Tariff Structure Statement

Regulatory Control Period
1 July 2019 to 30 June 2024

Tasmanian Networks Pty Ltd
Tasmanian Distribution Tariff Structure Statement
Regulatory Control Period: 1 July 2019 to 30 June 2024

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1 Distribution pricing strategy

Pricing strategy overview

This Tariff Structure Statement (TSS) is a five-year distribution pricing strategy document required by the Rules. We have engaged our customers in developing it, will seek the Australian Energy Regulator's (AER's) approval of it, and will then ensure our annual distribution prices align with it during the 2019-24 regulatory control period.

Many of our existing network tariffs need to change. When network tariffs were introduced in Tasmania they were developed based on the existing retail electricity tariffs, and did not reflect underlying network cost drivers for many of our customers. This means many of our tariffs do not meet the needs of Tasmania's energy market, nor are they consistent with the cost reflective pricing principles.

Technological and customer driven changes in the electricity market mean that the flat, consumption based network tariffs which have been used to recover the cost of building and operating the electricity distribution network from customers are no longer fit for purpose. Changes to the National Electricity Rules (the Rules) also require us to apply a more cost reflective approach to setting our network tariffs and other regulated charges. So, like other electricity networks across Australia, TasNetworks is looking to improve the way we charge for the delivery of electricity.

Since commencing operations on 1 July 2014, TasNetworks has embarked on a process of tariff reform which has seen us gradually moving towards more cost reflective pricing. This includes adjusting the prices of our existing network tariffs to unwind some long-standing cross subsidies between tariffs and between different classes of customer. We've also been developing new types of tariffs that more accurately reflect the impact that customers' use of electricity has on the cost of running the network, including at different times of the day and different days of the week.

Over the five year period covered by this TSS, we will continue with pricing reform by:

- introducing two new demand based time of use tariffs to give households and small businesses who invest in distributed energy resources (DER) new opportunities to control their electricity costs;
- offering 'introductory' discounts for our demand based time of use tariffs for both residential and small business customers, to encourage customer take up of the new tariffs;
- introducing new tariffs specifically for embedded networks; and
- continuing to progressively reduce cross subsidies between customers and between tariffs.

The changes to our tariffs come at a time when amendments to the national regulatory framework for metering have paved the way for advanced meters to be rolled out in Tasmania. Our new time of use tariffs are designed to capitalise on the services that advanced meters can support, enabling households and small businesses to:

- pay different network charges depending on how and when they use electricity;
- be supplied under just one network tariff for all their electricity needs; and

