used by the Australian Energy Regulator, which involves the use of price caps, rather than revenue caps, to regulate our prices. Services classified as alternative control services are services where the costs – and the associated benefits from the service – can be directly attributed to those customers.	Section 4.2 Regulation of revenue and tariffs

Question	Answer	Section
What is a network tariff?	Network tariffs are the fees and charges through which we recover the cost of building, running and maintaining the electricity network (standard control revenue recovery ¹). Every household, business and organisation connected to the network makes a contribution towards the cost of the network.	Section 4.2 Regulation of revenue and tariffs
What network tariffs are available to me?	In 2016, we have 17 different standard control network tariffs, which employ various combinations of service charges, consumption charges, time of use charges and demand charges. Apart from some large industrial users of electricity with unique supply requirements, each customer is allocated to the standard network tariff (or tariffs) applying to that type of customer.	Section 12 Tariff classes and charging parameters for standard control services
What is planned for our network tariffs?	We are changing our existing network tariffs so they are more cost reflective, and rebalancing some of our network tariffs to remove existing cross subsidies. Where appropriate, we propose moving towards demand based network pricing rather than the current consumption based network charges. For new network tariffs we are proposing a distinction between demand at peak and off-peak periods in a way that encourages practical changes in customer behaviour that may reduce the need for expenditure on the network and help us maintain lower prices in the future as a result.	Section 11 New and revised network tariffs for the 2017-2019 regulatory period
What are Pricing Principles?	Pricing Principles are specific requirements in the National Electricity Rules that our tariffs must comply with, including the requirements that our tariffs reflect the efficient cost of providing services, be based on the long run marginal cost of providing the service, take customer impacts into consideration and be capable of being understood by customers.	Section 15 Compliance with Pricing Principles

¹ Transmission network costs for distribution customers are bundled by us into our network tariffs and passed on to the retailer.

Question	Answer	Section
What is cost reflectivity?	Cost reflective network prices are prices that reflect the efficient costs of providing services to each customer class and meeting the demands that those customers place on the network. When network prices reflect the costs of providing network services, the prices customers pay will reflect the decisions they make about their usage of electricity.	Section 5.1 Cost reflectivity

3 Changes from our initial Tariff Structure Statement

3.1 The AER's Draft Decision and our response

On 29 January 2016 we submitted our initial Tariff Structure Statement to the AER for approval. In its draft decision, the AER approved most aspects of our proposal. In particular, the AER approved:

- The proposed introduction of time of use demand tariffs for residential and low voltage business customers, initially on an opt-in basis.
- The continuation of existing network tariffs in their current structure for at least the 2017–19 regulatory control period.
- The proposed realignment of specific tariffs to remove long standing cross subsidies between different customer groups.

While the AER generally supported our proposal to rebalance our tariffs, it raised concerns regarding the proposed increases in service charges for high voltage business customers. The AER also raised two other matters that, while not compliance issues, should be addressed to improve our Tariff Structure Statement:

- The provision of metering if customers move to a time of use demand based tariff;
- The provision of additional information on our long run marginal costs and the recovery of residual costs.

The table below explains how we have addressed the issues raised by the AER.

Table 2: Issues raised by the AER's draft decision and our response

Issue	AER Draft Decision	Our response
Provision of metering for opt-in time of use demand based tariffs	The AER commented that TasNetworks should explain that the time of use demand based tariffs require an appropriate meter, and how that meter can be obtained.	The revised Tariff Structure Statement sets out the metering requirements for each tariff. We also highlight that new metering will be required for customers opting in to time of use demand based tariffs.
Provision of additional information	The AER commented that information provided by TasNetworks in response to the AER's Issues Paper should be provided so that it is available in a single document.	We have revised this document to include the additional information that we provided to the AER in response to its Issue Paper.
Service charges for high voltage business customers	The AER raised concerns regarding the proposed increase in service charges for high voltage business customers, which are significant in percentage terms.	Section 3.2 below explains that the increase in service charges for high voltage business customers is offset by lower variable costs. We therefore regard the customer impact as manageable.

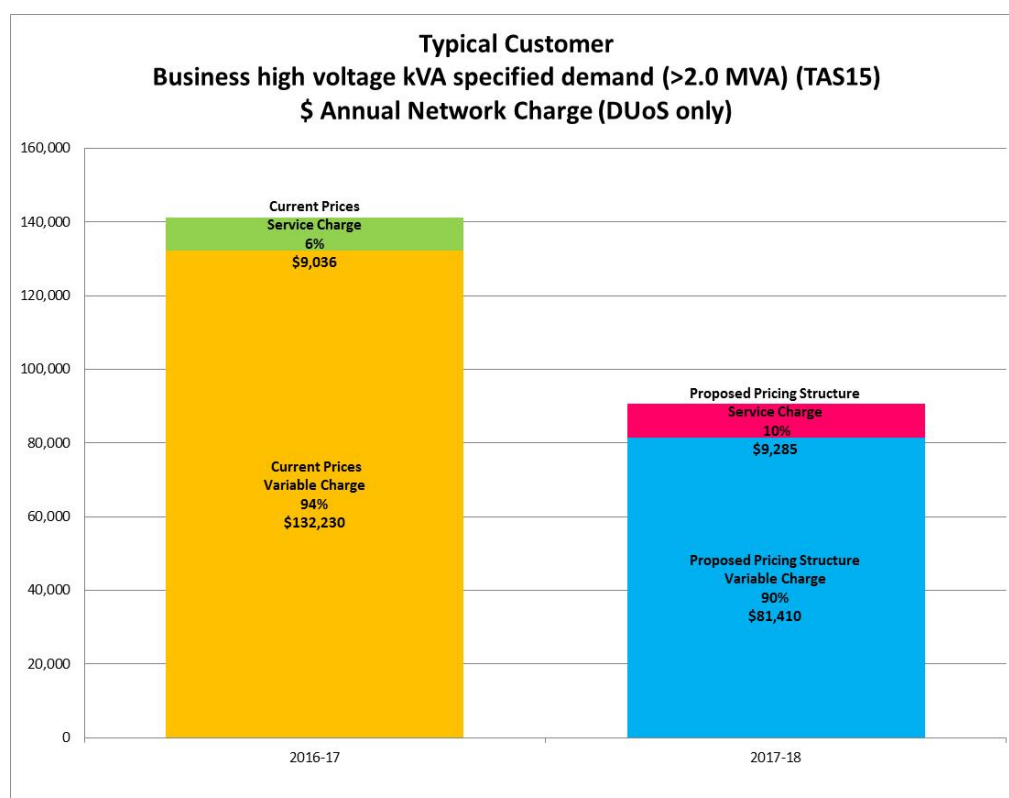
3.2 Service charges for high voltage business customers

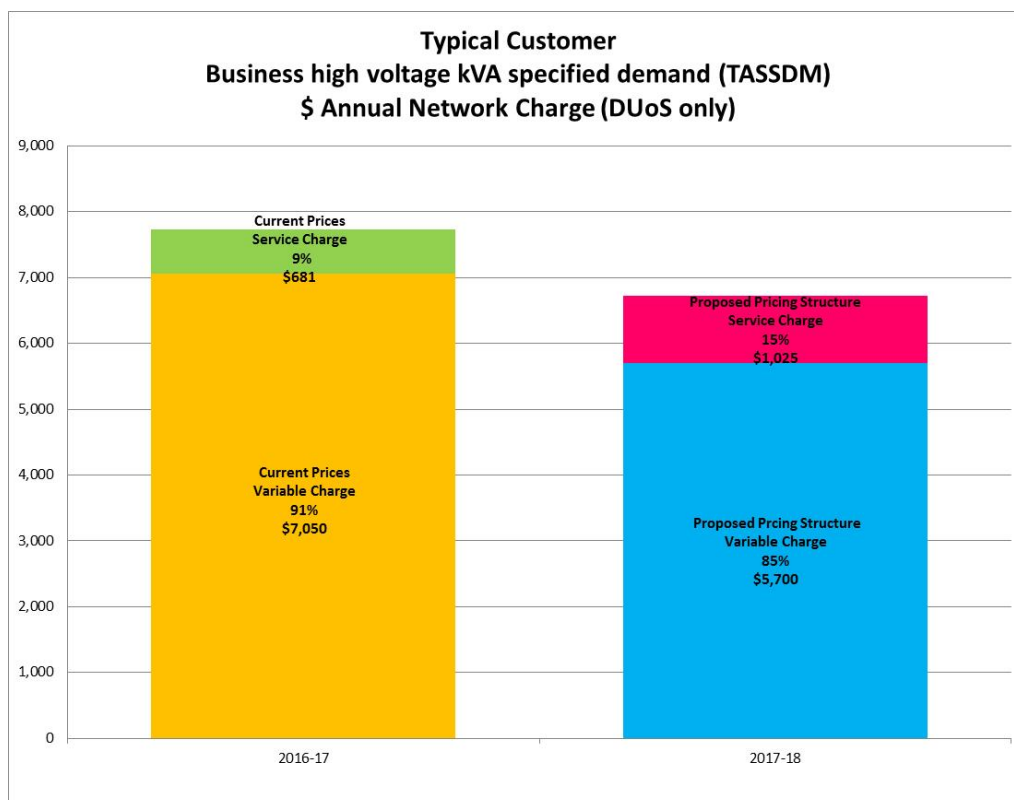
As noted above, the AER expressed concern that we had not appropriately considered the impact on business customers of the proposed increase in service charges.

The AER's draft decision refers to clause 6.18.5(h) of the National Electricity Rules (**Rules**), which requires us to consider the impact on retail customers of changes in tariffs from the previous regulatory year. This provision also allows us to vary network tariffs from strict compliance with pricing principles if the price impact on customers warrants such a variation.

We acknowledge that we are proposing material increases in service charges for some customer classes. On reflection, we accept that our initial Tariff Structure Statement should have provided additional information to explain why the level of increase in service charges does not warrant a variation from the pricing principles specified in the Rules. Our proposal for high voltage customers includes an increase in service charge, however this is accompanied by a decrease in the variable charge components and on average an overall decrease in the network charge. The figures below show the proposed change in the service charges and variable distribution use of system (DUoS) charges for a typical high voltage business customer:

Figure 2: Analysis of impact of service charge increases - average high voltage business customer





As shown in the figures above, while the percentage increases in the service charges are material, the proposed increase in the service charge will be accompanied by a significant reduction in the variable charge component and on average the overall network charge. For a typical high voltage customer the percentage increase in the service charge is more than offset by the effect of a reduction in the variable charges.

Following the AER's draft decision, we have undertaken further consultation with our high voltage business customers. This included:

- meeting with an expanded Pricing Reform Working Group, which includes greater representation from business customers and stakeholders;
- engaging with retailers regarding the AER's draft decision and our future tariff strategy; and
- discussions with high voltage business customers regarding the proposed increases in service charges.

The key themes that have arisen from our targeted high voltage customer consultation include:

- customers better understand our pricing strategy and pricing principles;
- customers are pleased to see a significant reduction in revenue and the corresponding downward pressure on network charges;
- customers understand that the service charge is a small component of the total network charges; and
- customers support the tariff component rebalancing, noting the overall forecast reduction in network charges.

We have also received feedback from our high voltage customers noting appreciation of our recent and planned further pricing engagement activities. We understand the importance of continuing the tariff reform conversation with our customers.

In light of the above analysis and engagement, our view is that clause 6.18.5(h) of the Rules would not warrant a variation from compliance with the pricing principles. While the percentage increase in the service charges for high voltage business customers is material, the new charges are more cost reflective and will lead to an overall reduction in network charges for a typical high voltage customer and a more significant reduction for larger high voltage customers.

3.3 AER's comments on future Tariff Structure Statements

The AER's draft decision also highlighted a number of areas that we should develop further in our future tariff structure statements. In particular, the AER identified the following issues where it expects us to continue to improve our pricing strategy and engagement through customer engagement, informed by data collected during the forthcoming regulatory period:

- the timeframe for transitioning all residential and business customers to time of use demand based tariffs;
- the use of a 30 minute window to measure demand;
- transition to more frequent billing cycles for customers on time of use demand based tariffs;
- the timeframe for tariff realignment for subsidised tariffs;
- options for irrigation customer tariffs and the consultation process with its Pricing Reform Working Group; and
- the timeframe for alignment of charging windows of the low voltage time of use consumption tariff with the demand tariff.

In relation to monthly billing, we are now proposing this be introduced for the new time of use demand based tariffs from 1 July 2017. We are progressing the remaining issues raised by the AER through ongoing engagement particularly with our Pricing Reform Working Group, which now includes increased business customer representation.

3.4 Revision to document structure

Following the publication of the draft decision, the AER indicated that it would prefer:

- a Tariff Structure Statement that addresses the requirements of clause 6.18.1A of the Rules; and
- a separate document that provides background on the development of the proposed tariffs and explains why the proposal complies with the Rules requirements.

In our initial Tariff Structure Statement, we combined in a single document the information requirements by the Rules with the background and compliance explanatory material. In accordance with the AER's preferred approach, this document is the 'Tariff Structure Statement – Background and Explanation'. A separate 'Tariff Structure Statement – Formal Statement' will be submitted alongside this document.

4 Introduction to pricing and tariffs

Our network tariffs, which are just one component of a typical customer's electricity bill, are subject to regulation by the Australian Energy Regulator. For each regulatory period (usually five years) the Australian Energy Regulator sets our allowable revenue for the distribution services we provide and then approves the network tariffs we use to recover that revenue on an annual basis. TasNetworks' next regulatory period is for two years, so that we can align the regulatory periods for both our distribution and transmission networks from 2019 onwards.

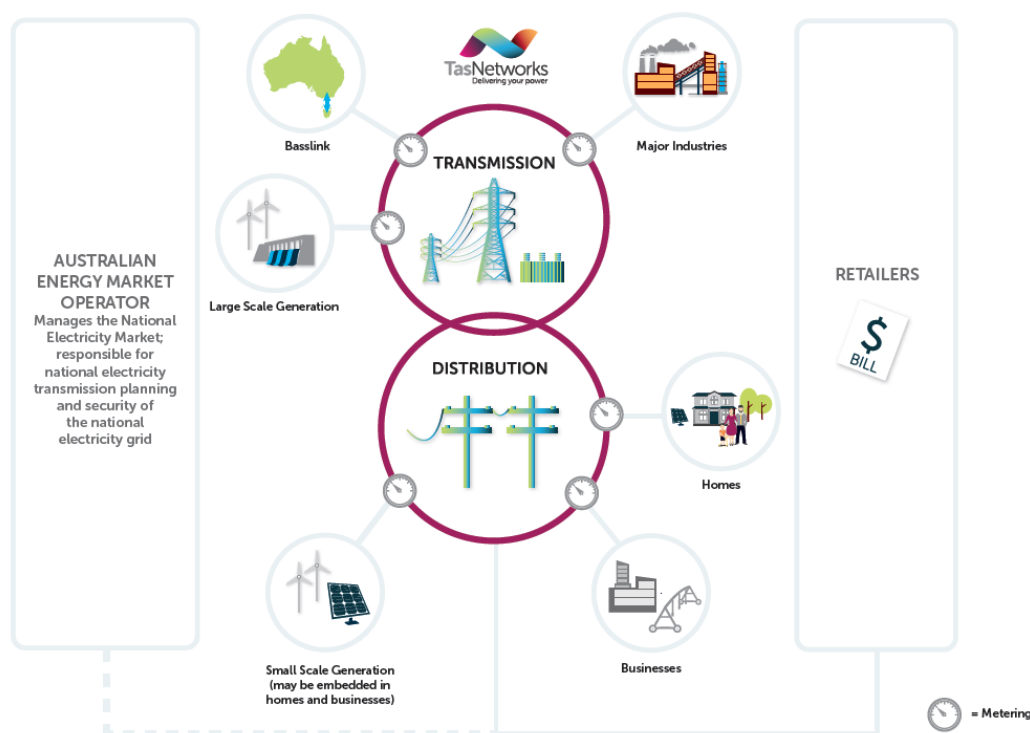
The Australian Energy Regulator also approves the tariffs or prices that we may charge for a range of other regulated services, such as metering and public lighting.

4.1 Electricity supply chain

The cost of electricity consumed by households and small businesses covers much more than the cost of generating that energy. It also includes the cost of transporting electricity via the high voltage transmission network and the low voltage poles and wires which make up the distribution network, as well as the costs associated with retailing electricity to end-users.

Figure 3 illustrates the different links and customer service relationships in the electricity supply chain. We are responsible for the transmission, distribution and metering functions. The use of our distribution network, and the associated services we provide, is paid for by our customers through their retail electricity bill.

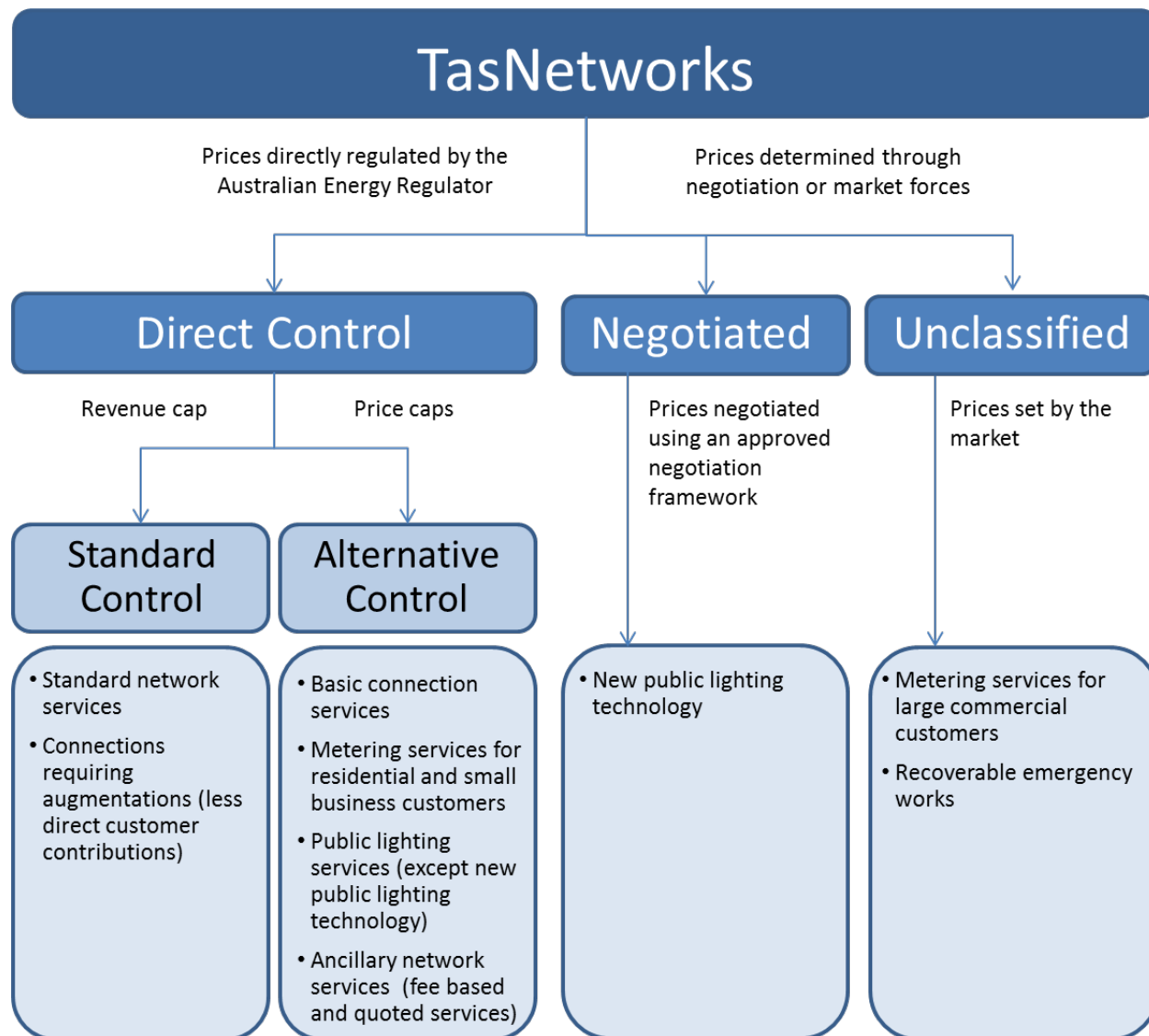
Figure 3: Customer Service Relationships



4.2 Regulation of revenue and tariffs

This paper details our approach to setting tariffs for direct control services. Direct control services comprise standard control services and alternative control services, as summarised in Figure 4.

Figure 4: Classification of services and form of price regulation (control)



Note: Alternative control metering services relate to type 6 and 7 meters. Unclassified metering services relate to type 1-4 meters.

'Standard control' refers to an approach taken by the Australian Energy Regulator to the regulation of network prices that involves the use of a cap on the amount of revenue that a distributor is permitted to recover. The Australian Energy Regulator classifies generic distribution network services, including constructing, maintaining, repairing and augmenting the shared network, as standard control services.

The regulatory framework that the Australian Energy Regulator applies requires us to demonstrate the prudence and efficiency of the expenditure we propose in order to achieve appropriate levels of service quality and reliability in the provision of standard control services. These factors are considered in determining our revenue allowance. The annual revenue allowance which applies to our standard control services is recovered via network tariffs.

‘Alternative control’ refers to another form of pricing control used by the Australian Energy Regulator which involves the use of price caps, rather than revenue caps, to regulate our prices. The services classified as alternative control services are services where the costs and the associated benefits from the service can be directly attributed to a particular customer. For TasNetworks this includes distribution metering services for small customers (type 6² and 7³ meters), ancillary services (quoted services and fee based services), and public lighting services (excluding new public lighting technology).

Services we provide where the price is either negotiated with our customers (negotiated services) or not regulated by the Australian Energy Regulator are not addressed in this paper.

² Meters that are read as accumulation meters

³ Unmetered supply

5 Changing regulatory environment

As one of the five regional markets which make up the National Electricity Market, Tasmania's electricity supply industry is largely governed by national regulatory bodies. There have been a number of changes to the national regulatory environment which have been implemented in recent years, or are to be implemented in the near future, that affect how we price our services. Those changes include:

- a requirement to apply a more cost reflective approach to determining prices; and
- the Australian Energy Market Commission's *Power of choice reforms*⁴, which are intended to give consumers more choice in the way they use electricity and manage their energy costs. One of the key aspects of these reforms is the facilitation of greater competition in metering, including the deployment of advanced meters.

5.1 Cost reflectivity

There have been recent changes to the regulatory framework that require us to apply a more cost reflective approach to determining our prices, which must also be consistent with a number of pricing principles and a new 'Network Pricing Objective' that are set out in the Rules. The Network Pricing Objective requires that the prices a distribution business charges each customer should reflect the business' efficient costs of providing network services to that customer.