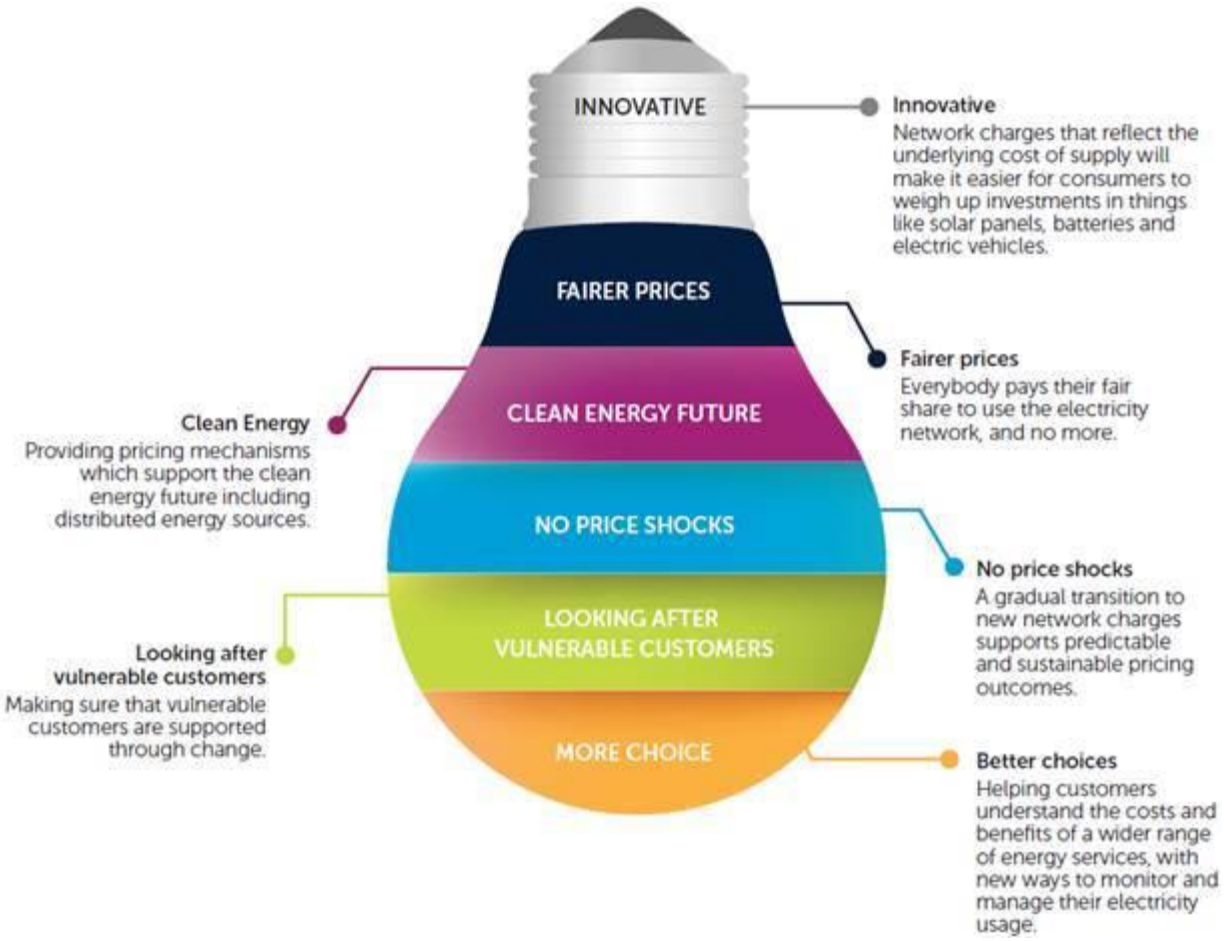
- offset the energy they generate themselves against all of their electricity use, including hot water and/or home heating.

We will continue to work with electricity retailers to progress our pricing strategy and reform to ensure that our new and adjusted network charges are incorporated into the retail tariffs offered to customers. And we will continue to engage with our customers and their representatives, to help us understand what customers want and value from their electricity service.

The benefits of pricing reform

Customers are central to everything we do at TasNetworks and our success is anchored to their prosperity and well-being. While the changes to the Rules that require us to apply a more cost reflective approach to setting our network tariffs and other regulated charges has been a catalyst for change, we have constantly viewed the reform of network prices in Tasmania in terms of the best interests of customers. The following illustration highlights some of the key benefits for our customers and the principles which guide our plans for network tariff reform.

Figure 1 The benefits of network tariff reform



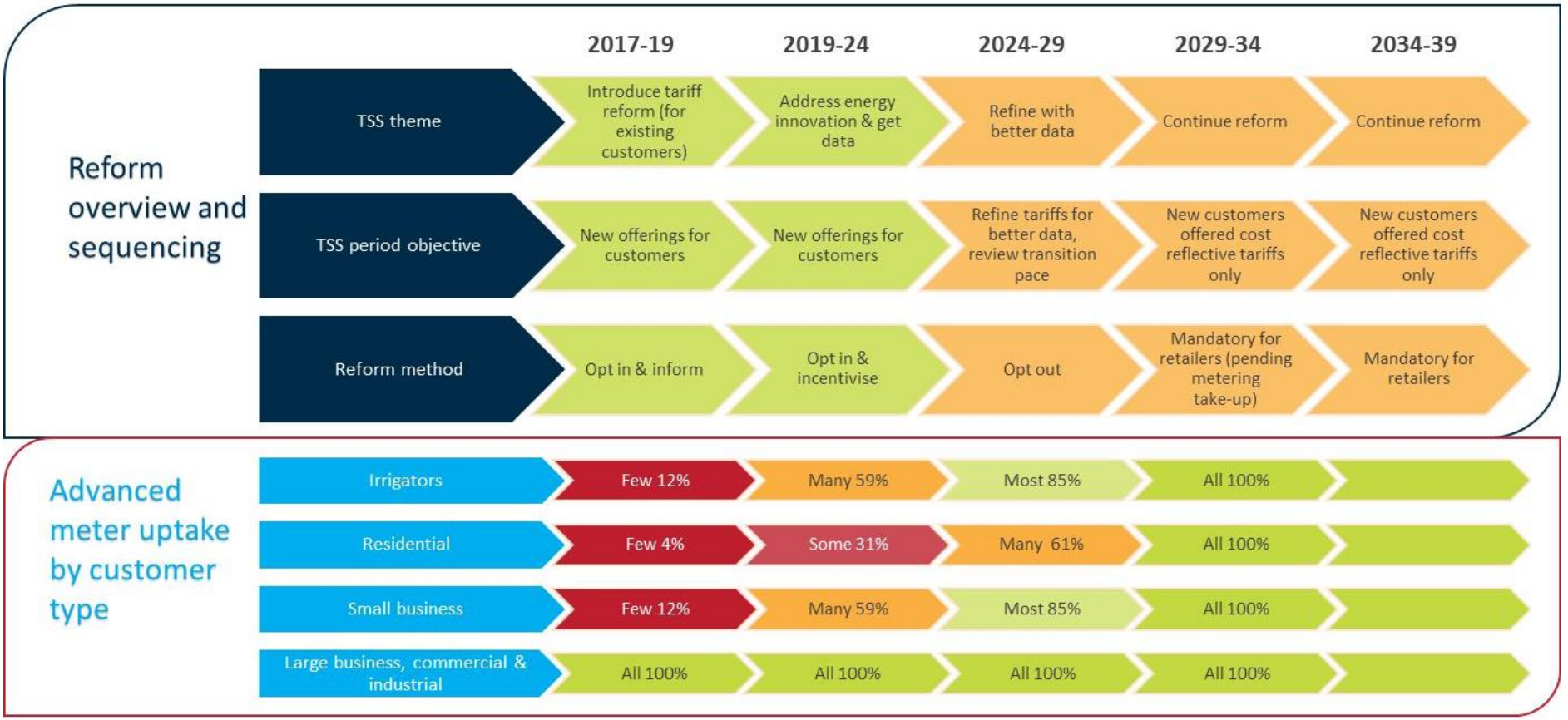
Strategy objectives and phasing

Our pricing strategy covers multiple TSS periods. We expect at least three TSS periods will be needed before most of our customers assume fully cost reflective network pricing. This phasing reflects the fact that:

- Tasmania's meter fleet is largely comprised of accumulation meters – we estimate that it will take 2 – 3 regulatory periods before most customers in Tasmania have advanced meters; and
- our engagement has shown we need to continue to assess and better understand the impacts of price adjustments for our customers. This takes time and also requires the data from advanced meters to test and refine our tariff designs and transition approach.

Our phased approach to distribution pricing reform is illustrated in Figure 2 (see following page).

Figure 2 Distribution pricing reform overview



Our 2017-19 TSS involved introducing tariff reform for existing customers

The AER approved our first TSS for 2017-19 in April 2017. This was the 'establishment' phase of our reforms that set a pathway for the subsequent regulatory periods by:

- introducing the nature and objectives of tariff reform to our stakeholders;
- introducing some new, more cost reflective tariffs as a choice for our customers, via their retailer; and
- progressing the gradual (multi-period) process of unwinding the discounts that exist in some of our tariffs to reduce the level of cross subsidies between tariffs and within classes of customers (e.g. heating and hot water specific tariffs[1]).