A greater focus on cost reflective prices will allow customers to make informed choices about when, where and how they use electricity. For example, if customers choose to use electricity in ways that reduce network costs (such as by reducing demand at peak periods), they should be rewarded through lower charges.

We have applied the Pricing Principles defined in the Rules when developing our Tariff Strategy and indicative charges for the coming regulatory period, in order to achieve the Network Pricing Objective. Section 15 sets out how we have met the new Network Pricing Objective and Pricing Principles.

⁴ Australian Energy Market Commission

5.2 Customer impact

The introduction of cost reflective network tariffs is in the long term interests of customers, as it can assist in reducing long term average network tariffs. However, we recognise that the introduction of time of use demand based network tariffs represents a significant change for our customers, particularly residential customers. As such, we recognise our customers will require time to adjust to a move to demand based network tariffs, time to adapt their behaviour and/or implement solutions which will assist in demand management.

The Network Pricing Objective set out in the Rules requires that our tariffs for each of our customers should reflect the costs of providing services to those customers. Our tariffs should only depart from these efficient levels to mitigate any sudden, adverse effects which moving to more cost reflective pricing might otherwise have on customers. This ability to deviate from cost reflective prices is referred to as the customer impact principle set out in the National Electricity Rules. We consider the application of the customer impact principle to be a particularly important element of ensuring successful tariff reform in Tasmania.

As part of our Tariff Strategy development process, we considered the impacts of our proposed tariffs on our customers. Our analysis, which is summarised in section 14, informed the development of our proposed tariffs, as well as our transition plan. As we transition to more cost reflective pricing we will continue to assess the impacts of our tariffs on different customer groups and ensure that we adhere to the requirements of the customer impact principle.

5.3 Advanced metering

The changes to the regulatory framework for metering from 1 December 2017 are the result of a national review by the Australian Energy Market Commission. They are intended to facilitate the introduction of advanced metering and expand competition in the provision of metering and related services to all customers. To that end, the changes lay the foundation for a market led and consumer driven approach to the deployment of advanced meters by opening up to competition to the provision of meters to residential and small business customers.

As advanced meters become commonplace in the market, customers may look to demand based tariffs to maximise the potential benefits of this technology. It should be noted, in particular, that customers will require an advanced meter if opting for a time of use demand based tariff. Advanced meters also have potential benefits for the operation of our network, such as remote disconnection and re-connection services, and we will be undertaking further analysis to identify how best to realise those benefits.

Our longer term plans for implementation of more cost reflective tariffs have regard to these developments. We recognise that advanced meters can support the introduction of more cost reflective pricing, as they will support the provision of better customer and network information, including information about customers' demand and their responsiveness to network pricing signals.

6 Customer and technology driven change

6.1 Introduction

The electricity supply industry in Australia is continuing to evolve in response to a changing energy market, driven by changes in customer behaviour and the uptake of new technologies, such as battery storage. We understand that the decision by customers to invest in new energy technologies has costs which need to be balanced against the benefits of that investment.

In the context of tariff reform we understand the importance of providing clear and predictable price signals for customers who may be considering these types of investments. Our strategy aims to provide effective investment signals, both now and into the future, that customers can rely on when deciding whether or not to invest in technology that will, in many cases, continue to serve them for many years.

Following is an overview of the technologies which are expected to influence the electricity market in the coming decade.

6.2 Solar panels

Australia has one of the highest per capita take-ups of photovoltaic solar panels in the world, and in Tasmania around 25,000 customers have put solar panels on their homes and business premises since 2001. Over 10,000 have installed solar hot water systems.⁵

TasNetworks' costs are largely driven by the maximum load that has to be met, with the demand for electricity in Tasmania peaking during winter on weekday mornings and evenings. Solar panels rarely generate much electricity at those peak times. However, solar panel owners can put as much load on the network at peak times as everyone else, but are generally charged less for their use of the network. This is because many of our network tariffs are currently based on the energy consumed, and solar panel owners typically consume less energy delivered by the electricity grid.

The renewable energy targets, grants and feed-in tariffs which encouraged people to install solar panels were not envisaged when the current network tariffs were originally designed. As a result, households and businesses that have not installed solar panels have been subsidising the network costs of those that have. This is because customers with solar panels avoid making their full contribution towards the cost of the network by virtue of being billed for the delivery of less energy.

⁵ Source: Postcode data for small-scale installations, Clean Energy Regulator

In summary, solar customers who take less energy from the grid should pay less for energy in the bill they receive from their electricity retailer. However, unless these customers also reduce their contribution to demand on the network at peak times, they should still contribute the same as other customers do towards network costs. Their network costs should also reflect the other services offered by the grid, including allowing the export of excess generation for sale, and providing a reliable source of energy when the sun isn't shining.

Solar panels and other sources of embedded generation will continue to be an important part of Tasmania's energy solutions in the decades to come. We therefore need to ensure network pricing better reflects the costs, and benefits, of providing a range of network services to our customers and starts to unwind hidden cross subsidies.

6.3 Batteries

Falling costs and advances in battery technology are likely to see battery storage emerge as the next energy service trend, causing another major shift in the electricity market and network operation.

As battery technology becomes more cost effective, batteries will enable customers to store the electricity they generate (generated by photovoltaic solar panels, for example) for use at other times. This will allow our customers to generate their own electricity when the sun is shining and then, instead of exporting any excess energy generated to the grid, store that power to reduce their consumption of electricity from the grid at other times. Equally, batteries could be charged with energy from the grid at lower priced (off-peak) periods, and discharged to avoid making demands on the network at higher priced periods (peak periods).

Network tariff reform will support price signals as to when it is more or less expensive to put load on the network, and therefore when it makes most sense to store and use energy in batteries. This may start to reduce peak demand on our network and the need for capacity upgrades in the future, supporting downward pressure on electricity prices for everyone.

Increasingly batteries may also be used to export electricity to the grid, as another local energy source. As electricity markets and system operation becomes more sophisticated, the range of distributed energy sources can be harnessed to provide the best mix of services at the lowest cost. If we get the network price signals and operating arrangements right, in the long run this could help to manage local demand issues and help to keep prices lower. Network tariff reform is, therefore, an important part of enabling efficient investment in batteries, and a range of supporting technologies, to reduce network costs.

6.4 Electric vehicles

The use of electric vehicles charged from a connection to the distribution network is likely to increase in the coming years. We are currently sponsoring a feasibility study to encourage uptake of electric vehicles by Tasmanian car fleet managers. We are also considering how to best achieve successful integration of this technology with our network, to support growth in electric vehicle numbers and an efficient roll out of both public and private charging stations.

Sending the right network price signals will help to ensure that electric vehicle owners understand their contribution to network costs, including when it is more or less expensive to charge.

7 Customer, retailer and stakeholder engagement

Customers are central to everything we do at TasNetworks and our success is anchored to the prosperity and well-being of our customers. As part of the process of improving our pricing, we engaged extensively with customers, retailers and stakeholders for the purpose of obtaining their guidance on the development of our approach to tariff reform. This section describes how we have engaged with those stakeholders and how we have responded to the feedback we received.

7.1 Our customers

TasNetworks presently delivers electricity to more than 280,000 Tasmanian households, businesses and organisations, and services the customers of five electricity retailers. Figure 5 provides a summary of our distribution customers.

Figure 5: Our distribution customers



We do not limit the definition of a customer to only those who consume the energy delivered by our network. Our customer base includes electricity retailers, customers connected to our network, as well as the wider Tasmanian community and their representatives, including customer advocacy groups. As part of the tariff reform process we have engaged with all of the customer segments outlined in Figure 6.

Figure 6: Our customer segments



7.2 Our customer engagement and consultation process

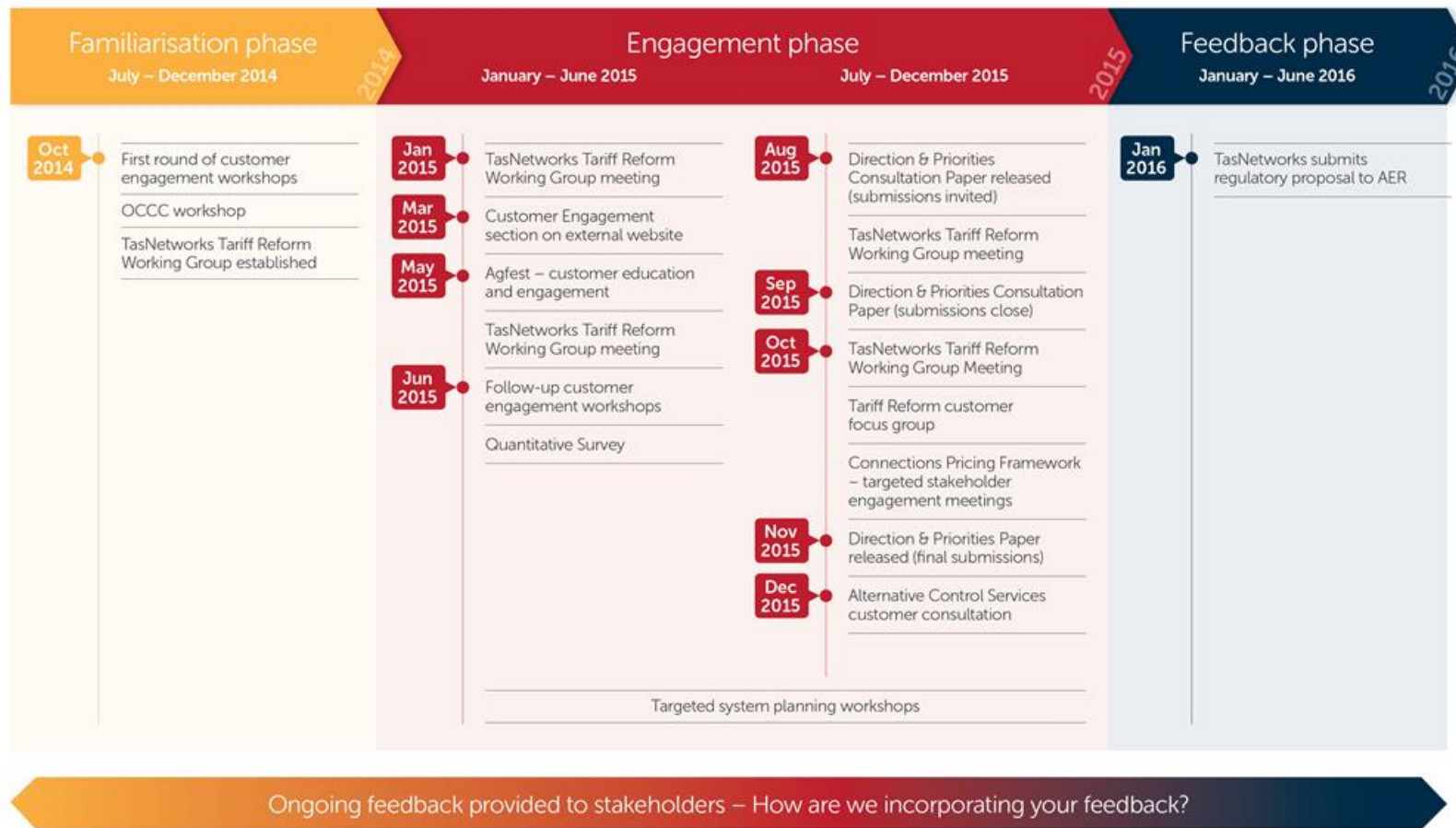
Our process of tariff reform has involved trend analysis, stakeholder engagement and assessment of options against established criteria and the regulatory requirements. We have employed a variety of consultation methodologies and engagement activities to provide us with a range of both quantitative and qualitative data that has informed our regulatory proposal and our Tariff Strategy. The range of groups we have interacted with and the engagement activities we have undertaken has been summarised in Figure 7.

Figure 7: Our engagement activities



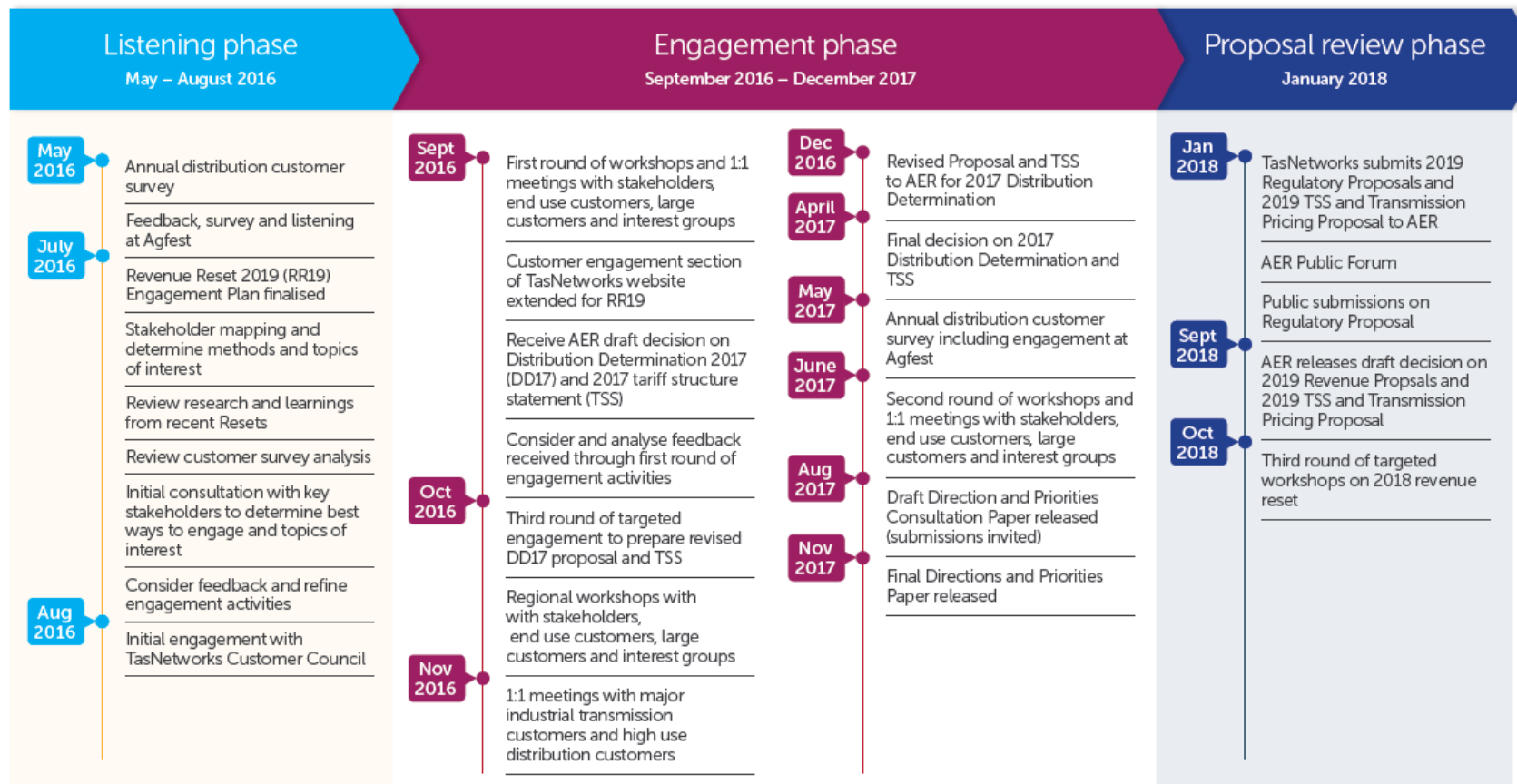
We created the TasNetworks Tariff Reform Working Group in late 2014 to provide advice on customer needs and issues in respect to our Tariff Strategy. We have recently expanded the group to include greater business customer representation, in addition to electricity retailers, customer advocacy groups, and independent energy advisors. The purpose of the renamed TasNetworks Pricing Reform Working Group is to provide a forum where members can contribute to the direction of our Tariff Strategy, provide feedback and act as an advisory group on pricing issues, including tariff reform. The revenue reset customer engagement plan in Figure 8 (see following) shows the range of activities we have conducted in order to gather as much feedback from customers as possible on our regulatory proposal as well as the development of our tariffs.

Figure 8: TasNetworks 2017-2019 Distribution Revenue Reset Engagement Plan



Since then, consistent with our engagement strategy we have continue to embed how we engage with customers as a 'business as usual activity'; our most update engagement plan is summarised below.

Figure 9: TasNetworks' 2019-2024 Revenue Reset Engagement Plan

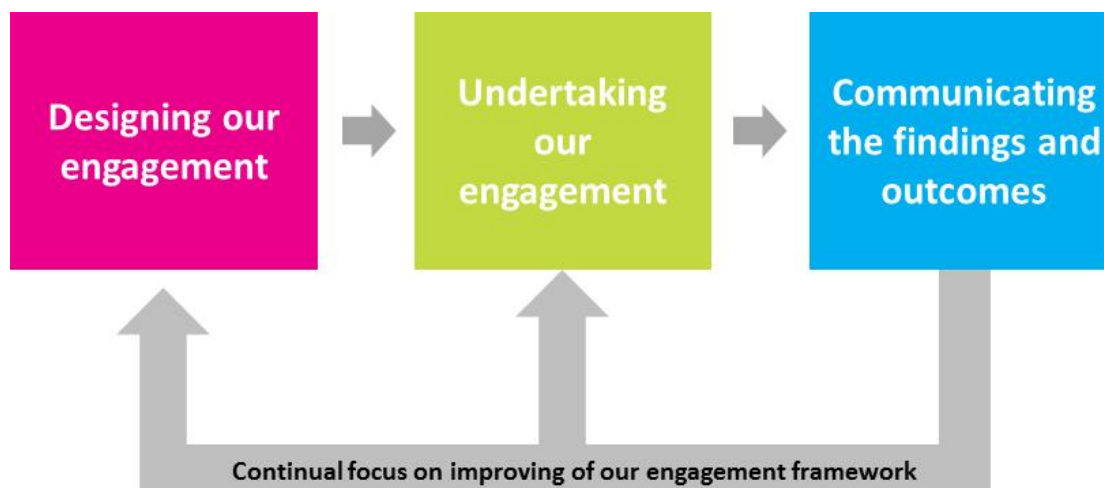


Key engagement topics/requirements

- TasNetworks' Business Strategy 2025
- Forecast expenditure programs
- Connections and Metering
- Pricing Strategy and Methodology
- Tariff Reform
- Regulatory Framework including incentive schemes
- New technologies and the future network
- Customer's preferences on service, price and reliability

We are constantly improving our engagement processes, refining our messages and responding to our customers' and stakeholders' feedback. We will continue to communicate with our customers about tariff reform and our Tariff Strategy. In doing so we will continue to improve the effectiveness of our engagement, our engagement framework is summarised in Figure 10.

Figure 10: Our engagement framework



7.3 Key findings from our customer engagement

The process of tariff reform is challenging and, to be successful, we will need to gain customers' understanding and acceptance of any new or modified tariffs. The task of informing customers and encouraging them to embrace change is made more difficult by the broad spectrum of energy literacy within the community, as well as varying degrees of interest amongst consumers in actively managing their use of energy. As reforms and new technologies give customers more choices in the way they use electricity, the ability of customers to take advantage of those advances will differ depending on their circumstances.

There is a wide range of potential customer attitudes to engagement in relation to their energy services and there is a risk that, without the appropriate information and support, some customers are likely to benefit less than others when it comes to tariff reform. While some customers will have both the desire and the capacity to actively manage their energy supply, in Tasmania a significant proportion of customers are likely to be considered vulnerable or passive without the capacity or desire to actively manage their usage to maximise benefit.

This diversity in customer expectations and priorities means that communicating the potential benefits of network tariff reform will require high levels of cooperation between TasNetworks, retailers, consumer advocates, government, independent suppliers of energy products and services, and other interested stakeholders.

Through our engagement activities we have sought feedback and input on a wide range of matters, including tariff design, transition paths for tariff reform, and whether our proposed tariffs are implementable and easily understood. While the tariffs set out in this paper reflect the feedback gathered to date, we are committed to continuing the conversation with our customers on the subject of tariff reform, as we move towards fairer pricing for customers.

Following the publication of our initial Tariff Structure Statement, we have undertaken further engagement with our customers, including:

- meeting with an expanded Pricing Reform Working Group, which includes greater representation from business customers and stakeholders;
- engaging with retailers regarding the AER's draft decision and our future tariff strategy; and
- consulting with high voltage business customers regarding the proposed increases in service charges, as discussed in section 3.2.

We also held a network planning forum, which examined the links between demand management and pricing, details of which are available on our website. We understand the importance of continuing stakeholder engagement on pricing and view this as an on-going business activity, particularly as we prepare for the next regulatory period, which commences on 1 July 2019.

While consultation is on-going, the feedback we have received to date has been very consistent. Table 3 details the key issues and questions raised during the course of our consultation and provides responses to that feedback, including explanations of how we have sought to address concerns raised during the engagement process.

Table 3: Issues raised by our customers

Customer feedback	Our response
Customer communication Customers want to better understand how network tariff reform, including the optional time of use demand based network tariffs, will work and what impacts it will have on them.	We have designed a consultation plan that focusses on making stakeholders aware of the choices available to customers as part of the network tariff reform process, and openly canvasses the trade-offs involved in striking a balance between competing goals, such as pricing simplicity versus cost reflectivity, in the long-term interests of our customers. To help customers understand all our tariffs we will provide indicative prices on our website and publish changes to our prices on an annual basis. We also welcome feedback on our Tariff Structure Statement and will consult with our customers in the development of future versions of the Tariff Structure Statement. We will continue to seek feedback on how we can improve our customer communications.