In this TSS period we have:

- introduced new demand based time of use tariffs as an opt-in choice for customers via their retailer;
- continued to realign the relative prices of several existing tariffs to eliminate some longstanding cross subsidies between different customer groups; and
- rebalanced the service and variable charging parameters of most of our existing tariffs.

Our 2019-24 TSS focusses on addressing energy innovation and gathering data

Our second TSS for 2019-24 builds on the work started in the 2017-19 TSS, subsequent customer engagement, AER feedback, and further analysis we've undertaken. This analysis has considered our future costs, our customers' future demand, the growing role of distributed energy resources and early data coming from our trials of new network tariffs and energy management technologies[2].

This TSS period focuses on:

- opportunities to further prioritise our reform approach and ensure we are designing tariffs for new energy technologies and customer types;
- continuing to facilitate a customer led transition to cost reflective tariffs by offering incentives to encourage customers to opt-in, while being clear from the start about the proposed transition period and tariff assignment rules;
- our plan to obtain interval metering data to better inform tariff design and pricing, and to manage customer impacts of transitioning our legacy tariffs over multiple TSS periods to a more cost reflective footing; and
- continuing the gradual path of unwinding cross subsidies.

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[1] Uncontrolled Low Voltage Heating network tariff (TAS41)

[2] TasNetworks' emPOWERing You Trial, https://www.tasnetworks.com.au/customer-engagement/tariff-reform/empoweringyou/ and CONSORT Bruny Island Battery Trial, https://www.tasnetworks.com.au/customer-engagement/tariff-reform/consort-bruny-island-battery-trial/

We note that we are not proposing to change the design of existing tariffs for customers supplied at high voltages. These tariffs already feature a combination of cost reflective elements such as time of use and demand based charges.

Our engagement with customers and stakeholders leading up to and during the 2019-24 regulatory period is focussed on the following key areas:

- new tariffs for new energy and customer types;
- charging methodology changes for demand based tariffs;
- the transition timeline to cost reflective pricing; and
- incorporating initial learnings from our trials.

What we will deliver in this 2019-24 TSS

Distributed energy resources

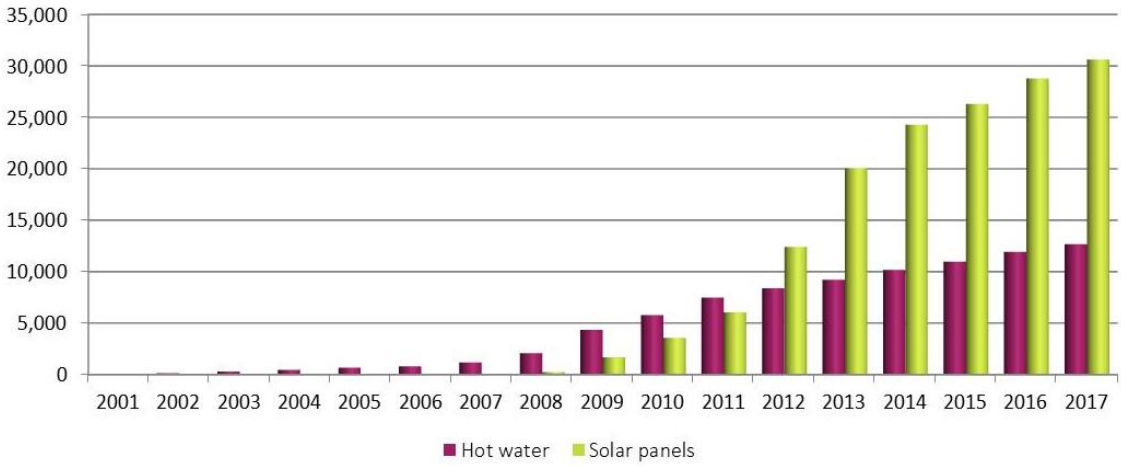
During the 2019-24 TSS period, we expect to see a growing class of customers that can be classified as 'early adopters' who invest in electricity storage, generation, or management technology – collectively referred to as DER – as well as electric vehicles, which can also be used as a form of mobile electricity storage. The figure below illustrates some of the technology which is changing the way customers use electricity and the way they use our network.

Figure 3 Distributed energy resources

The first form of DER to gain mass market acceptance is the use of photovoltaic (PV) solar panels. Solar hot water systems could also be considered a form of DER, in that they generate heat energy

and store it for later use, and the uptake of solar hot water heating in Tasmania has also risen significantly over the same period, albeit at a slower rate than solar panels in recent years. The following graph charts the growth in the number of customers installing solar panels and solar hot water systems[3] in Tasmania since 2000.

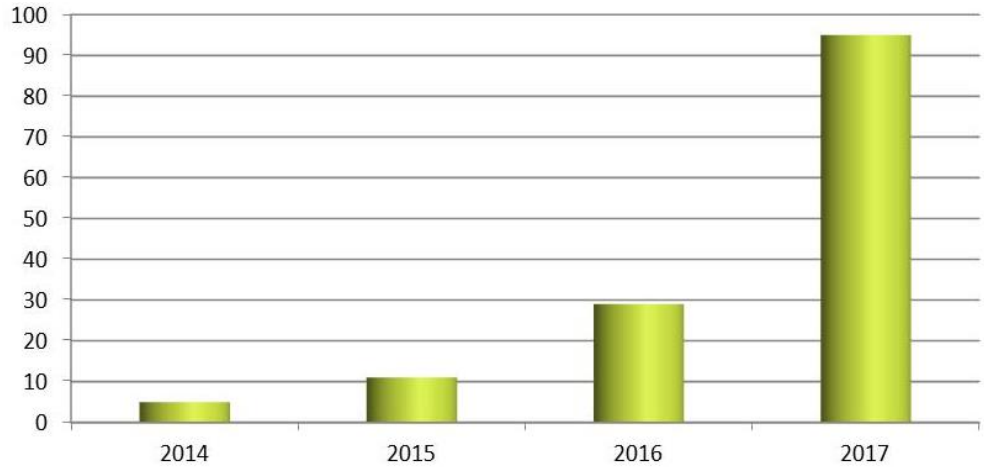
Figure 4 Uptake of PV solar panels and solar hot water systems in Tasmania



Source: Australian Government Clean Energy Regulator

While still in its infancy, the following chart illustrates the take-up of battery storage in Tasmania (as part of new solar panel installations).

Figure 5 Uptake of battery storage in Tasmania (cumulative)



Source: Australian Government Clean Energy Regulator

The rapid uptake of this technology has had some unintended consequences for distribution networks and customers alike. As we expect this growth to continue, it is important for us to be able to identify these customers and ensure we have appropriate tariff arrangements in place.

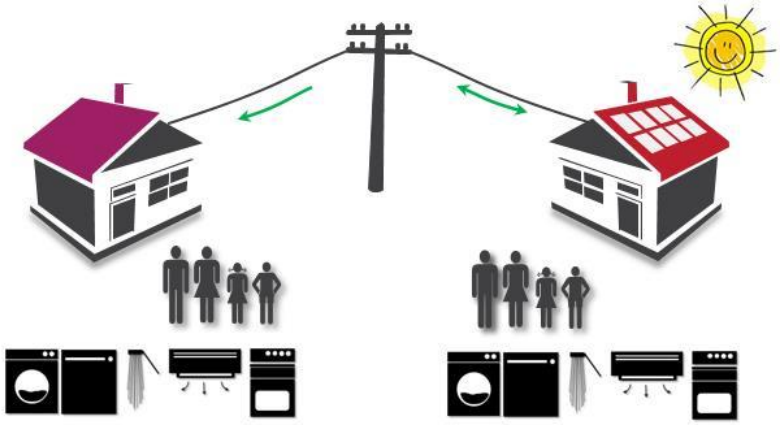
Network costs are largely driven by the maximum load that has to be met, with the demand for electricity in Tasmania peaking during winter on weekday mornings and evenings. Solar panels rarely

[3] Includes air-source heat pump hot water systems

generate much electricity at those peak times, and solar panel owners can put as much load on the network at those times as everyone else. Yet, under flat, consumption based network tariffs these customers are charged less for their use of the network. This is because our network tariffs, like the retail tariffs they evolved from, have been based on energy consumed, and solar panel owners typically consume less energy from the electricity grid.