Customer feedback	Our response
<p>The peak demand problem doesn't exist in Tasmania, so why change network tariffs?</p> <p>Demand based network pricing provides a price signal relating to peak demand.</p> <p>Some stakeholders noted that the Tasmanian peak demand is not as 'peaky' as in some mainland states where there is high air conditioning load on hot days.</p> <p>A number of other stakeholders were of the view that as consumption of energy and peak demand has fallen from levels seen 5 years ago, there is no case for change in Tasmania.</p>	<p>It is true that the overall consumption of electricity in Tasmania has decreased from levels seen five years ago. It is also true that Tasmanian network peak demand has fallen from the peak seen in 2008-09, in part due to closure of some large directly-connected transmission customers a number of years ago.</p> <p>Tasmania does have a less 'peaky' demand for electricity than many other states. Peaks in the demand for electricity on the transmission and distribution network, which in Tasmania occur on cold weekday mornings and evenings, have stabilised in recent years, and may take some years to again reach 2008-09 levels. Despite this, there are still areas of the state where demand is increasing at faster than average levels.</p> <p>It is more efficient to better use the assets we have rather than upgrade those assets or build more. It also makes sense to build new assets or renew existing assets with smaller capacities than those they replace, if smaller capacity assets will meet expected customer demand. Network tariff design can play an active part in sending pricing signals to customers that encourage them to manage their peak demand in a way that supports higher network utilisation and, therefore, minimise future investment costs. It makes sense in Tasmania, therefore, to set network prices that send a price signal which is linked to peak demand.</p> <p>Demand management is not the only driver of network tariff reform. Under the current consumption based network tariffs there are some customers, such as those with solar panels, who pay less than their fair share for network services, even though the demands they place on the network at peak times may be just as great as customers without solar panels. Network tariff reform is also intended to address these cross subsidy issues.</p>

Customer feedback	Our response
<p>How will time of use demand based network tariffs be calculated?</p> <p>Most people equate the idea of user pays with paying for the quantity of a product or service which they consume, and the electricity bills they receive from their retailer reflect the units of electricity they've consumed over the billing period.</p> <p>Most people also equate 'demand' for a product with the quantity consumed, so the idea that the demand for electricity is something different is new to a lot of people and needs to be explained.</p>	<p>Paying network charges based on the amount of electricity consumed sounds reasonable. But it ignores the fact that the main driver of costs for networks is not total power consumed over an extended period of time, but how much is consumed at peak times. In Tasmania, these network costs make up around half of the average residential retail customer bill.</p> <p>There are a number of ways in which demand based network tariffs could be applied. During our customer consultation on tariff reform we put forward a number of different models for calculating demand based network tariffs. These considered how to identify individual customers' demand for billing purposes. Our proposed measurement methodology was supported through this consultation. A summary of options considered and analysed is provided in Section 10 of this paper.</p> <p>Our view is that, in the long term, time of use demand based network tariffs are the best network tariff structure. The customers and stakeholders that we have engaged with broadly agree that a time of use demand based network tariff is the best option for the purpose of reducing peak demand and reducing the investment required to renew and upgrade the network in the future. The plan to identify two daily peak periods, while increasing the complexity of a demand based network tariff, was also considered more appropriate than other time of use options.</p>
<p>Will the time of use demand based network tariffs be too complicated for people to understand?</p> <p>A common theme amongst the customer and consumer groups we consulted with was the concern that the new time of use demand based network tariffs would lead to an increase in complexity, and that customers will find it hard to choose between different tariffs.</p>	<p>We have been mindful of the need to strike a balance between tariffs which are cost reflective and tariffs which are easy for our customers to understand. That's why our preferred demand based network tariff is a time of use tariff, consisting of a service charge and demand charges for both a peak and off-peak period.</p> <p>Initially, we are also making our demand based network tariffs available on an opt-in basis, via electricity retailers, to allow customers time to understand the tariffs before switching.</p>

Customer feedback	Our response
<p>How will tariff reform affect customers?</p> <p>For many households and small businesses, electricity represents a significant cost, so there will be considerable uncertainty about how the proposed changes to network tariffs will affect their electricity bills. People would like to understand the potential impact of network tariff reform on their electricity costs in terms of dollars and cents.</p>	<p>It is not yet possible to say whether an individual customer will pay more or less for their use of the network under a time of use demand based network tariff.</p> <p>That's partly because the current accumulation meters used for residential and small business customers don't collect the metering data needed to do the necessary calculations.</p> <p>It's also because people are likely to use electricity differently if they're being charged more for the delivery of that energy at peak times of the day than if they pay for the use of the network based on how much electricity they consume.</p> <p>To help our customers better understand the impacts of a move to a time of use demand based network tariff, between now and 2017 we will be conducting a trial of the new tariffs.</p>
<p>Will the network tariffs for home heating and hot water be abolished?</p> <p>Many Tasmanians rely on electricity to provide home heating and hot water in a way that is not seen anywhere else in Australia. The use of electricity for both of these purposes has been made possible by discounted network and retail tariffs provided by Hydro Tasmania, Aurora Energy and TasNetworks over many years. Many customers and customer advocacy groups that we've been consulting with about network tariff reform have indicated concern that the network tariffs involved will be abolished, forcing customers to switch to other, more expensive tariffs.</p>	<p>We will not be suddenly removing any existing network tariffs as part of the process of tariff reform.</p> <p>In our initial stakeholder engagement one of the options we canvassed was removing the discounted network tariffs for uncontrolled low voltage home and hot water heating for all new customers. At the same time we proposed to reduce the price of other network tariffs used by the same customers to offset the change. However, most of the feedback we received during the engagement was not supportive of this approach. As a result, we changed our strategy to instead gradually rebalance the network prices for home heating and hot water, and other light and power services, over time.</p> <p>Any changes to existing network tariffs will be made over the medium to long term, in order to allow customers time to adjust to the changes being made. We will take into account the customer impact principle when making any changes to our existing network tariffs.</p>

Customer feedback	Our response
<p>What impact will tariff reform have on vulnerable customers?</p> <p>Many of the customers and customer advocates with whom we consulted about tariff reform wanted to be sure that vulnerable customers would not be disadvantaged as a result of network tariff reform or exposed to further financial hardship.</p>	<p>We consider the impact of tariff reform on all our customers. Our strategy is to 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>Our Tariff Structure Statement has been informed by our engagement with customers and retailers. Our engagement included a roundtable discussion held in conjunction with the Electricity Networks Association to discuss how we can support vulnerable customers. The forum provided some valuable insights for us to incorporate into our forward plans.</p> <p>Our 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>A number of customers and their advocates have expressed the view that an increasing emphasis on service charges in the current tariffs, and a reduction in the consumption based component, will be of particular concern for vulnerable customers because limiting their consumption of electricity won’t have the same impact on their bill as it does today.</p>	<p>Increases in service charges will impact different customer classes, and individual customers within each customer class, differently.</p> <p>Our proposed transition timelines have been designed to smooth out the transition to our new and revised network tariffs. By transitioning customers to more cost reflective pricing over a period of time we 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>

Customer feedback	Our response
<p>How long is the transition to the new network tariffs going to take?</p> <p>As part of our customer consultation we asked our customers how long we should take to introduce changes to our network tariffs. In addition to a clear preference for a longer transitional period, our customers also considered it important that the impacts of the new tariffs on customers be closely monitored during the transition period.</p>	<p>During the next regulatory control period we will monitor the impact of the time of use demand based network tariffs on customers' electricity bills. We will do this in conjunction with the electricity retailers that offer retail tariffs that reflect the new network charges.</p> <p>In response to suggestions from our customers and their advocates, we are going to transition our existing tariffs towards full cost reflectivity over a period of up to 15 years⁶. Initially we proposed a significantly faster pace of reform, but amended our 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>Our customers are aware that residential and small business customers interstate sometimes pay different electricity prices, depending on where they are.</p> <p>Recognising that the cost of supplying customers in different areas of Tasmania with electricity isn't going to be uniform, the question was asked whether introducing cost reflective pricing would put an end to uniform network charges in Tasmania.</p>	<p>The practice of applying the same price to a service, regardless of a customer's location, is known as 'postage stamp' pricing. An alternative to postage stamp pricing is locational pricing (also known as nodal pricing), which can involve, for example, customers in regional areas paying different prices to customers in urban areas, or customers in one population centre paying different prices to those in another.</p> <p>The National Electricity Rules currently include a provision that requires us to follow any jurisdictional requirements for pricing.</p> <p>For Tasmanian customers, this specifically 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>

⁶ Note: the transition period is based on a 2014-15 commencement date.

Customer feedback	Our response
<p>Will customers be forced onto demand tariffs?</p> <p>Many customers consider that the current electricity pricing arrangements serve them well, and will want to switch to the new demand tariffs only once they're convinced that to do so will be to their advantage.</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>An issue raised during our consultation with customers was whether or not customers need to install advanced meters in order to implement time of use demand based network tariffs.</p>	<p>Network prices that take into account both the demands that individual customers place on the network and the times when they use energy require meters that record both of those parameters, in addition to the total amount of electricity consumed over the course of a billing period. For most customers, we currently record only the amount of electricity consumed between meter reads.</p> <p>Following consideration of customer and stakeholder feedback, our 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> <p>Utilising advanced metering technology which allows monthly billing to retailers, will mean we can provide our customers with timely information to help them better understand electricity usage in their homes.</p>

Customer feedback	Our response
<p>What can customers on a time of use demand based network tariff do to reduce demand and control their electricity costs?</p> <p>Our customers told us that they wanted to be able to respond to our price signals by reducing their maximum demand during peak times, but were unsure of how to go about it. They also expressed concerns about their ability to change their energy use in peak times, even if they wanted to, given that energy use at certain times of the day is in many cases unavoidable.</p>	<p>Under the current network and retail tariffs, most customers understand that they can reduce the amount of their electricity bill by reducing their consumption of electricity. But under a time of use demand based network tariff, while reducing your consumption of electricity may reduce the energy component of your bill, it may not have the desired impact on your network charges.</p> <p>We will work with customers to help them understand how they can reduce demand on the network at peak times. We are working with retailers to better develop tools to help customers better understand electricity usage in their homes. Through a number of trials we are learning and gathering information which will help us, in conjunction with retailers, 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.</p> <p>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.</p> <p>We are not saying that customers should not consume electricity during peak periods. Our 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.</p>
<p>Network tariffs need to be reflected in retail bills</p> <p>Our customers have told us they want to understand network charges and see network tariffs reflected in the electricity bill they receive from their retailer.</p>	<p>Network charges make up over half of most customers' electricity bills⁷, but the electricity bills received by most residential and small business customers don't break down the delivered cost of electricity into its various components. Our tariffs are, therefore, not visible to the vast majority of customers.</p> <p>For the new network tariffs to achieve the objective of effectively signalling network costs, the price signal must be visible to customers. We are therefore working closely with electricity retailers and the local economic regulator⁸ to support this outcome.</p>

⁷ Office of the Tasmanian Economic Regulator, Comparison of Australian Standing Offer Energy Prices, Mar-15

⁸ Office of the Economic Regulator

8 Our pricing principles

To guide the development of our Tariff Strategy, in consultation with our customers we developed a set of pricing principles against which any new or revised tariffs are assessed. Those principles are explained Table 4.

Table 4: Our pricing principles

Principle	What it means
Efficiency: Tariffs should facilitate the efficient recovery of revenue	<p>The efficiency principle recognises that tariffs should facilitate the efficient recovery of our revenue, with cost reflective tariffs for customers.</p> <p>The revenue allowance set by the Australian Energy Regulator represents a build-up of our efficient cost of building, running and maintaining the network and is, therefore, the starting point for the recovery of efficient costs. The efficiency with which we recover those costs from customers is driven by the allocation of the allowable revenue to our customers.</p>
Simplicity: Tariffs should be as simple as possible and developed in consultation with stakeholders	<p>The principle of simplicity means that all tariffs, including the new time of use demand based network tariffs for residential and small business customers, should be designed in a way that customers can readily understand. If a charging mechanism is overly complex it will be difficult for customers to understand and respond to the price signals it's supposed to send, which may render the tariff ineffective.</p>
Efficient price signals: Tariffs should provide 'price signals' to customers, recognising that the cost of using the network varies at different times	<p>Recognising that the cost of using the network varies at different times of the day, network tariffs should clearly communicate to customers how their use of electricity drives and/or contributes to network costs.</p> <p>We will set prices that are cost reflective and empower our customers to make informed electricity usage decisions. To achieve this, we will move towards setting network tariffs to recover our efficient costs, introduce time of use demand based network tariffs and recover residual revenue in a way that least distorts the pricing signal.</p> <p>We will also develop tariffs in a manner which provides customers effective price and investment signals with respect to new and emerging technologies. We want to have a tariff suite which helps our customers make informed investment decisions.</p>
Clearly explained: We should calculate our tariffs according to a well-defined and clearly explained methodology	<p>This principle requires that we provide sufficient information about our tariff methodology in a format that is easy for our customers to understand.</p> <p>We will work with our customers and stakeholders to ensure that we are providing clear explanations in respect to how we develop our tariffs as well as how they are charged.</p>

Principle	What it means
Customer impact: We should consider the impacts on customers of any tariff change, and introduce change over a period of time to manage the impacts on particular customers	This principle means we will take into consideration the impacts of our Tariff Strategy on our customers. In developing our strategy we will ensure that the transition towards more cost reflective tariffs occurs gradually, over time, in order to avoid any potential for sudden adverse price impacts on customers. Our focus is to deliver predictable and sustainable prices over the longer term.
Compliant: Our tariffs must comply with the regulatory rules, both nationally and locally	This principle means that we will ensure that we meet all our national and jurisdictional regulatory obligations when developing and setting our tariffs. It will be necessary for us to ensure that the methodology for calculating our tariffs is soundly based and consistent with the requirements of the Rules, in accordance with the principles of compliance and a clearly explained methodology.

There are trade offs between some of the guiding principles, such as simplicity versus cost reflectivity and cost reflectivity versus customer impact. But taking into consideration the guiding principles and customer feedback, we believe our plan to move customers towards demand, rather than consumption based pricing, represents the best response to the changing electricity market and delivers the best overall outcomes for customers.

9 Our Tariff Strategy

In line with the provisions of the National Electricity Rules, we are reforming our Tariff Strategy to make greater use of demand charges in future network tariffs. We are also transitioning our existing network tariffs to reflect total efficient costs, thereby removing cross-subsidies between existing network tariffs and between classes of customer. Our overarching Tariff Strategy is to move towards more cost reflective pricing and tariff structures that enable customers to:

- recognise and pay for the value the network provides to them; and
- make more informed decisions regarding their electricity usage, as well as investments in things like electricity generation, storage or control technology and electric vehicles.

The following table summarises the key tariff reforms we are implementing.

Table 5: Our network tariff reforms

Tariff	Reform	Rationale
Existing network tariffs	Transitioning towards recovery of our total efficient costs from each customer class	Over time the cost of serving each class of customer and the revenue we recover from each class of customer through network tariffs will become more closely aligned, which is fairer for all our customers. We have commenced this transition and will continue to transition over the forthcoming and subsequent regulatory control periods.
	Changing the relative contribution of service charges and variable network tariff components to the recovery of our costs	<p>The majority of our costs are fixed. Our Tariff Strategy recognises this and involves gradually increasing the service charges in our network tariffs, while decreasing the variable component. This better reflects the unavoidable nature of much of our network costs, and also supports the move to more efficient, cost reflective price signals to customers. The increased service charge also recognises the value to customers of a network connection, as a source of energy and a way to sell excess generation (such as solar generation).</p> <p>We have already begun increasing the service charge components of our network tariffs and will continue this process in line with our focus on delivering predictable and sustainable network prices for all our customers.</p>
	Appropriate realignment of network tariff prices	<p>For historic reasons there are currently a number of discounted network tariffs within our suite of network tariffs that send poor signals about network costs. Over time we will realign these network tariffs with other similar network tariffs to reduce the level of cross-subsidies between tariffs.</p> <p>We will continue to monitor and adjust our network tariffs in response to customer usage and market changes. This monitoring and refinement process will ensure that our network charges are, and continue to be, cost reflective and fair for all our customers.</p>

Tariff	Reform	Rationale
New demand network tariffs	Introducing more demand based network tariffs	<p>Technological and customer driven changes in the electricity market, such as the widespread uptake of solar panels, mean that the current flat, consumption based network tariffs used to recover the cost of the network are no longer fit for purpose.</p> <p>Our view is that time of use, demand based network tariffs are the best network tariff structure for the future. They better reflect the costs of providing network services and the drivers of those costs. We also think these tariffs send price signals to customers that may change their use of electricity in ways that defer or negate the need for the provision of additional network capacity.</p> <p>Through the transition we will work to build customer understanding about demand based network tariffs.</p>

9.1 Network tariff transition plan

Our network tariff design has involved a review of existing network tariffs and consideration of new options. The changes we have proposed will require transitional arrangements to ensure that we provide for predictable and sustainable pricing for our customers.

During the transition phase, we will maintain our current tariff structures whilst adjusting pricing to be more cost reflective. We will also be rebalancing the service and variable charging parameters of most of our existing network tariffs, by increasing the emphasis on service charges and reducing the extent to which consumption based charges are used to recover the cost of providing network capacity.

We will introduce new time of use demand based network tariffs for residential and low voltage business customers which, initially, will be available to customers as a choice (i.e. on an opt-in basis) through their retailer.

For most customers the transition phase will involve small changes while we continue to pursue our strategy of sustainable and predictable pricing.

Our aim is to incentivise a customer led shift to time of use demand based network tariffs, with our customers understanding and recognising the value proposition associated with these network tariffs. Our view is that in the long term we will see all residential and business customers transition to time of use demand based network tariffs.

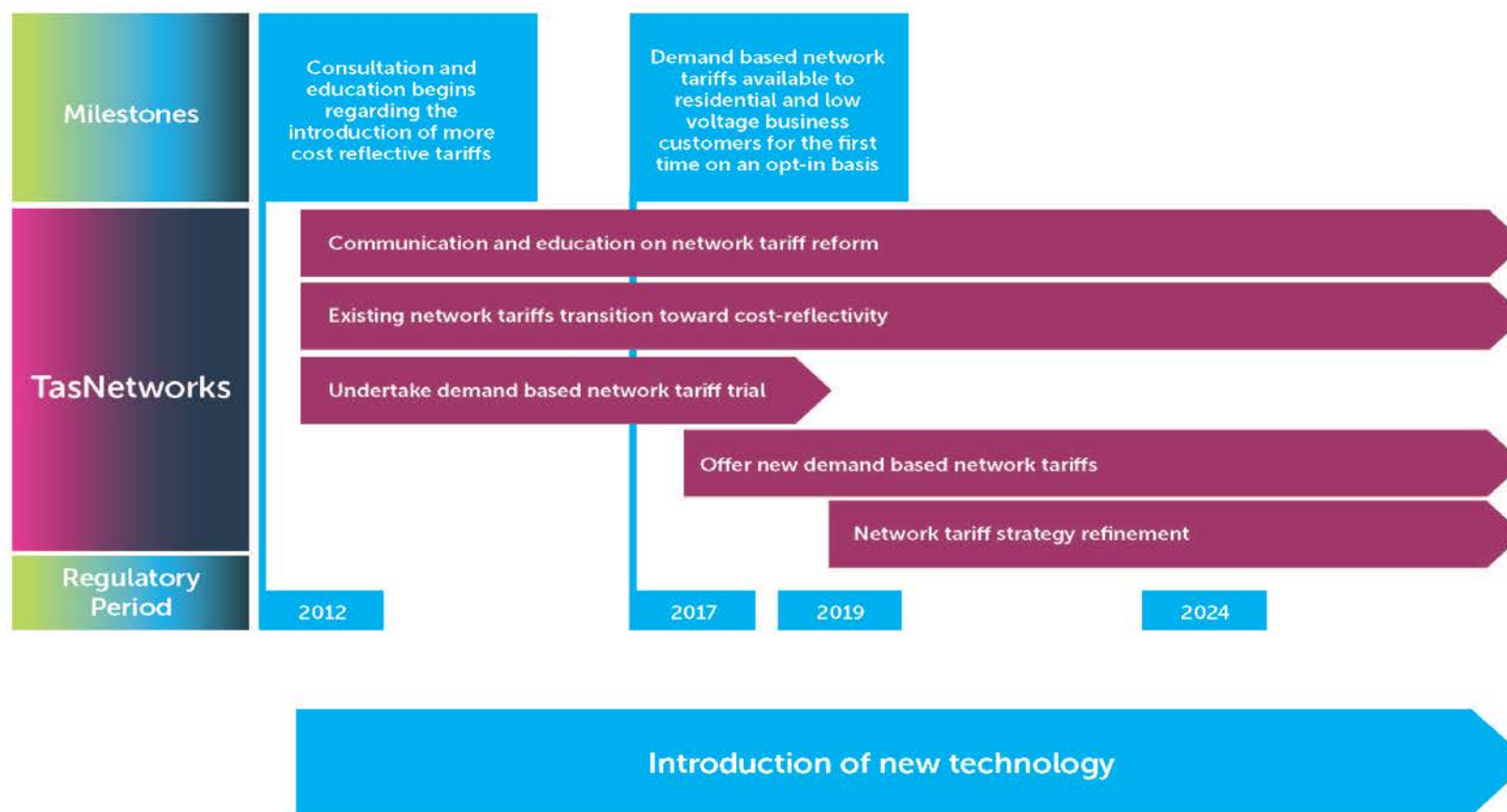
The new time of use demand based network tariffs will be made up of a service charge and two charges that reflect customers' maximum demand for energy over a billing period:

1. one for a customer's maximum demand recorded during designated peak periods; and
2. the other for their maximum demand recorded in off-peak periods.

Figure 11 below provides an outline of our transition plan for network tariff reform.

Figure 11: Our network tariff transition timeline

TasNetworks Tariff Structure Statement



The following figure provides a summary of TasNetworks' transition towards cost reflective network tariffs in the near term, from a customer perspective.

Figure 12: Initial phases of network tariff reform



<p>consumed over an extended period</p> <ul style="list-style-type: none"> - Emphasis on variable charges understates the value for customers in being connected to the network - The emphasis on consumption encourages customers to reduce their energy use to save money, even at off-peak times, which doesn't necessarily reduce the cost of providing the network - Customers are responding to consumption based pricing by installing new technology to reduce consumption, which doesn't necessarily reduce demand or the cost of providing the network 	<ul style="list-style-type: none"> - No incentive to shift demand during peak times of the day to non-peak periods - Does nothing to support new products and services from electricity retailers and others 	<ul style="list-style-type: none"> + Demand management incentives offered to customers to align with localised network constraints
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10 Designing network tariffs

When designing network tariffs, it is important to define the network tariff components that can be considered.

We have worked closely with other network businesses around Australia to ensure there is common understanding of the terms and consistency in tariff design definitions. This consistency will support meaningful engagement with various stakeholders and help with customer understanding.

In designing individual network tariffs, in general, four tariff components can be weighted, measured and combined in different ways to provide a wide range of possible network tariff structures.

Different parameters applied to the components are used to create various network tariff elements which are combined to form a complete network tariff. These are summarised in Table 6.