The following illustration (Figure 6) shows two households with the same composition, the same appliances, same energy use and the same maximum demand – that pay very different amounts for their network services, despite being on the same flat-rate network tariff and having the same network capacity requirements at peak times. The difference is that one house has solar panels, and because the network tariff is a flat, consumption based tariff, factors like demand or time of use aren't taken into account when calculating either household's network charges.

Figure 6 One of the unintended outcomes of DER



Consumption	7,370 kWh p.a.	Consumption (total)	7,370 kWh p.a.
Maximum demand	4.5kW at 8am during winter	Maximum demand	4.5kW at 8am during winter
Power sourced from the grid	7,370 kWh	Power sourced from the grid	4,450 kWh
		Solar generation	2,920 kWh
Network charges (billed to retailer by TasNetworks)	**$794**	**Network charges** (billed to retailer by TasNetworks)	**$496**

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, even while placing the same demand on the network.

Further, as the concentration of solar panels has increased, the intermittent and variable nature of the power they generate causes power quality issues for the network, bringing with it the risk of damage to customers' appliances or network infrastructure. This has required components of the network – often transformers – to be upgraded in order to preserve a safe and compliant power

supply for all customers. However, the costs of upgrading the network haven't been recovered from customers with solar panels, but have been borne by the wider customer base.

Customers who generate their own electricity and take less energy from the network should pay less for energy in the bill they receive from their 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.

DER are going to be an important part of Tasmania's energy sector solution in the decades to come and an important part of TasNetworks' role is to facilitate its uptake in a way that maintains a safe, reliable and affordable service that does not disadvantage customers without DER.

Our distribution network makes it possible for customers who generate more electricity than they need to 'sell' their excess to other customers via the network. The network also provides a reliable source of 'backup' energy when the sun isn't shining or the wind isn't blowing.

In a changing energy sector, we must respond to the customer uptake of DER and make it possible for them to be integrated with our network. The work we have done with Energy Networks Australia and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) on the Energy Network Transformation Roadmap highlights the potential opportunities to purchase services from DER customers to reduce long-term network upgrade costs. Our aim is to ensure that customers with DER can benefit from their investment, including by providing network support services – without the rest of our customers incurring the cost.

With solar panels – and battery storage – becoming more affordable, a key part of our distribution pricing strategy over the five year period covered by this TSS will be developing a greater understanding of how DER can be deployed in ways that benefit, rather than disadvantage, the network and other customers who do not have DER. The next section of this TSS discusses some of the innovative projects and tariffs that TasNetworks is working on to do just that.

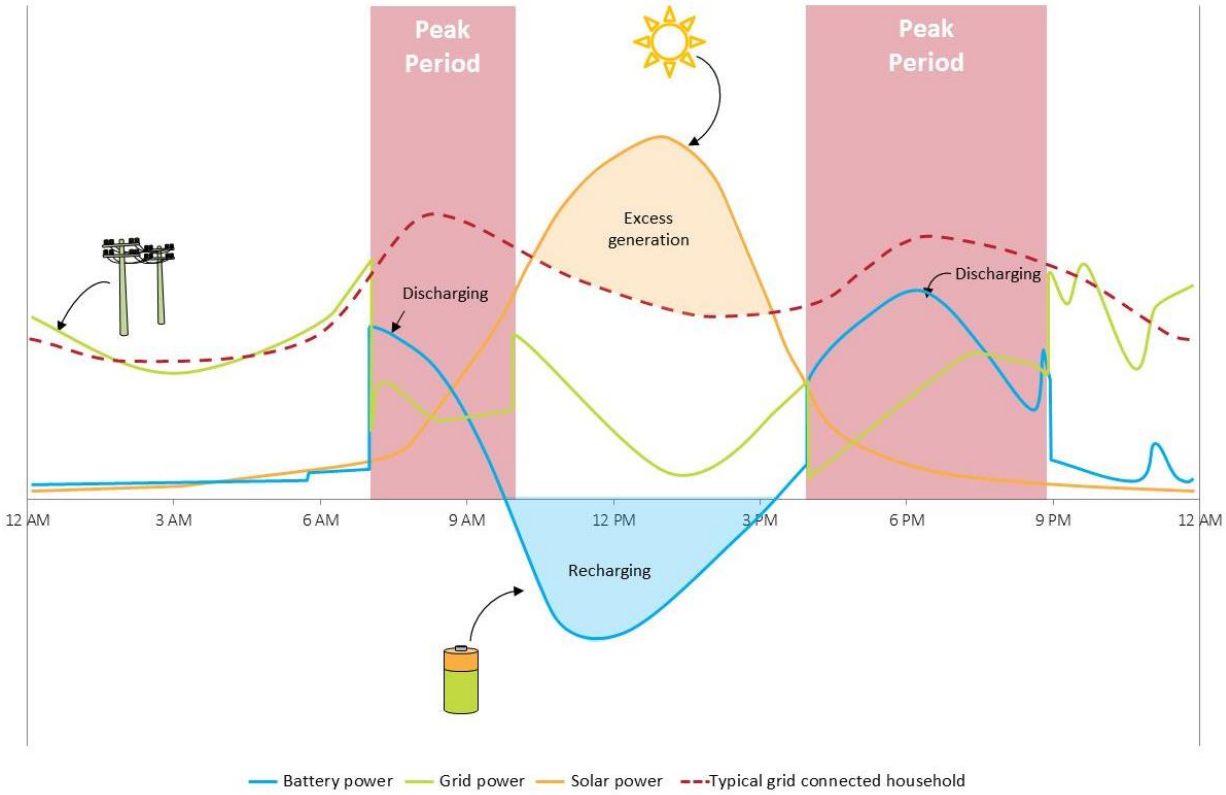
Distributed Energy Resource case study

We are undertaking a trial of solar panels and batteries in around 40 homes on Bruny Island, as part of the CONSORT group, along with Reposit Power and a number of universities, including the University of Tasmania. This trial is already providing valuable insights into the potential for customers to manage their electricity usage and control their electricity costs using DER – while also using these resources to benefit our electricity network and other customers.

The homes on Bruny Island who are participating in the trial have been provided with subsidised photovoltaic solar panels. When combined with battery storage, the energy generated by customers using their solar panels can either be used for their own immediate use, stored for later use or exported back to the network. And when batteries are used together with advanced energy management software, the release of electricity from the batteries can be timed to decrease the demands placed on the undersea power cable supplying Bruny Island and/or respond to time of use pricing signals. This has the added benefit of reducing the use of diesel generators on the island during peak season and even potentially delaying the need to upgrade the expensive undersea cable, therefore reducing network costs for all customers.

Figure 5 (below) compares a typical weekday demand profile for residential customers that rely on the network to supply all of their electricity with the average daily load profile for a sample of the residential customers participating in the Bruny Island Battery Trial.

Figure 7 Household load profile with and without distributed energy resources



The energy management software provided to participants in the trial has been configured to respond to time of use pricing signals, based on the peak and off-peak periods which are a feature of our new consumption and demand based time of use network tariffs for residential and small business customers.

Figure 5 shows that when the morning peak period begins at 7am (as per our residential time of use consumption and demand based network tariffs), the Bruny Island trial participants are discharging energy from their batteries, significantly reducing the energy that they draw from the network, when the network charges which apply are at their highest.