Table 6: Network Tariff Components

Tariff Component	Description
Service Charge	<p>\$/time period (cents per day charge)</p> <p>Does not change with usage, demand or capacity.</p>
Consumption Charge (usage)	<p>\$/time period (actual usage, for example kWh)</p> <p>Based on consumption during the billing period.</p> <p>Consumption charges may vary with time of day or season, charges are based on the total level of usage within the defined billing period.</p>
Demand Charge	<p>\$/kW or \$/kVA (actual)</p> <p>Based on actual demand within a billing period.</p> <p>Demand charges may vary with time of day or season, charge based on demand within the defined billing period.</p>
Capacity Charge	<p>\$/kW or \$/kVA (agreed)</p> <p>Based on agreed maximum demand for a defined billing period, not actual demand. A customer pays for capacity made available, rather than capacity necessarily used.</p> <p>Capacity charges may vary with time of day or season, charge based on capacity within the defined billing period.</p>

10.1 New network tariff options considered and analysed

We have worked with our stakeholders to assess the most appropriate network tariff structures. This assessment provided initial guidance to assist in the identification and specification of preferred network tariff options. An outline of the options considered is provided in Section 18 of this paper. Our assessment focussed on alignment to our Pricing Principles, which are set out in Section **Error! Reference source not found.** of this paper as well as the Pricing Objectives outlined in the Rules.

Based on our assessments, we identified time of use, demand based network tariffs as our preferred network tariff structure; this network tariff structure effectively signals future network costs (signalling and recovery of our long run marginal costs). A demand based network charge provides an appropriate balance between the long term nature of investment that should be signalled to customers and a network tariff structure that is simple enough for our customers to understand.

10.2 Existing network tariff review

We have reviewed our existing network tariffs with the view of making refinements to achieve greater cost reflectivity. Over time we want to provide better price signals for our customers, and ensure the way we charge is fairer for all our customers. Our existing network tariff review found that:

- Our current network tariffs' emphasis on energy consumption encourages customers to reduce energy consumption to save money, even at off-peak times. However, this may not result in any reduction in our network costs. These costs must still be recovered, which means some customers are subsidising others.
- Large numbers of customers are responding to the 'incorrect' and overstated consumption based price signal by installing new technology to reduce consumption, which does not necessarily reduce demand and network costs.
- There are opportunities to improve network prices signals to enable customers to make better consumption and investment decisions (which may include properly understanding the true costs and benefits of electric vehicles, solar panels, and battery storage and energy efficiency measures).
- Many network tariffs do not properly reflect the costs of providing the network service. For example, the uncontrolled low voltage heating network tariff for water heating and/or residential space heating is heavily cross subsidised by other customers. The network tariff allows consumption at off-peak rates at all times, including genuinely peak periods.
- Our network tariffs are not currently recovering the efficient costs of service provision for all network tariff classes, this means we are not recovering our total efficient costs from each network tariff class.
- Better consumption and investment decisions produce better outcomes for everybody, and help to reduce our costs and our customers' costs.

Our review found that our existing network tariffs are not meeting our guiding principles, and there is scope for improvement to provide for greater efficiency in cost recovery and pricing signals. Taking into consideration the guiding principles, customer feedback and our changing operational and regulatory environment, we proposed to customers to move towards demand based pricing rather than consumption based pricing.

11 New and revised network tariffs for the 2017-2019 regulatory period

Consistent with our longer term transition to cost reflective tariffs, our focus in the 2017-2019 regulatory period is the introduction of new time of use demand based network tariffs and beginning the transition of our existing suite of network tariffs towards the recovery of the total efficient costs associated with each network tariff class.

11.1 New network tariffs

From 1 July 2017, we will introduce new time of use demand based network tariffs for residential and low voltage business customers; these network tariffs will be available on an opt-in basis through electricity retailers. In this way we are effectively offering our customers greater choice in respect to network tariffs. Table 7 provides an outline of the new demand based network tariffs to be offered to our customers.

Table 7: New demand based network tariffs

Network tariff	Description
Residential time of use demand tariff (TAS87)	<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 (TAS88)	<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 tariff.</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 (TAS89)	<p>This network tariff is for installations taking low voltage multi phase supply at premises that are not 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 tariff.</p> <p>An electronic meter capable of recording interval data is the minimum required for installations on this network tariff.</p>

Like our existing network tariffs, the new time of use demand based network tariffs will include a service charge and a variable component. However, instead of a variable component which is based on the amount of energy a customer uses during the billing period, the new network tariffs will use a customer's maximum demand recorded during the billing period as the basis for the variable charges billed to the customer's retailer.

Two demand based charges will apply under each network tariff and will take into account the time of day at which the customer's maximum demand is recorded:

1. one demand based charge will apply to the maximum demand recorded for a customer during designated morning and afternoon/evening peak periods, and
2. another demand based charge will apply to the maximum demand recorded for that customer outside of those peak periods (i.e. off-peak periods).

Demand will be metered in half hourly intervals, with each half hourly demand measurement being an average of a customer's demand across that half hour. The highest half hourly reading recorded during the billing period will then be the maximum demand figure used for that customer as the basis for their network usage charges.

Monthly billing to retailers for the new time of use demand based network tariffs will be introduced from 1 July 2017. However, the majority of our customers on existing network tariffs are expected to continue to be billed on a quarterly billing cycle in the short to medium term.

Figure 13 shows the separate components (or charges) which will make up the new time of use demand based network tariffs.

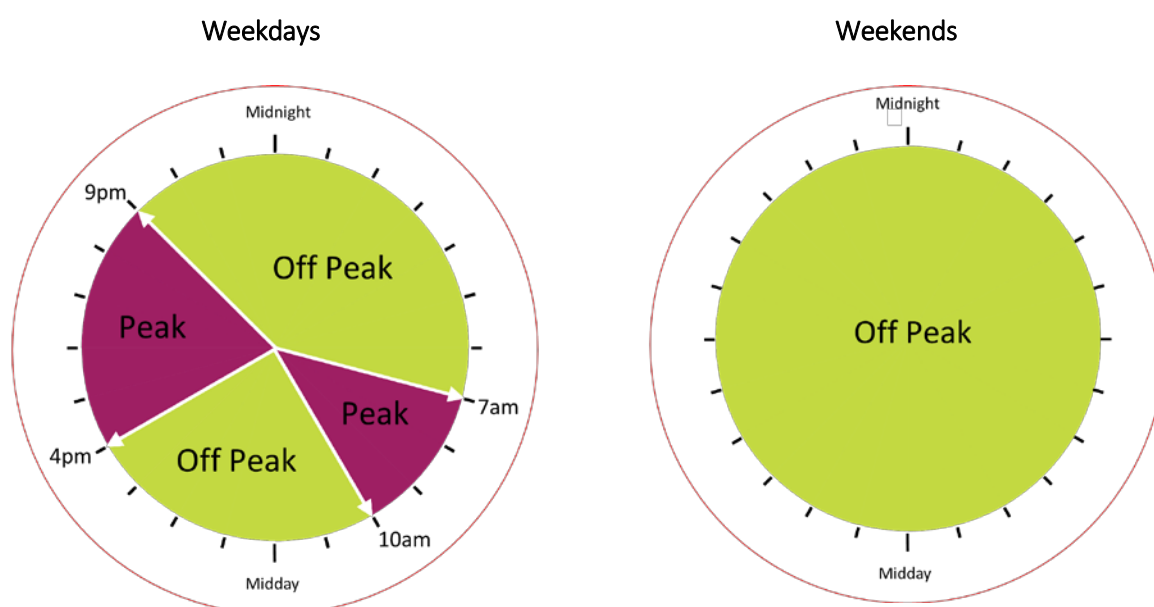
Figure 13: Components of the new time of use demand based network tariffs



In the interests of simplicity and in recognition of the reduced demands that customers place on the network at weekends, the peak time of use periods chosen for the new network tariffs will only apply on weekdays. This means that 16 hours of every weekday and all weekends will be treated as off-peak.

Figure 14 show the peak and off-peak time of use periods that will be applied as part of the demand based network tariffs.

Figure 14: Demand based network tariffs time of use period



11.2 Choosing the time of use periods

Having decided to offer demand based time of use network tariffs to residential and low voltage business customers, we consulted with our customers and stakeholders on the time of use periods that should apply to the new network demand based tariffs. This involved considering a variety of alternatives, which were evaluated in the context of the Tasmanian market and the pricing principles developed for evaluating prospective new network tariffs.

The following sections provide an overview of some of the key choices which were made when determining the time of use periods which will apply to our new demand based network tariffs. As already noted, we are continuing to engage with our Pricing Reform Working Group on these issues as we further develop our thinking.

11.2.1 Maximum demand

We understand the importance of ensuring the peak periods identified in our tariff structures align with our network peaks and provide an indication of network constraints. This alignment is a key component of ensuring cost reflectivity and providing our customers with the correct pricing signals. The first step in determining the time of use periods to be applied to the new demand based network tariffs was to identify when peaks in demand typically occur at a network level.

The choice of peak and off-peak periods for the time of use component of our new demand based network tariffs was guided by our knowledge about network constraints and when the network is most heavily loaded. While the load profile in local areas of the network may differ slightly due to the diversity of our customers, we elected to use the load profile of the system as a whole to identify the peak and off-peak periods to be used for the new demand network tariffs. This aligns with our jurisdictional obligation to ensure the same network tariffs for small customers regardless of a customer's location.

11.2.2 Multiple time of use types

Some of our existing consumption based network tariffs offer three period time of use tariffs that divide the day into peak, off-peak and shoulder periods. However, to ensure that our new demand based network tariffs are readily understood by our residential and low voltage business customers, and in response to feedback from our working group, we decided to distinguish only between peak and off-peak periods. We consider that the greater cost reflectivity offered by using three time of use periods does not outweigh the added complexity.

Further, in the interests of simplicity and in recognition of the reduced demands that customers place on the network at weekends, the peak time of use periods chosen for the new network tariffs will only apply on weekdays. This means that weekends will be treated as being entirely off-peak.

11.2.3 Business versus residential demand

Even though the daily load profiles of residential customers and low voltage businesses are not exactly the same, we have decided to use the same peak and off-peak times for the demand based network tariffs offered to both residential and low voltage business customers. While many businesses tend to use most of their energy during the day, using different time of use periods for residential customers and businesses would have sent mixed pricing signals when considering system wide peak demand and future network constraints.

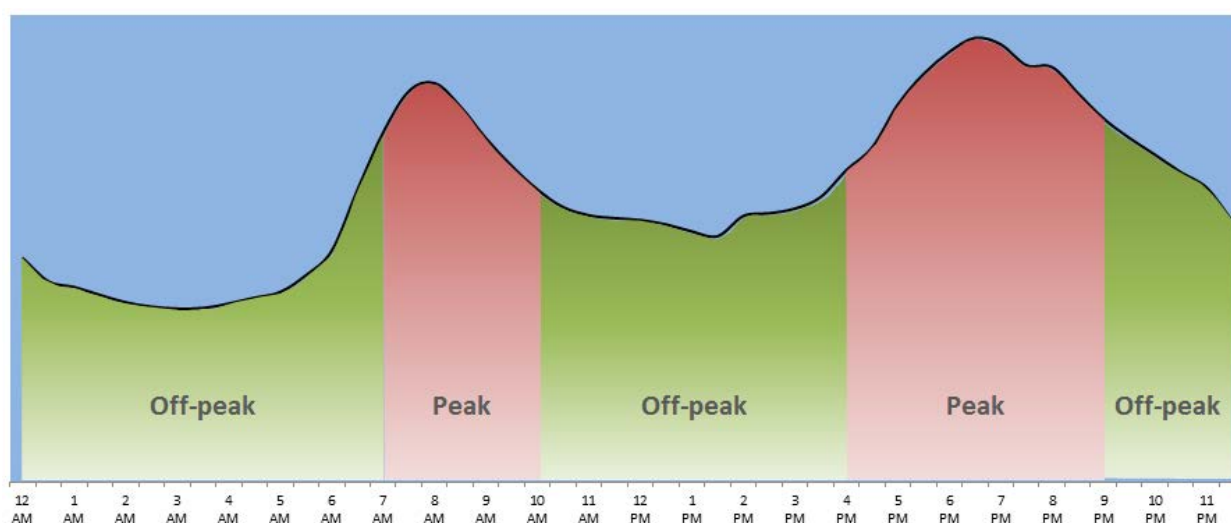
11.2.4 Peak period duration

Peak periods need to be long enough to encourage the shifting of demand without creating new peaks immediately on either side of the existing peaks in the network's load. Small shifts of demand have the potential to render the designated peak period(s) irrelevant and require an adjustment to the time of use periods.

Conversely, our customers have expressed concerns that a wide peak period may limit their ability to shift their demand away from system peaks and into off-peak periods.

The peak time of use periods chosen for the new demand based network tariffs strike a balance between these competing tensions. Figure 15 below shows the selected time of use periods as well as our network peaks.

Figure 15: Time of Use periods and peak demand



Over time, for our existing commercial network tariffs with a time of use element, we will also consider aligning the time of use periods. This will support efficient and consistent price signals for our customers and retailers.

11.2.5 Network tariffs for residential and low voltage business customers

In the coming two year regulatory period we will revise our existing suite of network tariffs for customers taking supply at low voltages, to make them more cost reflective. This will involve two separate but complementary reforms:

1. realigning the relative prices of a number of existing tariffs to eliminate some long-standing cross-subsidies between different tariffs and customer groups; and
2. rebalancing the service and variable charging parameters of many of our existing network tariffs, by increasing the emphasis on service charges and reducing our reliance on variable, consumption based charges to recover the cost of providing network capacity.

In response to representations from our customers and their advocates, we are going to transition our existing tariffs towards full cost reflectivity over a period of up to 15 years⁹.

⁹ Note: the transition period is based on a 2014-15 commencement date.

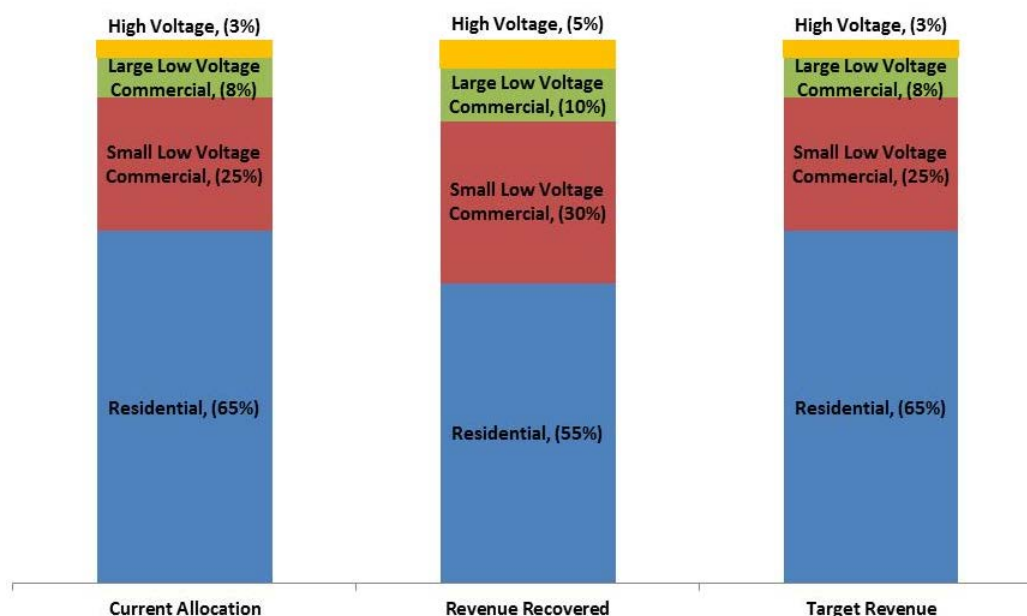
For most customers, the transition phase is expected to involve only incremental changes between years, in terms of the network charges applying to their connection. To that end, we have analysed the network charge impact on our indicative network tariffs (provided in the Indicative Pricing Schedule¹⁰). Our analysis indicates that most customers should face lower network charges in the next regulatory control period, when compared to current charging levels. Many customers, particularly business customers, will experience significant reductions in network charges. Where customers are forecast to experience an increase in network charges, it is generally small.

11.2.6 Network tariffs for high voltage business customers and specialist commercial applications

We will not be changing the fundamental design of the network tariffs applying to customers who are supplied at high voltages. The network tariffs in question are already considered to be sufficiently cost reflective, in that they feature various combinations of elements such as time of use charges, demand based charges and – in some cases – seasonal variation.

We will adjust the amount of revenue we seek to recover from some network tariff classes, as part of the process of removing cross-subsidies between different classes of customers. The revenue we recover from each class of customer through network tariffs will be adjusted so that, over time, it comes to more closely reflect the underlying costs of supplying each customer class. We will not recover any additional revenue as a result of changes to its network tariffs, but the proportion of our network costs which is recovered from particular network tariff classes will change over time, the figure below provides a summary of this change.

Figure 16: Revenue recovery by customer grouping



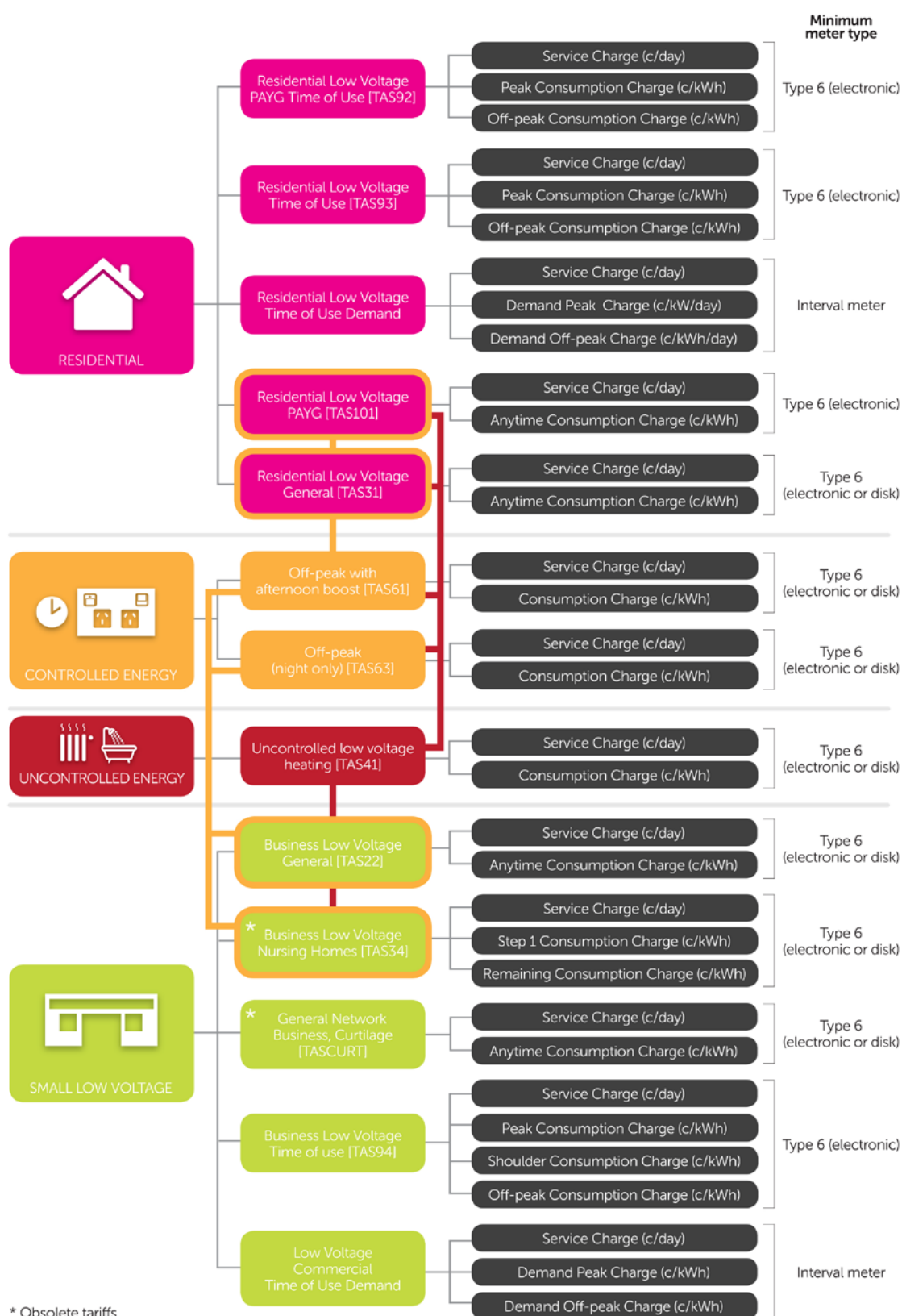
¹⁰ Refer Appendix B of our Tariff Structure Statement

12 Network tariff classes and charging parameters for standard control services

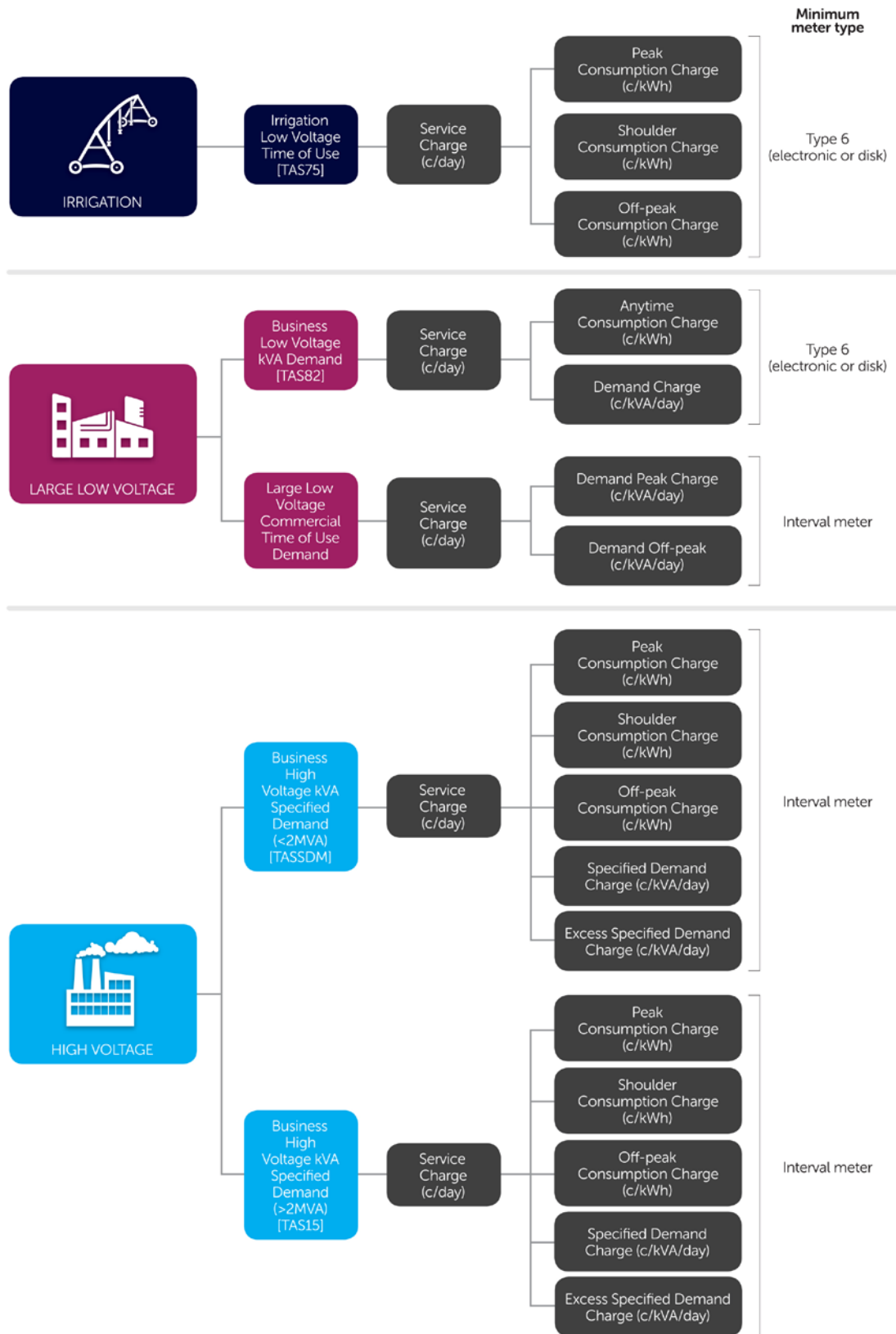
Standard control services are our distribution services that are central to electricity supply and therefore relied on by customers. These services, which comprise the core distribution component of an electricity bill, include construction, maintenance and repair of the network, customer connection and augmenting the network to support growth and stable operation. The annual revenue allowance which applies to standard control services is recovered through general network charges (network tariffs).

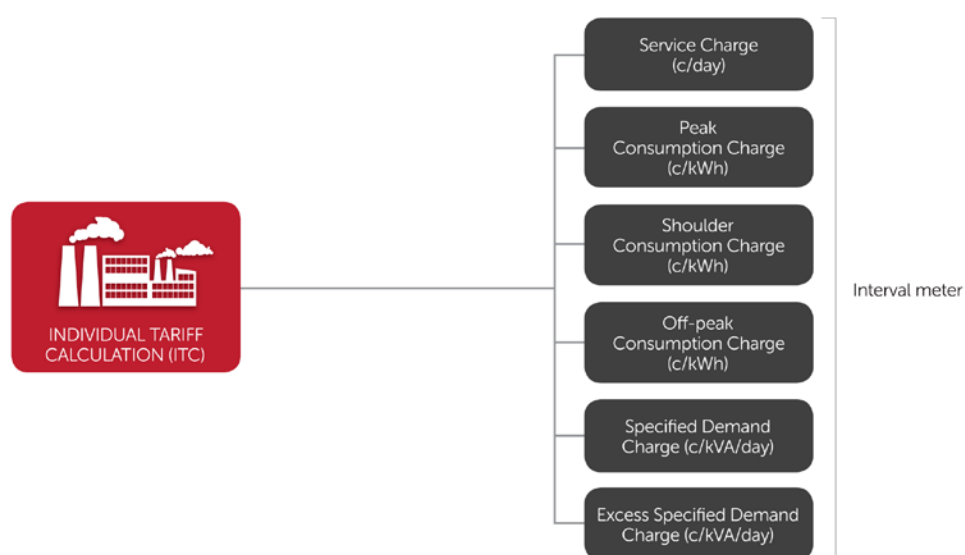
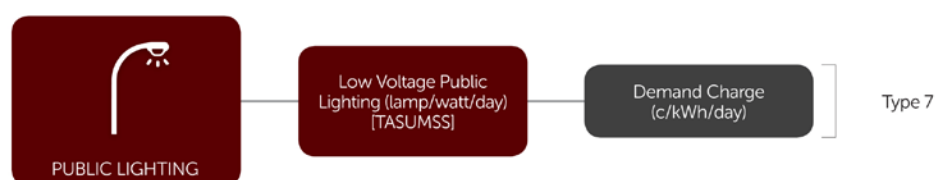
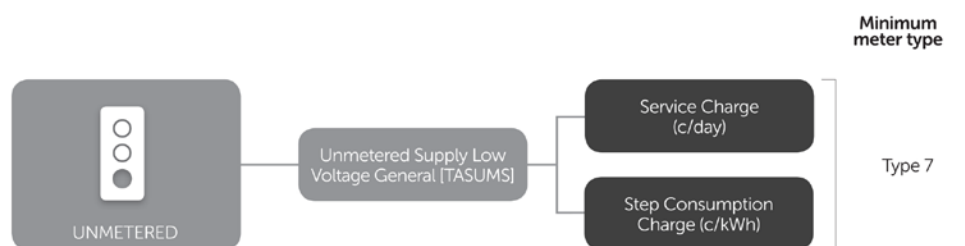
Figure 17 provides a summary of our all our network tariffs classes (for standard control services), as well as the associated network tariffs and tariff components. Further detail in relation to all our network tariff classes and network tariffs as well as assignment processes are outlined in the Schedules of this paper (Sections 19 and 21).

Figure 17: Tariff classes and charging parameters



* Obsolete tariffs





Note: Specific conditions apply. Refer to TasNetworks' Network Tariff Application and Price Guide.

12.1 Setting network tariffs

Our overall aim is to structure each element of our network tariffs so that we provide our customers with appropriate signals about how their usage impacts our costs and so that our overall revenues recover our forecast efficient costs. In this context:

- Our service charges for each network tariff have been designed to recover the costs that arise from the connection and management of each customer. This sends a signal to customers about the value of the network connection, and sets a constant and foreseeable price that assists customers in making a decision to connect and remain connected to the network. The service charge can also be used to recover part of the shared network costs where those costs are not recovered entirely through demand or volume charges.
- Our volume charges are designed to recover the costs of the shared network on a basis which reflects how our customers use the distribution network. However, over time we will be reducing our reliance on consumption based network charges and moving towards demand based network charges. Throughout this transition we will continue to consult with our customers and will also provide further detail as part of the annual Pricing Proposal process.
- Our demand and specified demand based network charges are designed to recover the costs of the shared network on a basis which reflects how our customers use the distribution network. We are in process transitioning so that our demand based network charges are fully reflective of our underpinning long run marginal cost estimates.

Please refer to our Methodology Schedule (Section 20) for further information on how we set our network tariffs.

12.2 Indicative prices

Please refer to the Indicative Pricing Schedule, which accompanies our Tariff Structure Statement¹¹.

¹¹ Refer Appendix B of our Tariff Structure Statement

13 Tariff classes and charging parameters for alternative control services

Alternative control services are where the costs – and the associated benefits from the service – can be directly attributed to a particular customer (for example, where a customer requests a service). For these services, the Australian Energy Regulator sets caps on the prices that can be charged. TasNetworks' alternative control services include metering services for small customers¹², ancillary services (quoted services and fee based services), and public lighting (excluding new public lighting technology services). Further information regarding our Alternative Control Service offerings is provided in our *Alternative Control Service Descriptions Paper*, this is appended as an attachment to our Regulatory Proposal.

13.1 Tariff classes

Our tariff classes for alternative control services reflect the nature of the services provided, with similar services being grouped together. This approach is economically efficient, in that the tariffs reflect the cost of the services and the characteristics of the customer using the service do not impact the cost of the service. The table below defines each of our tariff classes for alternative control services.

Table 8: Tariff classes for alternative control services

Tariff Class	Definition
Metering	<p>Metering services are those services provided with respect to the provision, installation and maintenance of standard meters and associated services provided to retail customers.</p> <p>This includes the metering services provided small customers (using type 6 and type 7 meters) in our role as metering provider and meter data provider.</p> <p>Competitive metering services are not alternative control services.</p>
Public lighting	<p>Public lighting services are those services for:</p> <ul style="list-style-type: none">• the provision, maintenance and replacement of our public lighting assets;• the maintenance of public lighting assets owned by customers (contract lighting); and• the provision, maintenance and replacement of our public lighting poles. <p>This does not include any new public lighting technology service, which is classified as a negotiated service.</p>

¹² Type 6 and 7 meters

Tariff Class	Definition
Ancillary Services - Fee based services	Fee based services are provided for the benefit of a single customer rather than uniformly supplied to all customers. These services are provided at the request of a third party and are typically initiated by way of a service request received from a retailer.
Ancillary Services - Quoted services	Quoted (non-standard) services are those services where the nature and scope of the service is specific to individual customer's needs, and varies from customer to customer. Consequently, the cost of providing the services cannot be estimated without first knowing the customer's specific requirements. It is not possible, therefore, to set a generic total fixed fee in advance for these services. Requests for quoted services may be received from a customer or from a retailer on behalf of a customer.

Further information on the tariffs and charges for each of these tariff classes is provided in the following sections.

13.2 Metering, public lighting and ancillary services

Our approach to setting the tariffs for the 2017-19 regulatory period is consistent across metering, public lighting and ancillary services - fee based services.

13.2.1 Metering services overview

Metering services are provided to all customers with Type 6 metering installations and form a component of the charges we levy. The charges for metering service are split between a capital charge which covers the cost of the meter and a non-capital charge, which covers the cost of reading the meter and collecting the metering data.

The Australian Energy Regulator has determined that the provision of metering services will be classified in accordance with the type of meter and the functionality that it provides, and has assigned these meters into differing meter classes.

The metering tariffs we are proposing to offer our customers and the indicative charges are set out in the Indicative Pricing Schedule¹³.

¹³ Refer Appendix B of our Tariff Structure Statement

13.2.2 Public lighting services overview

Only the alternative control service component of public lighting tariffs is discussed in this section. This is because the final tariff for the provision of public lighting services comprises a charge for the provision of a standard control service and an alternative control service. The conveyance of electricity to public lights requires the use of the distribution network, which is a standard control service, while the provision, construction and maintenance of the lighting asset is an alternative control service.

The term “Public lighting services” applies to:

- the provision, maintenance and replacement of our public lighting assets;
- the maintenance of public lighting assets owned by customers (contract lighting); and
- the provision, maintenance and replacement of our public lighting poles.

Public lighting services exclude:

- the alteration and relocation of public lighting assets, which are provided on an ancillary service basis (quoted service);
- the installation of contract lights, which is undertaken as an ancillary service (quoted service) and is, therefore, categorised as an ancillary service (quoted service); and
- the provision of new public lighting technologies, which will be classified as a negotiated distribution service.

The provision of public lighting services will be categorised according to the type of light that is provided and whether that light is owned by us.

Those lights that are owned by us are referred to as public lights, while those lights that are owned by the customer, are referred to as contract lights.

The public lighting services we are proposing to offer our customers and indicative charges are set out in the Indicative Pricing Schedule¹⁴.

13.2.3 Ancillary Services – Fee based services Overview

Fee based services are those services we provide where the service is, in general, provided for the benefit of a single customer rather than uniformly supplied to customers. These services are provided upon request and are typically initiated by way of a service request received from a retailer.

Examples of the services we provide as Fee based services include, but are not limited to:

- energisation;

¹⁴ Refer Appendix B of our Tariff Structure Statement

- de-energisation;
- re-energisation;
- meter alteration;
- meter testing;
- basic connections (from 1 July 2017);
- supply abolishment – removal of meters and service connection;
- renewable energy connection; and
- other miscellaneous services.

These services are largely homogenous in nature, meaning that a fixed fee can be set in advance with reasonable certainty. That is, the cost inputs involved in providing these services do not involve significant variations between customers.

The fee based services we are proposing to offer our customers and indicative charges are set out in the Indicative Pricing Schedule¹⁵.

13.2.4 Tariff development process

Metering, public lighting and ancillary services' price caps are calculated for each regulatory year of the regulatory period using the price control mechanism formula approved by the Australian Energy Regulator for our 2017-19 distribution determination. The formula which we are proposing to the Australian Energy Regulator for approval is as follows:

$$\bar{p}_i^t = \bar{p}_i^{t-1} \times (1 + CPI_t) \times (1 - X_i^t)$$

Table 9 provides details of the price cap calculation that applies in the preparation of the tariffs.

Table 9: Price cap calculation methodology

Component	Comment
\bar{p}_i^t	The cap on the price of service i in year t
p_i^t	The price of service i in year t. The initial value is to be decided in the determination

¹⁵ Refer Appendix B of our Tariff Structure Statement

Component	Comment
CPI_t	The percentage increase in the consumer price index. To be decided in the determination.
X_i^t	The X-factor for service i in year t.

This means prices move from year to year by indexing the previous year's prices with reference to CPI.

13.2.5 Indicative prices

Indicative prices for the 2017-19 regulatory period have been calculated by applying the price cap formula (see above) to each year. Indicative prices for metering, public lighting and fee based services' tariffs for 2017-18 and 2018-19 are set out in the Indicative Pricing Schedule of our our Tariff Structure Statement¹⁶.

Key changes from prior years include:

- Disaggregation of metering charges between a capital charge and a non-capital charge;
- Inclusion of charges for basic connection services, which were previously classified as standard control services prior to 1 July 2017. Our treatment reflects that these connection services are provided directly to a particular customer. Greater cost-reflectivity is achieved by charging the relevant customer directly; and
- Inclusion of a margin in the alternative control - ancillary services tariffs. We utilise both internal and external resources to deliver alternative control - ancillary services. However, we are required to provide these services to our customers on a 'fixed fee' basis, while the regulatory arrangements does not allow unexpected cost increases (incurred from service providers) to be passed through to customers. In a competitive market, the provision of fixed fee services attracts a margin to reflect the value customers place on price certainty, as well as the financial risks borne by the service provider. Outcomes stemming from a regulatory framework should resemble that of competitive market outcomes. For these reasons we have included a margin which reflects what expected in a competitive market.

13.2.6 Tariff structures and parameters

The following table details the tariff structures for metering services, public lighting and ancillary services - fee based services.

¹⁶ Refer Appendix B of our Tariff Structure Statement

Table 10: Tariff structures for alternative control services

Service	Recovery
Metering services	Recovered through a fixed daily charge, which reflects the nature of the costs which are fixed for each customer (that is, the customer has little ability to take action to mitigate the cost).
Public lighting	Recovered through a fixed daily charge, reflecting the fixed nature of the costs of providing, replacing and maintaining these assets.
Ancillary services – fee based services	Recovered through a fixed charge, charged on the basis of service provision. This is cost reflective as the costs of these type of jobs can be easily assigned to the customer for which they are being provided, and the cost per job is reasonably homogenous.

13.3 Ancillary Services - Quoted services

Requests for quoted (non-standard) services may be received from a customer or retailer on behalf of a customer. These services cannot be costed in advance with a reasonable degree of certainty.

We provide a range of non-standard services on a quoted basis including, but not limited to:

- removal or relocation of our assets at a customer's request;
- services that are provided at a higher standard than the standard service, due to a customer's request for us to do so;
- provision of public lighting schemes;
- provision of overhead and underground subdivisions for developers;
- relocation of assets at the request of a third party; and
- services that are provided through a non-standard process at a customer's request (for example, where more frequent meter reading is required).

13.3.1 Tariff development process

The price caps for the provision of quoted services are calculated in accordance with the formula given by the Australian Energy Regulator in its distribution determination and reflect the way that quoted services are costed:

$$P = \sum (Units \times LR_i) + Materials + Contractors + Other Costs + Overheads$$

Where:

i is the type of labour

$Units_i$ is the number of hours for each category of labour

LR_i is the hourly rate approved by the Australian Energy Regulator for that labour category.

We also calculate price caps for the labour rates within quoted services in accordance with the formula given by the Australian Energy Regulator in its distribution determination:

$$LR_i = LR_t \times \left(\frac{CPI_t}{CPI_{2016}} \right)$$

Table 11 provides details of the labour rate cap calculation that we have utilised in the preparation of its quoted services tariffs.

Table 11: Price cap on labour rate

Component	Comment
LR_t	The price for each quoted service labour rate as given in the Australian Energy Regulator's distribution determination.
CPI_t	The index number for the Australian Bureau of Statistics Consumer Price Index (CPI) for All Groups, Weighted Average of Eight Capital Cities for the most recent March quarter.
CPI_{2016}	The index number for the Australian Bureau of Statistics Consumer Price Index (CPI) for All Groups, Weighted Average of Eight Capital Cities for the March quarter 2016.

This means prices move from year to year by indexing the previous year's component prices with reference to CPI.

13.3.2 Indicative prices

The labour rates used in determining quoted services are set out in the Indicative Pricing Schedule¹⁷. The labour rates and the formula application of quoted services are the only element that is regulated, other costs are passed through to customers at cost, and a margin is added to the total cost of the service delivery.

This approach has been taken as we are unable to provide a full range of indicative prices for quoted services, as by their nature these services are dependent on a customer's specific requirements and cost inputs may vary significantly. It is not possible, therefore, to set a generic total fixed fee in advance for these services.

¹⁷ Refer Appendix B of our Tariff Structure Statement

13.3.3 Tariff structures and parameters

The price caps for the provision of quoted services are built up on the basis of standard cost inputs into the particular service, that is labour time and rates, materials, contractors, and other costs, with overheads apportioned to the work. This cost build up reflects the steps required to set prices for the diverse range of activities provided under quoted services.

14 Customer Impacts

This section discusses the expected impact on customers resulting from changing existing tariff structures and introducing the new time of use demand based tariffs. The AER's final decision is likely to determine a different revenue requirement than the amount assumed in the analysis presented here, which reflects the revenue requirements in our revised Regulatory Proposal. Nevertheless, we do not expect the AER's final decision to materially affect the overall assessment regarding customer impacts.

The table below presents a summary of the impact on the average annual network charges to customers on existing network tariffs between 2015-16 and 2018-19.

Table 12: Summary of the impact on average customer annual 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

14.1 Impact of tariff structure changes to existing tariffs

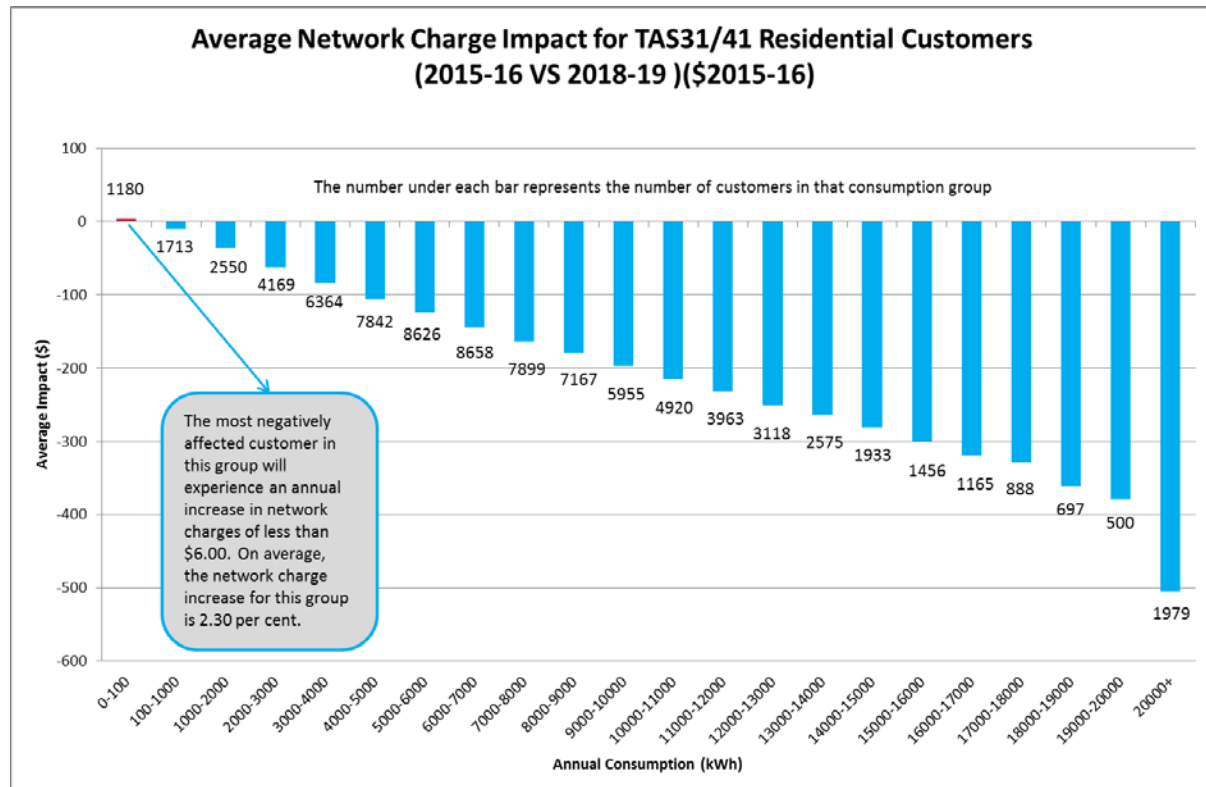
TasNetworks' October 2015 consultation paper: *Improving the way we price our network services* presented the expected impact on customers of changing the balance between service charges and consumption charges of existing network tariffs¹⁸. This analysis has been updated to reflect TasNetworks revised Regulatory Proposal and Tariff Structure Statement submitted in December 2016.

¹⁸ TasNetworks, *Improving the way we price our network services*, Consultation paper, October 2015, p. 24-28.

The revised analysis confirms that the majority of customers will experience price decreases as a result of the updated forecast revenue allowance, together with the re-alignment between tariffs and tariff components over the two-year Tariff Structure Statement period. The figures below present the average changes in network charges for customers by network tariff and consumption.

Figure 18 illustrates the impact in the average network charge for residential customers on a combined tariffs Residential Low Voltage General (TAS31) and Uncontrolled Low Voltage Heating (TAS41) by consumption level during the Tariff Structure Statement period.

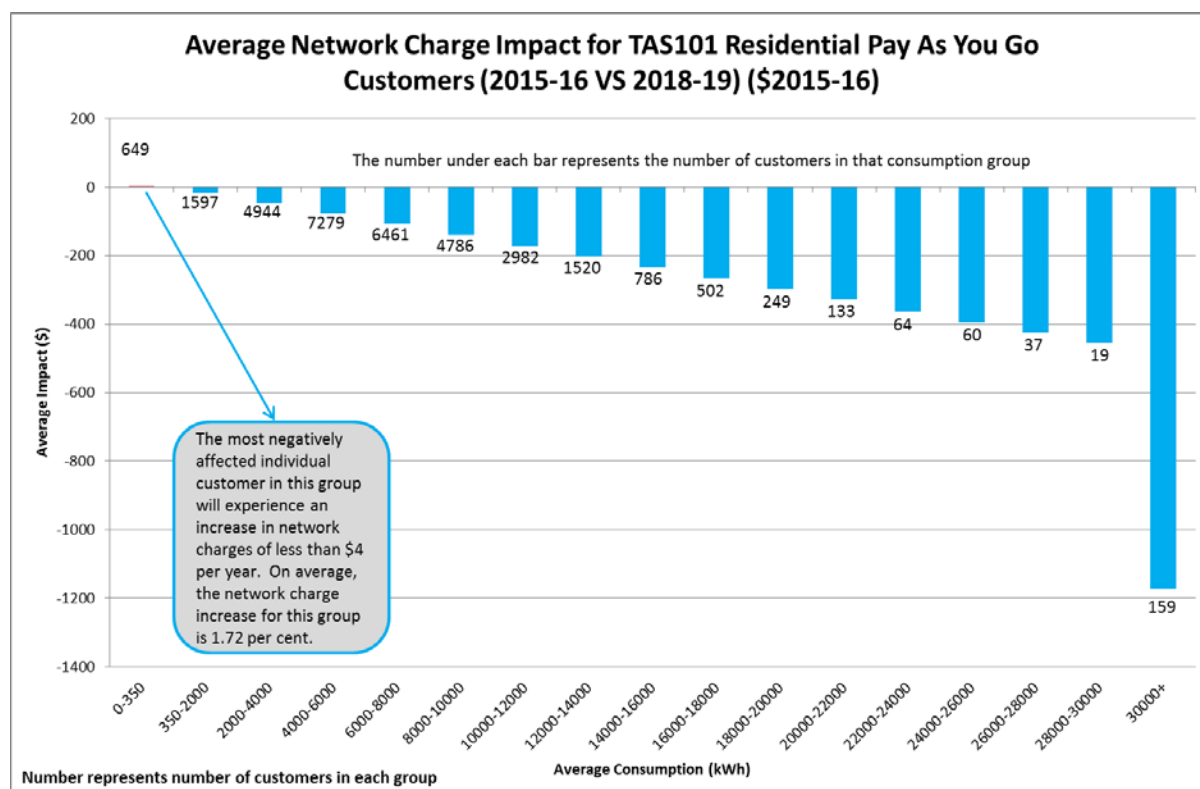
Figure 18: Average network charge impacts for residential customers



On average, the only customer usage group (annual consumption) on this tariff combination that are likely to see an increase in their annual network charge are those customers using less than 100kWh per year. For this group, the greatest annual increase is approximately six dollars. Depending on usage profiles, customers in other usage categories may also see an increase, however on average this is not the case. Premises that use less than 100 kWh per year are likely to be holiday homes, empty rental properties or customers that have not yet received a charge for a full year of service.

Figure 19 illustrates the impact in the average network charge for residential pay as you go customers by consumption level during the Tariff Structure Statement period.

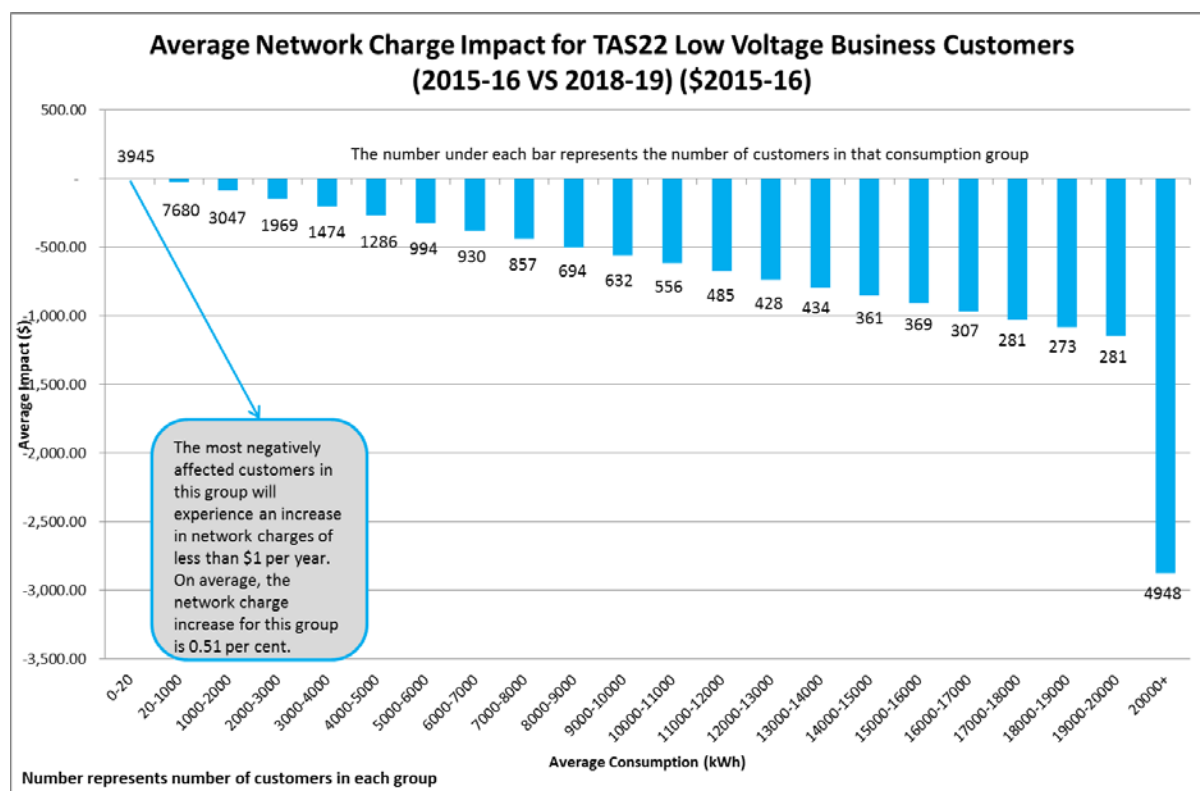
Figure 19: Impact on average network charge for residential pay as you go customers



On average, the only customer usage group (annual consumption) on this tariff likely to see an increase in their annual network charges are those customers using less than 350kWh per year. For this group, the greatest annual increase is less than four dollars.

Figure 20 illustrates the impact on the average network charge for low voltage business customers.

Figure 20: Impact on average network charge for low voltage business customers



The only group in this tariff likely to see an increase in their average network charge are those customers using less than 20kWh per year. For this group, the greatest annual increase is less than one dollar.

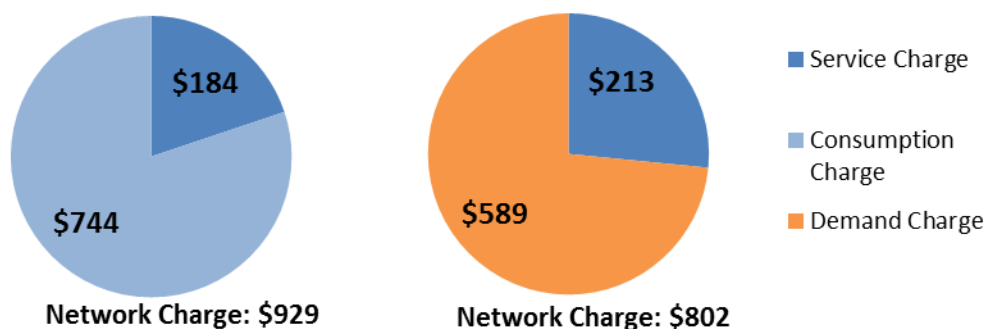
14.2 Impact of new time of use demand based network tariffs

It is difficult to assess the impact on customers that choose the new time of use demand based tariff because of the limited metering data available for customers. However, TasNetworks' September 2015 consultation paper: *Demand-based network tariffs – offering a new choice* provided analysis of potential impact on customers that opt into a time of use tariff¹⁹. We have since updated this analysis to reflect the tariffs proposed in the December 2016 revised Tariff Structure Statement, it now reflects a comparison in network charges from 2015-16 to 2018-19.

¹⁹ TasNetworks, *Demand-based network tariffs – offering a new choice*, Consultation paper, September 2015, p. 23-26.

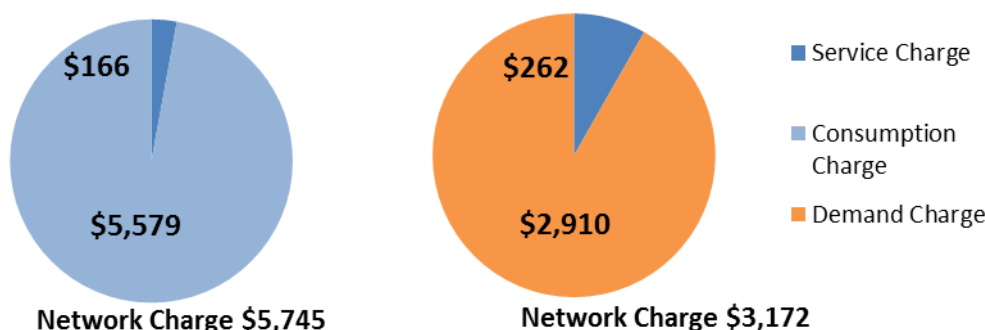
A typical²⁰ residential customer on a combined Residential Low Voltage General (TAS31) and Uncontrolled Low Voltage Heating (TAS41) tariffs could expect a reduction of 14 per cent in comparing the 2018-19 and the 2015-16 network charge if it switched to the new residential time of use demand based network tariff (refer Figure 21).

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



A typical low voltage small business customer on Business Low Voltage General (TAS22) tariff could expect a 45 per cent reduction comparing the 2018-19 to the 2015-16 network charge if it switched to the new time of use demand based network tariff (refer Figure 22).

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



A typical low voltage large commercial customer on a Business Low Voltage kVA Demand (TAS82) could expect a 12 per cent reduction comparing the 2018-19 to the 2015-16 network charge while a typical low voltage large commercial customer on a Business Low Voltage time of use tariff (TAS94) could expect a 3 per cent decrease compared to 2015-16 (refer Figure 23 and Figure 24).

²⁰ Figures 12 to 15 assume medium usage customers aconsistent with a derived average system load profile

Figure 23: Network charge impact on an average large low voltage business customers on the Business Low Voltage kVA demand tariff (TAS82) of moving to the new time of use demand based network tariff

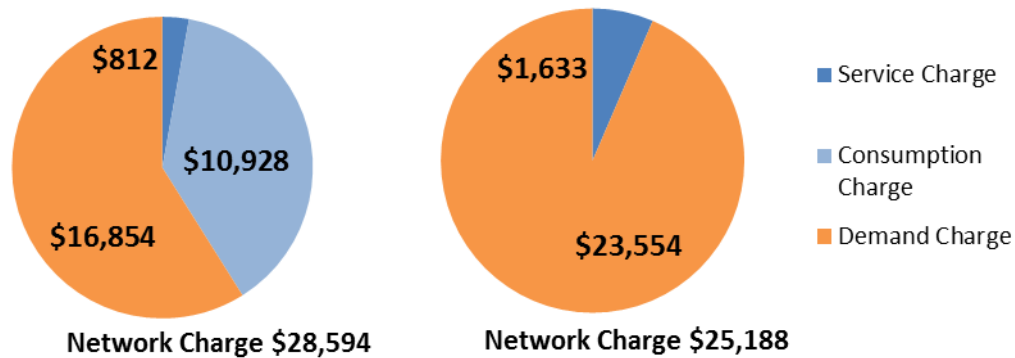
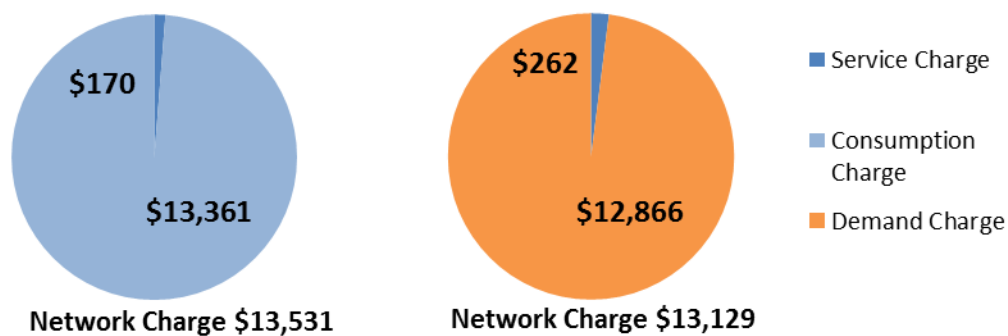


Figure 24: Network charge impact on an average large low voltage business customers on a Business Low Voltage time of use (TAS94) tariff of moving to the new time of use demand based network tariff



14.3 Worked example for demand based charges to residential customers

In this section, we provide an example of how the time of use demand charge would be calculated for a residential customer. The charges are presented in the table below.

Table 13: Network tariff component summary (2018-19)

Residential time of use tariff demand based tariff	Tariff charge components ²¹
Service charge (\$/day)	\$0.583
Peak period charge (\$/kW/day)	\$0.492
Off- Peak period charge (\$/kW/day)	\$0.164

The below calculations show the time of use demand based network charges for the month of August (31 days). For the purposes of this example, we have assumed a customer who:

- has a peak period maximum demand (MD) recorded as 3.213kW at 7:00pm on a weekday (falls within the peak period definition) - the related maximum peak demand period charge for the billing period would be \$49.00 ($\$0.492 \times 3.213 \times 31$);
- in the same billing period, has an off-peak period MD recorded as 2.966kW at 1:00pm on a weekday (falls within the off-peak period definition) - the related monthly maximum off-peak demand period charge for the billing period would be \$15.08 ($\$0.164 \times 2.966 \times 31$); and
- the service charge would be \$18.07 ($\0.583×31).

The total network charge is **\$82.15** ($\$49.00 + \$15.08 + \18.07).

Table 15 shows the network charges under the existing tariff structure (TAS31/41).

Table 14: Network tariff component summary (2018-19)

Residential consumption based tariffs	Tariff charge components ²²
Service charge TAS31 (\$/day)	\$0.497
Service charge TAS41 (\$/day)	\$0.061

²¹ Network Use of System charges

²² Network Use of System charge

Residential consumption based tariffs	Tariff charge components ²²
All Energy charge TAS31 (\$/kWh)	\$0.105
All Energy charge TAS41 (\$/kWh)	\$0.068

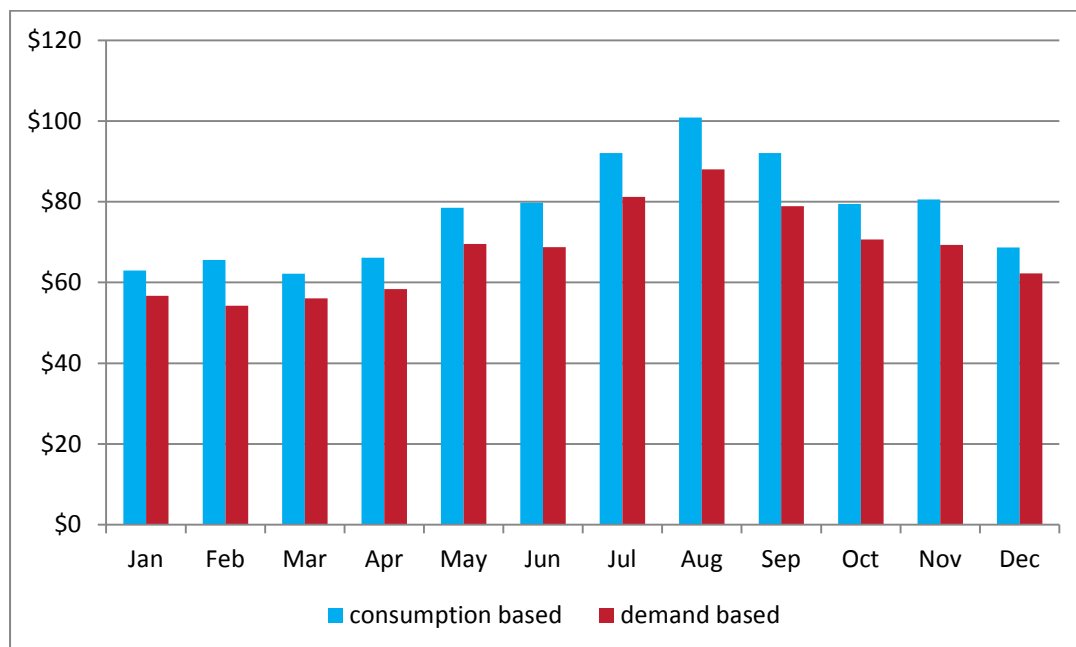
Assuming the customer uses 403kWh under the Residential Low Voltage General (**TAS31**) tariff and 432kWh under the Uncontrolled Low Voltage Heating (**TAS41**) tariff in the 31 day billing period, then the same customer would incur:

- service charges of \$17.30 ($\0.558×31);
- energy charges of \$42.32 ($\0.105×403) for the Residential General (**TAS31**) tariff; and
- energy charges of \$29.38 ($\0.068×432) for the Uncontrolled Low Voltage Heating (**TAS41**) tariff.

The total network charge is **\$89.00** ($\$17.30 + \$42.32 + \29.38).

Figure 25 compares the monthly network charges for a medium usage residential customer under the existing (consumption based) and new (time of use demand based) tariffs. The total yearly time of use demand based network charges are \$115 lower than the total yearly consumption based network charges (comparing the 2018-19 to the 2015-16 network charge).

Figure 25 : Comparison of monthly charges under existing Residential Low Voltage General (TAS31) and Uncontrolled Low Voltage Heating (TAS41) tariffs with residential demand based network tariff



15 Compliance with Pricing Principles

There are new National Electricity Rules in place that require us to develop tariffs that meet the Network Pricing Objective. The Network Pricing Objective requires that our tariffs reflect the efficient costs of providing services to customers, and are consistent with the following Pricing Principles:

- The revenue that we recover from each tariff class needs to be between an upper bound, represented by the stand alone cost of providing services to those consumers, and a lower bound, represented by the avoidable cost if those consumers did not require those services;
- Tariffs must be based on the long run marginal cost of providing the service, taking into consideration the cost of determining the long run marginal cost, the cost of meeting the maximum demand from those consumers and any differences in the costs between geographic areas;
- The revenue to be recovered from each tariff must recover our total efficient costs of providing services in a way that minimises distortions to price signals and encourages efficient use of the network by customers;
- When setting tariffs, consideration must be given to the impact on consumers of any changes in network prices over time;
- Tariffs must comply with the National Electricity Rules and any applicable regulatory instruments, including Tasmania-specific legal requirements for pricing; and
- Tariffs must be designed to be able to be understood by consumers.

Our tariffs meet the Network Pricing Objective as they have been developed in accordance with each of the above Pricing Principles and, therefore, reflect the efficient costs of providing services to our customers.

The following sections demonstrate how we have met each of the Pricing Principles.

15.1 Upper and lower bounds for network tariffs

The Pricing Principles require us to set our network tariffs so that the revenue recovered for each network tariff class lies between an upper bound representing the stand alone cost of serving the customers who belong to that network tariff class and a lower bound representing the avoidable cost of not providing the services to those customers.

The National Electricity Rules do not specifically define avoidable and stand-alone costs, or set out the methodology that we should apply to calculate these costs. We have interpreted the upper and lower bounds for each network tariff class as follows:

- Stand-alone cost (upper bound) – we calculate this amount as the cost of servicing all customers under that tariff class, assuming no other tariff classes are being served from our distribution system. This is the cost that we would theoretically incur if we provided services solely to that tariff class.
- Avoidable cost (lower bound) – we calculate this amount as the total cost avoided if that tariff class was not served, while other classes remained served. This represents the dedicated costs incurred to provide services to that tariff class.

This principle is consistent with our strategy as it facilitates the efficient recovery of revenue, ensuring that customers neither pay too much or too little for the services provided.

15.1.1 Standard control services

We have estimated the stand-alone costs for each network tariff class by calculating the total annual costs of operating our distribution network, less the avoidable costs of serving other network tariff classes. This approach uses the total maximum allowed revenue as a first step, and then subtracts all costs that would be avoided if no other network tariff classes were served. This is equal to the costs of installing and maintaining the shared network (which would be solely allocated to that network tariff class) and the connection costs designated to that network tariff class. It therefore does not include costs associated with connection assets designated to other network tariff classes. Our calculation assumes the existence of the network in its current state.

The stand-alone cost were estimated using our Total Efficient Cost model, which allocates the building block components of the maximum allowed revenue to assets, then customer groupings, then network tariffs.

We interpret the avoidable cost for all network tariff classes as being the value of the connection assets for the customers within that network tariff class. This is equal to the costs of financing and maintaining the connection assets designated to that network tariff class. Business costs relating to operational areas have been assumed to be unavoidable as these operational areas service multiple network tariff classes.

We consider that:

- our costs associated with running the business – that is the costs of maintaining our corporate operations – are not avoidable for any network tariff class. These services would need to be maintained for the remaining tariff classes even if one of the network tariff class was no longer served;
- the costs of the shared network – that is, the costs of funding and maintaining the network – are not avoidable for any particular network tariff class; and
- the direct costs of supplying each network tariff class – being the return on assets, depreciation and operating expenditure on assets that are directly attributable to the customers within that tariff class – are avoidable.

The following table demonstrates that we expect the revenue in each network tariff class for standard control services to fall between the avoidable and stand-alone costs for each network tariff class.

Table 15: Stand-alone and avoidable cost boundaries 2017-18

Tariff class	Avoidable cost (\$m)	Expected revenue (\$m) ¹	Stand-alone cost (\$m)
Individual Tariff Calculation	0.1	1.2	312.5
High Voltage	1.3	6.4	313.6
Irrigation	0.4	4.8	312.7
Large Low Voltage	2.1	18.9	314.4
Small Low Voltage	2.1	55.3	313.3
Residential	7.6	102.3	318.4
Uncontrolled Energy	0	32.9	312.4
Controlled Energy	0	1.5	312.4
Unmetered	0	0.8	312.4
Street Lighting	0.1	1.8	312.4
Embedded Generation ²	n.a.	n.a.	n.a.

1. The expected revenue excludes side constraint adjustments.

2. We do not apply a charge for this network tariff class.

15.1.2 Alternative control services

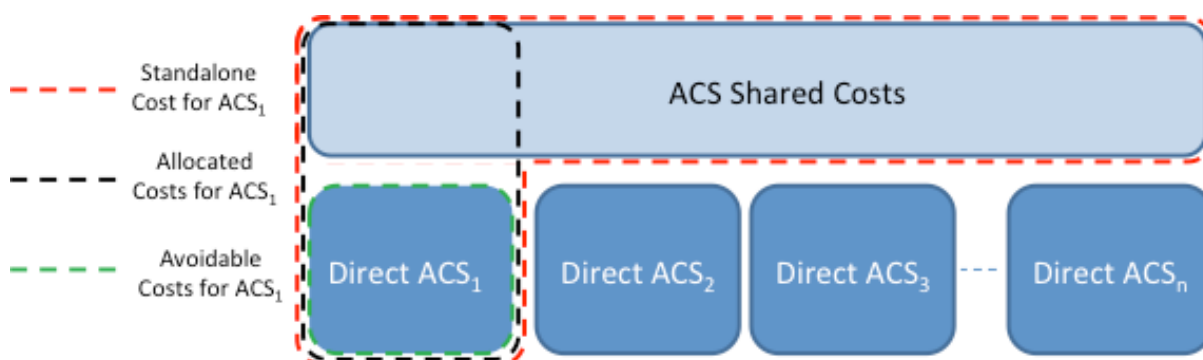
We provide alternative control services using a mix of shared and dedicated physical assets and labour. Prices for each of these services are set on a full cost recovery basis using the formula approved by the Australian Energy Regulator.

The use of a cost based formula for pricing implies that if we provided only one alternative control service tariff class, then total revenue for that tariff class would equal the total cost of serving that tariff class (where the total cost incurred in the provision of the service for that tariff class includes the full cost of assets used by all alternative control services). Given that we provide more than one alternative control service tariff class, shared assets such as depots and vehicles are shared between all alternative control services tariff classes. This means that the revenue received from one alternative control services tariff class will be less than the stand-alone cost of that tariff class.

The avoidable cost of alternative control services is the cost that would be incurred in the delivery of the services to a tariff class if no services were provided to any other tariff class. The only avoided costs relating to alternative control services relate to labour costs charged on an hourly basis and materials consumed during the course of providing the service. Given that the formula used to derive prices for alternative control services includes a component of shared costs, the total revenue for tariff classes will exceed the avoidable portion.

This is illustrated in the figure below.

Figure 26: Avoidable and stand alone costs for alternative control services



We have not undertaken any quantitative analysis of the stand-alone and avoidable costs for alternative control services.

15.2 Application of long run marginal cost and minimising price signal distortions

Long run marginal costs are costs that can be influenced by the decisions customers make today about their use of the network. We are required to set our tariffs based on the long run marginal cost of providing the service, taking into consideration the cost of determining the long run marginal cost, the cost of meeting the maximum demand from those consumers and any differences in the costs between geographic areas. Further information on our methodology for calculating the long run marginal cost is provided in Section 20.

The National Electricity Rules recognise that if tariffs are set to recover only the long run marginal costs of services, then they are unlikely to generate sufficient revenue to recover the total efficient cost of the network.

The National Electricity Rules therefore require each tariff recover the distributor's total efficient costs in a way that minimises the distortions to price signals that encourage efficient use of the network by customers. The provision recognises the dual role played by tariffs, in terms of:

- Signalling future costs, thereby encouraging customers to make efficient usage and investment decisions; and
- Enabling distributors to recover the total efficient cost of the network thereby providing the right incentives to network owners to continue to fund ongoing network investment.

We have determined the costs to be recovered from a tariff class, and designed the charging parameters within a tariff, in order to reflect the long term costs while providing effective price signals to our customers. Our network tariffs and charging parameters are designed to recover amounts from network tariff classes which are reflective of the costs of providing services to these customers, and send pricing signals to customers about the cost of their use of the network through the selection of appropriate charging parameters.

We have designed our network tariffs to contain a combination of charging parameters in order to reflect long run marginal cost and recover the total allowable revenue. Network tariffs may include a:

- specified demand charge that may take into account the long term demand peak and can provide effective pricing signals to customers of excessive load at peak time;
- anytime demand charge is used to take into account short term peaks in demand; or
- time of use demand charges to take into account the long term demand peak.

In all cases, the demand charge component of the network tariff is based on the long run marginal cost. Our Tariff Strategy aims to introduce a demand charge into all our network tariffs in the medium to longer term.

Our approach is also consistent with our strategy as it includes appropriate price signals around the cost of meeting demand, while keeping the tariffs as simple as possible.

15.3 Costs and benefits of proposed method

We have adopted the Average Incremental Calculation method to calculate the long run marginal cost for each network tariff class.

Specifically, our estimate of long run marginal cost is based on our forecast of demand driven augmentation capital expenditure, and the operating costs, required to meet our forecast of cumulative growth in maximum demand on our network over the next ten years.

Our reasons for adopting this approach to estimating long run marginal cost include the following:

- our approach relies primarily on information that is available in our regulatory proposal;
- our approach ensures that if our underlying demand and cost forecasts eventuate, a cost reflective network price based on that long run marginal cost will generate revenue over the evaluation period equal to the cost incurred as a result of that growth (in NPV terms); and
- our approach is commonly used by distribution networks, as it is generally considered to be well suited to situations where there is a fairly consistent profile of investment over time to service demand growth.

Our current long run marginal cost estimates have only been used as a guide for setting our demand charges, as they are highly sensitive to the forecast inputs utilised.

15.3.1 Additional costs of meeting peak demand

We have addressed the requirement for network tariffs to reflect the additional cost of meeting demand at times of greatest utilisation of the network by basing our estimate of the long run marginal cost on the forecast augmentation capital expenditure, which represents the investment in capacity required to meet the peak demand.

To the extent feasible, we have set the demand component of our network charges at, or approaching, the long run marginal cost for the relevant tariff class, and will be transitioning all our tariffs to have a demand charge component over the medium to longer term.

15.3.2 Costs by location

We are required to take into consideration the extent of any geographical cost differences in determining the long run marginal cost of providing services to our customers. This has been taken into consideration in our modelling of the long run marginal cost for standard control services, with the long run marginal cost determined for each network tariff class for a number of regions that comprise our distribution network.

However, our network tariffs generally do not distinguish between regions. While this is a requirement of the National Electricity Rules, we are subject to special Rule, referred to as a jurisdictional derogation, that requires our network tariffs to be uniform across Tasmania for all customers that consume less than 150MWh of electricity per annum.

The jurisdictional derogation covers all network tariff classes except the Individual Tariff Calculations and High Voltage tariff classes. The demand charges for these tariff classes currently do not reflect locational differences due to the practical difficulties and administrative costs involved.

We note that the Individual Tariff Calculations tariffs and Business High Voltage kVA Specified Demand (**TAS15**) network tariffs have locational signals embedded in the transmission use of system component of the overall network charges.

15.4 Revenue recovery

The regulatory framework requires that we design network tariffs that reflect our efficient costs of providing services for each tariff class, while recovering no more than the allowable revenue set for us by the regulator and in a way that minimises distortions to pricing signals that encourage efficient use of the network.

15.4.1 Recovery of total efficient costs

Our starting point for the recovery of our total efficient costs is the revenue allowance set by the regulator, as this represents a build-up of our efficient costs of providing network services. That is, the total revenue allowance represents our total efficient costs of serving all our customers.

We have estimated the revenue that we need to recover from each tariff class in order to meet this principle by determining the proportion of that revenue allowance that is attributable to each network tariff class and each network tariff.

We have calculated what each tariff would need to be to meet this principle, and have set our indicative tariffs to transition to those total efficient cost levels over the medium to longer term. We have chosen a transition path to reduce potential price shocks to our customers.

As well as meeting the National Electricity Rule requirements, this principle is consistent with that adopted for our strategy that tariffs should allow for recovery of efficient costs.

15.4.2 Alignment with distribution determination

Our network tariffs are designed to recover the efficient revenue that we are allowed by the Australian Energy Regulator to provide distribution services. Each year, we determine what the maximum allowable revenue is, including adjustments for any under-or over-recoveries in prior years, actual inflation and pass-throughs, such as the electrical safety levy and national energy market level, in accordance with the formula prescribed by the Australian Energy Regulator in the revenue determination.

We undertake the following checks in setting our network tariffs each year:

- that overall forecast revenue, when summed across the network tariff classes, is no more than the revenue allowance approved by the Australian Energy Regulator after allowing for any under-or over-recoveries in prior years, adjustments for actual inflation and pass-throughs, such as the electrical safety levy and national energy market level;
- the annual percentage changes in the individual tariffs are within the side constraints approved by the Australian Energy Regulator;
- the revenue for each tariff class lies between the stand alone and avoidable costs for that tariff class;
- the revenue for each tariff class is at, or moving towards, recovery of the total efficient cost for that tariff class; and
- the demand component of the tariff is at, or moving towards, recovery of the long run marginal cost for that tariff class.

Our tariffs are calculated annually based on the forecast demand and consumption at the time the network tariffs are set. Any under- or over-recovery of the allowed revenue resulting from differences between the actual and forecast revenue is accounted for through adjustments to the revenue in future years in accordance with the unders and overs adjustment mechanism approved by the Australian Energy Regulator.

We note that this principle aligns with our strategy that our tariffs, both standard and alternative control, will be compliant with the National Electricity Rules, the Australian Energy Regulator's revenue determination being a key decision under the National Electricity Rules.

15.5 Customer impacts

Consideration of the impact on our customers has been central to the development of our strategy. This has fundamentally shaped how we plan to transition to more cost reflective tariffs over time. A discussion of customer impacts is provided in section 14 of this paper.

Adjusting our tariffs in a single year so that each network tariff recovers the total efficient cost of delivering the services covered by that network tariff would likely result in significant price shocks, especially for those network tariffs that are currently heavily discounted. In developing our strategy, we will ensure that the transition to more cost reflective tariffs occurs gradually over time in order to avoid any potential for sudden adverse impacts on customers. Our focus is to deliver predictable and sustainable network charges for our customers.

15.6 Simplicity of tariff structures

The National Electricity Rules require that the structure of our tariffs be reasonably capable of being understood by our customers. The majority of our network tariffs have structures that are simple and easy to understand, comprising only two charging parameters:

- Service charge, which is a fixed charge (cents per day) that does not vary with the level of consumption; and
- Volume charge, which is a consumption charge that customers pay for each unit of electricity that they use (cents per kWh). For the time of use tariffs, different rates may apply depending on the time of day the electricity is consumed.

Some tariff classes also have a demand charge, which may be applied as a:

- Service charge for a specified level of demand (cents per kVA per day, for a given kVA); or
- Variable charge based on the maximum demand recorded during a specified period (cents per kVA per day).

There has been little change in the structure of our network tariffs, and the charging parameters and network tariffs are well understood at a high level by our customers and their retailers.

While the tariffs comprising only a service charge and consumption charge may be the simplest to understand and apply, these network tariffs are not necessarily cost reflective and do not provide appropriate pricing signal about the cost of the network. This is why, as previously discussed we are introducing new time of use demand based network tariffs as a choice for our customers.

15.7 Compliance with National Electricity Rules and applicable regulatory instruments

The network tariffs that we develop must comply with the Rules and other applicable legal requirements. We have departed from the following two principles:

- the revenue from each tariff must reflect the total efficient cost of servicing the customers assigned to that tariff; and
- the need for the tariffs to have regard to the extent to which costs vary between different locations on our network.

However, these departures are necessary in order to also to manage the impact on our customers from annual changes in network tariffs and to comply with the Rules that apply specifically to Tasmania.

While our network tariffs overall are designed to ensure that we recover no more than our total efficient costs of providing all services to our customers, there are some individual network tariffs that do not meet this principle. Adjusting our network tariffs in a single year so that each network tariff does recover the total efficient cost of delivering the services covered by that tariff would result in significant price shocks for some of our customers, especially for those network tariffs that are currently heavily discounted. In developing our strategy, we will ensure that the transition to more cost reflective network tariffs occurs gradually over time in order to avoid any potential for sudden adverse impacts on customers. Our focus is to deliver predictable and sustainable network charges over the longer term, without big changes to prices from year to year.

As noted above, most of our network tariffs do not take into consideration any differences in costs between regions as we are subject to special jurisdictional rule that requires our network tariffs to be uniform across Tasmania for customers that consume less than 150 MWh per annum. For the remaining tariff classes, the distribution tariffs currently do not reflect locational differences due to the practical and administrative difficulties in doing so.

The Rules allow for departure from these principles for these reasons. Therefore, while we have departed from those two principles, our network tariffs are compliant with the pricing principles overall. This is also consistent with our Tariff Strategy that our tariffs will be compliant with the Rules and meet local pricing objectives.

16 Providing feedback

We encourage our customers, retailers and stakeholders to provide feedback on our tariffs. To keep up-to-date with network tariff reform and key TasNetworks initiatives visit our website:

<http://www.tasnetworks.com.au/customer-engagement>

For details of the Australian Energy Regulator's network pricing determinations visit:

<http://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/pricing-proposals-tariffs>

For more information about distribution network tariff reform requirements refer to:

<http://www.aemc.gov.au/Rule-Changes/Distribution-Network-Pricing-Arrangements>

17 Updating our prices

17.1 Annual Pricing Proposal

We are required to submit an annual Pricing Proposal to the Australian Energy Regulator (for its approval) detailing a range of prescribed information on our tariffs and tariff classes.

Our Pricing Proposals for the 2017-19 regulatory period will include:

- Initial Pricing Proposal 2017-18, which we will submit to the Australian Energy Regulator for approval, 15 business days after the Australian Energy Regulator publishes its distribution determination in April 2017; and
- Annual Pricing Proposal 2018-19, which we will submit to the Australian Energy Regulator for approval, 3 months before the commencement of the 2018-19 regulatory year.

Our Pricing Proposals will comply with our Tariff Structure Statement. We will aim to set each network tariff to be broadly consistent with the corresponding indicative pricing levels for that tariff as set out in our Indicative Pricing Schedule. Our Pricing Proposals will demonstrate how each proposed tariff is consistent with the Indicative Pricing Schedule, or explain any material differences.

17.2 Related documents

Our formal Tariff Structure Statement is available on our web site at: <http://www.tasnetworks.com.au>

If you are uncertain about the network pricing process or the pricing arrangements that may be applicable to your particular circumstances you are encouraged to contact us at:

Leader Regulation

PO Box 60,

Moonah TAS 7009

E-mail: revenue.reset@tasnetworks.com.au

17.3 Tariff Strategy

We have published a number of information and consultation documents as part of the development of our Tariff Strategy and Tariff Structure Statement. These documents, which are available on our website, include:

- Improving the way we price our services (March 2015)
- Directions and Priorities Consultation Paper (August 2015)
- Demand based network tariffs – offering a new choice (September 2015)
- Improving the way we price our network services (October 2015)

17.4 Indicative Pricing Schedule

Our Tariff Structure Statement is accompanied by our Indicative Pricing Schedule which sets out indicative price levels for each tariff for 1 July 2017 to 30 June 2019. The indicative prices have been determined in accordance with our Tariff Structure Statement.

The Indicative Pricing Schedule is revised and submitted with the Pricing Proposal each year.

17.5 Applications and Price Guides

Each Pricing Proposal is supported by a range of guides designed to assist external parties, particularly customers and retailers, to understand the development and application of charges for the services we provide. Specifically our annual Pricing Proposals are supported by the following:

- Network Tariff Application and Price Guide;
- Metering Services Application and Price Guide;
- Public Lighting Application and Price Guide; and
- Ancillary Services Application and Price Guide.

The guides are updated annually to reflect any changes to our tariffs, ~~including changes to our processes for assigning customers to tariffs.~~

18 Schedule 1: Network tariff options considered and analysed

Table 16 below provides an outline of the network tariff options considered and the outcome of the assessment undertaken. Our network consultation paper *Demand based network tariffs – offering a new choice* (<http://www.tasnetworks.com.au/customer-engagement/tariff-reform>) provides further information on how we arrived at our preferred demand based network tariff structure.

Table 16: Network tariff option assessment

Common Network Tariff Structures	Description
Any Time Consumption	While any time consumption network tariffs are easy for customers to understand, they do not in any way reflect the future costs (or sunk) of building, maintaining and operating a network.
Time of Use Consumption	We currently have a range of time of use consumption network tariffs in place. These network tariffs provide incentives for customers to reduce their consumption on each individual day during the periods of the day when loading on the network is high. Customers who respond to these signals by reducing their consumption during those periods are rewarded with lower overall network charges. Therefore, these types of network tariffs do have cost reflective properties.
Seasonal time of use	We consider that seasonal demand time of use network tariffs have the potential to provide a greater degree of cost reflectivity to address particular network constraints as a consequence of seasonal variations. For example, to align with the network peak, the winter period would be priced higher than the summer period. However we received feedback through our consultation indicating that our customers do not support seasonal variations due to the potential impact of increased charges during the winter period and supported the simplicity of no seasonal variation.
Critical Peak	We consider that critical peak network tariffs have the potential to provide targeted cost reflective signals to address particular network constraints; however their blanket application is likely to be punitive where customers have limited ability to influence their demand as well as being overly complex for small customers in particular.

Common Network Tariff Structures	Description
Any time Maximum Demand	<p>Where customers pay a charge based on the maximum amount of electricity they draw at any time during a defined period. For example, the charge may be applied to the maximum amount of electricity demanded (consumed) by the customer:</p> <ul style="list-style-type: none"> • during a particular time period within a day; or • during a single day in the billing period; or • during 'peak periods' when the electricity network is experiencing greatest utilisation. <p>Demand charges are applied on either a cents per kilowatt (kW) per day or cents per kilovolt-ampere (kVA) basis, where kW and kVA are measures of demand.</p>
Capacity	<p>While capacity charges may be reasonably cost reflective they would be very difficult to implement in respect to small customers. Given the current level of customer network tariff understanding and customer access to data it would be very difficult to set the appropriate capacity level for each customer. Capacity network tariffs will also be harder for customers to influence and may be viewed as a proxy for a fixed charge.</p>
Time of Use Maximum Demand	<p>Based on our assessments, we identified demand based network tariffs with a time of use element as our preferred network tariff structure, this network tariff structure effectively signals future network costs (signalling and recovery of our long run marginal costs). A demand based charge provides an appropriate balance between the long term nature of investment that should be signalled to customers and network tariff structure which is simple enough for our customers to understand.</p> <p>We are proposing the use of a time of use maximum demand charge based on the customers highest demand over a 30 minute period in both a peak and off peak period. This is based on customer feedback in response to demand based measurement options, including the option to base the charge on average demand (across multiple periods).</p> <p>We are proposing for these charges to be based on a quarterly billing cycle, noting that we would like to transition to a monthly billing cycle as technology improvements support this transition.</p>

19 Schedule 2: Network tariff classes and network tariffs

19.1 Network tariff classes

Under the Rules a tariff class is a class of customers for one or more direct control services (that is standard control services or alternative control services) who are subject to a particular tariff or particular tariffs. The Rules set out a range of requirements relating to tariff classes, which have been met as follows:

- Each customer for direct control services must be a member of one or more tariff classes. We assign each customer for standard control services to a tariff which is in turn grouped by tariff class, therefore each customer is a member of at least one tariff class.
- Separate tariff classes must be constituted for retail customers to whom standard control services are supplied and customers to whom alternative control services are supplied (but a customer for both standard control services and alternative control services may be a member of two or more tariff classes). Tariff classes comprise only customers to whom standard control services are supplied; or alternative control services are supplied, but not both. That is, no tariff class comprises both customers to whom standard control services and alternative control services are supplied.
- A tariff class must be constituted with regard to the need to group customers together on an economically efficient basis. We have grouped tariffs into tariff classes based on the need to group customers on an economically efficient basis that adequately reflects customer characteristics and has regard to the costs of serving those customers. For instance, we group residential customers into a single tariff class because these customers tend to have similar characteristics as they are low voltage installations for premises that are principally used as residential purposes.

A tariff class must be constituted with regard to the need to avoid unnecessary transaction costs.

The network tariff classes that we have used for network tariffs for standard control services are detailed in the following table.

Table 17: Network Tariff Classes for Standard Control Services

Network Tariff class	Description
High Voltage	This network tariff class is for large customers that are able to agree a specified maximum demand that is then used for pricing purposes.
Irrigation	This network tariff class is for primary producers' business installations that are used primarily for the irrigation of crops.
Large Low Voltage	This the network tariff class for large businesses (i.e. installations that are not private residential dwellings). This tariff class applies to 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.

Network Tariff class	Description
Small Low Voltage	This is the network tariff class for all other businesses (i.e. installations that are not private residential dwellings) that are connected to the low voltage network.
Residential	This is the network tariff class for premises that are used wholly or principally as private residential dwellings. This is a relatively homogenous group of customers.
Uncontrolled Energy	This is the network tariff class 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.
Controlled Energy	This is the network tariff class for off-peak water, residential space and / or pool heating for installations that are private residential dwellings. This is a relatively homogenous group of customers.
Unmetered	This is the network tariff class for unmetered connections, other than streetlights. This is a relatively homogenous group of customers.
Streetlights	This is the network tariff class for customers that have a public lighting service (other than installation and replacement of lamps). This is a relatively homogenous group of customers.
Individual Tariff Calculation	This network tariff class is for very large customers for which tariffs are calculated on an individual basis.
Embedded Generator	This network 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, we do not apply charges for these network tariffs.

We have selected these network tariff classes based on the need to group customers on an economically efficient basis that adequately reflects customer characteristics and has regard to the costs of serving those customers. Our network tariff classes disaggregate customers sufficiently to provide for cost reflective network tariffs (by grouping customers with similar characteristics, use of the network assets and cost drivers), but not so far as to create unnecessary administrative costs to ourselves, retailers and customers in managing a large number of network tariff classes.

19.2 Network tariffs

The following table provides describes the network tariffs for standard control services for the 2017-19 regulatory period.

Table 18: Network tariffs for Standard Control Services

Network Tariff class	Network Tariff	Description
High Voltage	Business High Voltage kVA Specified Demand (TASSDM)	<p>This network tariff is for installations taking supply at high voltage, with an expected any time maximum demand of less than 2 MVA.</p> <p>There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>The customer must supply their own transformers and switchgear for installations connected on this network tariff.</p> <p>No later than two months prior to the commencement of each financial year, customers on this network tariff are required to reach an agreement on the level of specified demand which will apply to their electrical installation. Once agreed, this value is used in the calculation of demand charges for the following financial year.</p> <p>This network tariff may not be used in conjunction with any other network tariff offering.</p>
	Business High Voltage kVA Specified Demand >2MVA (TAS15)	<p>This network tariff applies to customers with an anytime maximum demand in excess of 2.0 MVA that are supplied directly from our distribution network with none of our assets beyond the connection point.</p> <p>The customer must supply its own transformers and switchgear for HV installations connected on this network tariff.</p> <p>No later than two months prior to the commencement of a financial year, customers on this network tariff are required to reach an agreement about the “Specified Demand” for their electrical installation. Once agreed this value is used in the calculation of network use of system charges for the following financial year.</p> <p>A site connected to our distribution network with this network tariff is not eligible for any other network tariff offering.</p>
Irrigation	Irrigation Low Voltage Time of Use (TAS75)	<p>This low voltage network tariff is for primary producers’ business installations that are used primarily for the irrigation of crops.</p> <p>This network tariff may not be used in conjunction with any other network tariff offering.</p>
Large Low Voltage	Business Low Voltage kVA Demand (TAS82)	<p>This network tariff is for installations taking low voltage multi phase supply. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>This network tariff may not be used in conjunction with any other network tariff offering.</p>

Network Tariff class	Network Tariff	Description
	Large Low Voltage Commercial Time of Use Demand ²³ (TAS89)	<p>This network tariff is for installations taking low voltage multi phase supply that are not Private Residential Dwellings. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>This network tariff may not be used in conjunction with any other network tariff offering.</p>
Small Low Voltage	Low Voltage Commercial Time of Use Demand ²⁴ (TAS88)	This network tariff is for low voltage installations that are not used either wholly or principally as Private Residential Dwellings. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.). This network tariff may not be used in conjunction with any other network tariff offering.
	Business Low Voltage General (TAS22)	<p>This network tariff is for low voltage installations located on premises that are not used either wholly or principally as Private Residential Dwellings.</p> <p>There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p>
	Business Low Voltage Nursing Homes (TAS34)	<p>This network tariff applies to low voltage installations that are registered as aged care facilities. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>This network tariff is obsolete and no longer available to new customers.</p>
	General Network – Business, Curtilage (TASCURT)	<p>This network tariff applies to low voltage rural installations which have a single connection point but require more than one meter due to site layout.</p> <p>The single connection point must supply an installation qualifying for, and being supplied under network tariff, Business Low Voltage General (TAS22).</p> <p>This network tariff is obsolete and no longer available to new customers.</p>

²³ Market settlement and transfer solutions codes to be provided once determined.

²⁴ Market settlement and transfer solutions codes to be provided once determined.

Network Tariff class	Network Tariff	Description
	Business Low Voltage Time of Use (TAS94)	<p>This network tariff is available for low voltage installations that are not Private Residential Dwellings.</p> <p>There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p>
Residential	Residential Time of Use Demand ²⁵ (TAS87)	<p>This network tariff is for low voltage installations that are premises used wholly or principally as Private Residential Dwellings. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.). Farm outbuildings may be connected on this network tariff provided that the connection is through the meters of the farm residence.</p> <p>This network tariff may not be used in conjunction with any other network tariff offering.</p>
	Residential Low Voltage General (TAS31)	<p>This network tariff is for low voltage installations located at premises that are used wholly or principally as Private Residential Dwellings. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>Farm outbuildings may be connected on this network tariff provided that the connection is through the meters of the farm residence.</p>
	Residential Low Voltage PAYG (TAS101)	<p>This network tariff applies to low voltage installations at premises which are used wholly or principally as Private Residential Dwellings and were supplied in accordance with a prepayment metering product prior to 1 July 2013. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>This network tariff may not be used in conjunction with any other network tariff.</p> <p>This network tariff is obsolete and no longer available to new customers.</p>

²⁵ Market settlement and transfer solutions codes to be provided once determined.

Network Tariff class	Network Tariff	Description
	Residential Low Voltage PAYG Time of Use (TAS92)	<p>This network tariff is for low voltage installations at premises which are used wholly or principally as Private Residential Dwellings and are supplied in accordance with a prepayment metering product. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>This network tariff may not be used in conjunction with any other network tariff offering.</p>
	Residential Low Voltage Time of Use (TAS93)	<p>This network tariff is available for low voltage installations that are premises used wholly or principally as Private Residential Dwellings. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).</p> <p>Farm outbuildings may be connected on this tariff provided that the connection is through the meters for the farm residence.</p>
Uncontrolled Energy	Uncontrolled Low Voltage Heating (TAS41)	<p>This network tariff is for low voltage installations.</p> <p>In installations that are located on premises that are used wholly or principally as Private Residential Dwellings, this network tariff is for water heating and/or residential space heating and/or domestic indoor pool heating only.</p> <p>In installations that are not located at Private Residential Dwellings, this network tariff is for water heating or space heating only.</p>
Controlled Energy	Controlled Low Voltage Energy – Off Peak with afternoon boost (TAS61)	<p>This network tariff is for low voltage installations.</p> <p>In the case of installations that are Private Residential Dwellings and have a current connection on network tariff Residential Low Voltage General (TAS31), this network tariff may be used for:</p> <ul style="list-style-type: none"> • water heating and/or residential space heating and/or other “wired in” appliances we approve; and/or • heating swimming pools, including those that incorporate a spa, but not separate spas from which the water goes to waste after use. <p>In installations that are not Private Residential Dwellings but which have a current connection on either network tariff Business Low Voltage General (TAS22) or Business Low Voltage Nursing Homes (TAS34), this network tariff:</p> <ul style="list-style-type: none"> • may be used for water heating and/or space heating and/or other “wired in” appliances we approve.

Network Tariff class	Network Tariff	Description
	Controlled Low Voltage Energy – Night period only (TAS63)	<p>This network tariff is available for low voltage installations only.</p> <p>In the case of installations that are Private Residential Dwellings, this network tariff may be used for:</p> <ul style="list-style-type: none"> • water heating and/or residential space heating and/or other circuits we approve; and • heating swimming pools, including those that incorporate a spa, but not separate spas from which the water goes to waste after use. <p>In installations that are not Private Residential Dwellings, this network tariff:</p> <ul style="list-style-type: none"> • is for water heating and/or space heating and/or other circuits we approve.
Unmetered	Unmetered Supply Low Voltage General (TASUMS)	<p>This network tariff is intended to be applied to small, low voltage, low demand installations with a relatively constant load profile, such as:</p> <ul style="list-style-type: none"> • illuminated street signs; • public telephone kiosks; • electric fences; • two-way radio transmitters; • fixed steady wattage installations; • traffic lights; or • level crossings. <p>For an installation to be supplied under this network tariff, the electrical devices being supplied must be permanently connected. For the avoidance of doubt, an installation containing a general purpose outlet does not qualify for this network tariff.</p>
Streetlights	Unmetered Supply Low Voltage Public Lighting (TASUMSSL)	<p>This low voltage network tariff is for the provision of public lighting services and is available to councils, road authorities and other customers wishing to install contract lighting.</p> <p>The street lighting tariff rate is based on a “use of system charge” and charged on a per lamp wattage rate. This network tariff charge is an additional charge to charges we publish for the provision of public lighting services.</p> <p>This network tariff does not include charges for the installation and/or replacement of lamps. Costs for the installation and/or replacement of lamps are recovered through additional charges which are included in our public lighting services tariffs.</p>

Network Tariff class	Network Tariff	Description
Individual Tariff Calculation	Individual Tariff Calculation (TASCUSX)	<p>Individual Tariff Calculation network tariffs will typically apply to customers with an electrical demand in excess of 2.0 MVA or where a customer's circumstances in a pricing zone identifies the average shared network charge to be meaningless or distorted. Individually calculated customer network charges are determined by modelling the connection point requirements as requested by the customer or their agents.</p> <p>Individual Tariff Calculation prices are based on actual transmission use of system charges for the relevant transmission connection point (preserving the pricing signals within the transmission charges), plus charges associated with the actual shared distribution network utilised for the electricity supply, along with connection charges based on the actual connection assets employed. This provides the greatest cost reflectivity for this type of customer and is feasible since the number of such customers is relatively small.</p> <p>Terms and conditions for these customers are contained within individually negotiated connection agreements.</p>

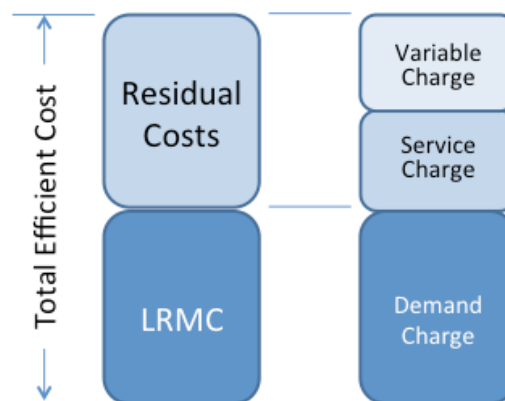
20 Schedule 3: Calculation of network tariffs

20.1 Overview

Our network tariffs each year are based on target network tariff parameters and forecast customer numbers, consumption and demand related to each network tariff.

We determine the target network tariff parameters by:

- Estimating the total efficient cost (\$) for each network tariff;
- Estimating the long run marginal cost (\$/kVA or \$/kW) for each network tariff, and determining the required long run marginal cost revenues (\$) for each network tariff;
- Calculating the residual costs (\$), this being the difference between the total efficient cost and long run marginal cost revenues for each network tariff; and
- Allocating the residual costs in a manner which seeks to minimise distortions to the long run marginal cost signals. Residual costs are allocated between the service charge (\$) and variable charge/s (\$). Allocation is dependent on the characteristics of the network tariff. In terms of the time of use demand based tariffs the majority of the residual costs are recovered via the service charge and the off-peak demand charges.



Our target tariff parameters are to meet full cost reflectivity and the National Electricity Rules requirement that tariffs be based on long run marginal cost and total efficient costs. Not all our tariffs currently meet these target parameters and are being transitioned to full cost reflectivity over time in order to avoid price shocks for our customers. Each year we aim to transition target tariff parameters for each tariff closer to requirements than for the previous year.

The check and balances that we apply in this process include:

- That overall forecast revenue, when summed across the network tariff classes, is no more than the revenue allowance approved by the Australian Energy Regulator after allowing for any under-or over-recoveries in prior years, adjustments for actual inflation and pass-throughs, such as the electrical safety levy and national energy market level;
- The annual percentage changes in the individual tariffs are within the side constraints approved by the Australian Energy Regulator;
- The revenue for each tariff class lies between the stand alone and avoidable costs for that tariff class;
- The revenue for each tariff is at, or moving towards, recovery of the total efficient cost for that tariff; and
- Where applicable the demand component of the tariff is at, or moving towards, recovery of the long run marginal cost for that tariff.

20.2 Long run marginal cost

It is a requirement that each of our tariffs must be based on the long run marginal cost of providing our service. Long run marginal cost provides a measure of how our operating and capital expenditure will change (in the long-run) in response to incremental changes in demand. The predominant driver of our network costs is meeting maximum demand, setting network tariffs in particular, based on long run marginal cost will provide our customers with a cost reflective signal that encourages efficient electricity usage.

There are two methodologies that are generally used by network businesses to calculate their long run marginal cost. The first is the average incremental cost approach. The average incremental cost methodology estimates long run marginal cost by identifying the stream of capital, operations and maintenance expenditure needed to satisfy projected demand growth, typically over ten years, and then dividing this by projected demand growth. It then calculates the present value of the expenditure required and divides this by the present value of incremental demand growth to estimate the long run marginal cost.

The second method, the perturbation approach, measures long run marginal cost as the change in the present value of costs over the investment planning period resulting from a permanent change in forecast demand (compared to demand in the base case). This is then divided by the present value of the change in demand.

We base our long run marginal cost on the average incremental cost method. This approach utilises information that is currently available for the revenue determination and planning processes (our calculations are underpinned by the same program of work as discussed in our regulatory proposal). The approach is also consistent with the approach being adopted by other distribution networks, 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.

The long run marginal cost for each network tariff class has been calculated using a forward looking, average incremental cost approach, using the following formula:

$$LRMC = \frac{\text{Present Value (new network capacity + marginal operating costs)}}{\text{Present Value (additional demand served)}}$$

Where:

- **New network capacity** is the forecast capital expenditure that we categorise as capital expenditure related to demand driven augmentation.
- **Marginal operating costs** is the additional operating expenditure attributable to the incremental capital expenditure.
- **Additional demand served** is the forecast incremental demand that is able to be served as a result of the above capital expenditure.

- The **present value** has been determined for ten year forecasts for the incremental capital expenditure, operating expenditure and demand, using the regulated weighted average cost of capital as the discount rate.

The table below sets out the estimated long run marginal cost for each network tariff.

Table 19: Estimated long run marginal cost

Tariff class	Network tariff	Long run marginal cost (\$/kW)	
		2017-18	2018-19
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	
	Business Low Voltage Time of Use (TAS94)	129	
Residential	Residential Time of Use Demand Tariff (TAS87)	182	

Tariff class	Network tariff	Long run marginal cost (\$/kW)	
		2017-18	2018-19
	Residential Low Voltage General (TAS31)	182	
	Residential Low Voltage PAYG (TAS101)	182	
	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	

21 Schedule 4: Assignment to tariff classes

The following sections set out the policies and procedures that we adhere to in assigning customers to tariff classes for both standard control and alternative control services.

21.1 Assignment of existing customers to tariff classes

A customer will be taken to be assigned to the tariff class to which we were charging that customer immediately prior to 1 July 2017 if they:

- were our customer prior to 1 July 2017; and
- continue to be our customer as at 1 July 2017.

21.2 Assignment of new customers to a tariff class

If we become aware that a person will become our customer, then we determine the tariff class to which the new customer will be assigned by taking into account one or more of the following factors:

- the nature and extent of the customer's usage;
- the nature of the customer's connection to the network; and
- whether remotely read interval metering or other similar metering technology has been installed at the customer's premises as a result of a regulatory obligation or requirement.

In addition to the above requirements, when assigning a customer to a tariff class we ensure that:

- customers with similar connection and usage profiles are treated equally; and
- customers which have micro embedded generation facilities are not treated more or less favourably than customers with similar load profiles without such facilities.

21.3 Reassignment of existing customers to another tariff class

We may reassign a customer to another tariff class if the existing customer's load characteristics or connection characteristics (or both) change such that it is no longer appropriate for that customer to be assigned to their current tariff class. Should a customer no longer have the same, or materially similar, load or connection characteristics as other customers in the customer's existing tariff class, we may also reassign that customer to another tariff class.

In some cases, a tariff class will be abolished in which case we will notify the customer of this and transition to new tariff classes.

21.4 Options to proposed assignments and reassignments

We will notify customers in writing of the tariff class to which they have been assigned or reassigned, prior to the assignment or reassignment occurring. Any notification will inform the customer that they may request further information from us and that they may object to the proposed assignment or reassignment. To that end, the notice will:

- include a copy of our internal procedures for reviewing objections and the link to where such information is available on our website;
- inform the customer that if an objection is not resolved to their satisfaction then they are entitled to escalate the matter to the Energy Ombudsman Tasmania; and
- advise the customer that if their objection is not resolved to their satisfaction after escalating the matter to the Energy Ombudsman Tasmania, then they are entitled to seek a decision by the Australian Energy Regulator via the dispute resolution process available under Part 10 of the National Electricity Law.

If we receive a request for further information about a tariff assignment or reassignment from a customer, then we will provide such information unless we consider the requested information is confidential.

If a customer makes an objection to us about a proposed tariff assignment or reassignment, we will conduct a reassessment of the customer's circumstances against the criteria used to assign customers to a tariff class (see above), and notify the customer in writing of our decision and the reasons for that decision.

21.5 System of assessment and review of the basis on which a customer is charged

We have a system of assessment and review of the basis on which a customer is charged, if the charging parameters for a particular tariff result in a basis of charge that varies according to the usage or load profile of the customer. We consider that the basis of charge may vary according to usage or load profile where:

- a change in the usage or load profile of a customer indicates that a different tariff is applicable; or
- within a tariff, the charging parameter changes according to the customer's usage.

We review the assignment of customers to our tariff classes on an annual basis, this ensures consistency in compliance of the assignment principles outlined in this paper. We have set procedures and criteria to determine when it may be appropriate for a customer to be reassigned to a differing tariff or tariff class, or where the basis of the customer's demand charges should be amended. This change is usually the result of changes in the customer's energy consumption, expected maximum demand or connection characteristics. These procedures ensure the customer's underlying tariff is appropriate to the assumed usage or load profile.

In addition to this annual review process, customers (or a customer's retailer) are able to request that we review and change a network tariff in the event of variation to the customer's usage or load profile. Provided we agree to a change in tariff, this change can take effect during a regulatory year. We use the procedures and criteria discussed above to determine if it is appropriate to change the network tariff assigned to a customer.

The charging parameters within our tariffs do not alter as the customer's usage or load profile varies. Should a customer's usage or load profile vary, the customer may either manage their usage in response to the price signals inherent in the tariff, or request to be reassigned to an alternative tariff where applicable.

This provides an effective system for assessing and reviewing the basis on which a customer is charged.

21.6 Assignment process

The assignment processes are discussed in more detail in the Network Tariff Application and Price Guide; Metering Services Application and Price Guide; Public Lighting Application and Price Guide; and Ancillary Services Application and Price Guide.

These guides are updated annually to reflect any changes to our network tariffs and charges approved by the Australian Energy Regulator through the annual Pricing Proposal process, and are available on our website at:

<http://www.tasnetworks.com.au/our-network/network-revenue-pricing/distribution-fees-and-tariffs>

22 Schedule 5: Compliance matrix

This section explains how we have addressed the Rules requirements relating to the Tariff Structure Statement.

Clause	Compliance
6.8.2(d1) The proposed tariff structure statement must be accompanied by an indicative pricing schedule.	We have prepared an Indicative Pricing Schedule which is available in the Tariff Structure Statement (TSS) on our website
6.8.2(d2) The proposed tariff structure statement must comply with the pricing principles for direct control services.	Section 15 of this document explains how we have met these principles.
<p>6.18.1A A tariff structure statement of a Distribution Network Service Provider must include the following elements:</p> <p>(1) the tariff classes into which retail customers for direct control services will be divided during the relevant regulatory control period;</p> <hr/> <p>(2) the policies and procedures the Distribution Network Service Provider will apply for assigning retail customers to tariffs or reassigning retail customers from one tariff to another (including any applicable restrictions);</p> <hr/> <p>(3) the structures for each proposed tariff;</p> <hr/> <p>(4) the charging parameters for each proposed tariff; and</p> <hr/> <p>(5) a description of the approach that the Distribution Network Service Provider will take in setting each tariff in each pricing proposal of the Distribution Network Service Provider during the relevant regulatory control period in accordance with clause 6.18.5.</p>	<p>The following references relate to the TSS.</p> <p>TSS section 3 in relation to standard control services</p> <p>TSS section 6 in relation to alternative control services</p> <hr/> <p>TSS section 5</p> <hr/> <p>TSS section 3 in relation to network tariffs</p> <p>TSS section 6.3.6 in relation to metering, public lighting and fee based ancillary services</p> <p>TSS section 6.4 in relation to quoted services</p> <hr/> <p>TSS section 3 in relation to network tariffs</p> <p>TSS section 6.3.6 in relation to metering, public lighting and fee based ancillary services</p> <p>TSS section 6.4 in relation to quoted services</p> <hr/> <p>TSS sections 2 and 4</p>

Clause	Compliance
6.18.1A(b) A tariff structure statement must comply with the pricing principles for direct control services.	Section 15 of this document explains how we have met these principles.
6.18.1A(e) A tariff structure statement must be accompanied by an indicative pricing schedule which sets out, for each tariff for each regulatory year of the regulatory control period, the indicative price levels determined in accordance with the tariff structure statement.	We have prepared an Indicative Pricing Schedule which is available in the TSS on our website
6.18.5(b) Subject to paragraph (c), a Distribution Network Service Provider's tariffs must comply with the pricing principles set out in paragraphs (e) to (j).	Section 15
6.18.5(c) A Distribution Network Service Provider's tariffs may vary from tariffs which would result from complying with the pricing principles set out in paragraphs (e) to (g) only: <ol style="list-style-type: none"> (1) to the extent permitted under paragraph (h); and (2) to the extent necessary to give effect to the pricing principles set out in paragraphs (i) to (j). 	Section 15.7
6.18.5(d) A Distribution Network Service Provider must comply with paragraph (b) in a manner that will contribute to the achievement of the network pricing objective.	Section 15
6.18.5(e) For each tariff class, the revenue expected to be recovered must lie on or between: <ol style="list-style-type: none"> (1) an upper bound representing the stand alone cost of serving the retail customers who belong to that class; and (2) a lower bound representing the avoidable cost of not serving those retail customers. 	Section 15.1
6.18.5(f) Each tariff must be based on the long run marginal cost of providing the service to which it relates to the retail customers assigned to that tariff with the method of calculating such cost and the manner in which that method is applied to be determined having regard to: <ol style="list-style-type: none"> (1) the costs and benefits associated with calculating, implementing and applying that method as proposed; (2) the additional costs likely to be associated with meeting demand from retail customers that are assigned to that tariff at times of greatest utilisation of the relevant part of the distribution network; and (3) the location of retail customers that are assigned to that tariff and the extent to which costs vary between different locations in the distribution network. 	Section 15.3

Clause	Compliance
<p>6.18.5(g) The revenue expected to be recovered from each tariff must:</p> <ol style="list-style-type: none"> (1) reflect the Distribution Network Service Provider's total efficient costs of serving the retail customers that are assigned to that tariff; (2) when summed with the revenue expected to be received from all other tariffs, permit the Distribution Network Service Provider to recover the expected revenue for the relevant services in accordance with the applicable distribution determination for the Distribution Network Service Provider; and (3) comply with sub-paragraphs (1) and (2) in a way that minimises distortions to the price signals for efficient usage that would result from tariffs that comply with the pricing principle set out in paragraph (f). 	Section 15.4
<p>6.18.5(h) A Distribution Network Service Provider must consider the impact on retail customers of changes in tariffs from the previous regulatory year and may vary tariffs from those that comply with paragraphs (e) to (g) to the extent the Distribution Network Service Provider considers reasonably necessary having regard to:</p> <ol style="list-style-type: none"> (1) the desirability for tariffs to comply with the pricing principles referred to in paragraphs (f) and (g), albeit after a reasonable period of transition (which may extend over more than one regulatory control period); (2) the extent to which retail customers can choose the tariff to which they are assigned; and (3) the extent to which retail customers are able to mitigate the impact of changes in tariffs through their usage decisions. 	Section 14 and 15.7
<p>6.18.5(i) The structure of each tariff must be reasonably capable of being understood by retail customers that are assigned to that tariff, having regard to:</p> <ol style="list-style-type: none"> (1) the type and nature of those retail customers; and (2) the information provided to, and the consultation undertaken with, those retail customers. 	Section 15.6
<p>6.18.5(j) A tariff must comply with the Rules and all applicable regulatory instruments.</p>	Section 15.7