Then, as the sun reaches the right angle for the customers' solar panels to start making a significant contribution towards their electricity needs, the chart shows the energy being drawn from the customers' batteries reducing. When the morning peak period concludes at 10am, there's a brief spike in the amount of power being taken from the grid, before the output of the solar panels increases to the point where virtually no power is being sourced from the grid, and the excess energy being produced by the solar panels is being used to recharge the batteries.

As the beginning of the evening peak period at 4pm gets nearer, the energy being produced by solar panels is in decline and the amount of power being sourced from the grid begins to increase – until the batteries are deployed again at 4pm to reduce the energy being supplied from the grid. The chart shows customers continuing to draw on their batteries until 9pm, when the evening peak period ends

and the overnight off-peak period, with its lower network charges, begins, making electricity from the grid more attractive again.

From this we can see the ability of the batteries to not only reduce the consumption of energy from the network in outright terms, but to significantly reduce the amount being drawn at peak times, potentially reducing customers' network charges while at the same time placing less pressure on an already constrained part of the network.

At the time of writing, the Bruny Island Battery trial is only in its early stages. The lessons being learned from the trial are already influencing the design of our network tariffs for the future and our pricing strategy, and in the longer term will potentially inform our network planning.

Tariffs for new energy, new technologies and new customer types

Since the approval of our 2017-19 TSS, we are already seeing customers adopt new technology and know that the future will see new types of customers and technologies connecting to our network.

This 2019-24 TSS introduces cost reflective tariffs for customers who invest in DER, designed to ensure that customer investments in new energy technologies allow these customers, and other customers, to reduce energy network costs rather than increasing them.

We will introduce these DER tariffs from 1 December 2018, to coincide with the end of the 'grandfathered' feed-in-tariff. The grandfathered tariff applies to customers with photovoltaic solar panels who applied to connect their solar panels before 31 August 2013 and had them installed before 31 August 2014. If retailers take up this network tariff offering, it will provide for customers who currently have access to the Grandfathered Feed-in-Tariff (FiT) or Transitional FiT Rate[4] with alternative tariffs to consider as they transition to the lower Fair and Reasonable FiT[5] arrangements.

Introducing tariffs for customers who install DER will allow us to:

- provide price signals to encourage these customers to use their DER to reduce their peak load or shift demand to off-peak periods, thus minimising their own network charges while avoiding increasing costs for us and all our customers; and
- identify these customers, so we can start learning how to best integrate their energy use, energy export and network support capabilities into our own network operation practices. This will help us tailor our services and lower our costs over time which thereby means lower prices for all customers in the future, relative to the case where these technologies are not used efficiently or optimally integrated into the network.

Initially, both tariffs (one for residential and one for small business customers) will be offered on a discounted basis, to provide economically-justified incentives to encourage take-up of the new tariffs on an opt-in basis, while complying with our obligation under the Rules to treat micro generators 'no less favourably' than other users.

[4] The Transitional FiT Rate expires 1 January 2019 - http://www.economicregulator.tas.gov.au/electricity/pricing/feed-in-tariffs

[5] http://www.economicregulator.tas.gov.au/electricity/pricing/feed-in-tariffs

The tariffs will be set at levels equivalent to the new demand based time of use tariffs we introduced in 2017, which feature reduced prices at off-peak times but high prices at peak times. The new tariffs are designed to encourage customers to avoid running lots of appliances at once, to draw on battery storage at times of peak demand for the network or switch their demand to off-peak periods to reduce their network charges.

To encourage uptake of new demand based tariffs we will further discount the off-peak demand charge for a fixed period. Our proposed approach to discounting (both the level and period that it will apply to) was discussed with our Pricing Reform Working Group (PRWG) and our proposed tariff design is further outlined in Section C3.

We propose applying the same discounting arrangements to the cost reflective time of use demand tariffs introduced in 2017 to further incentivise their uptake as well.

With the goal of cost reflectivity in mind, the discounts will be offered on a transitional basis only, and will decline progressively over the course of the 2019-24 TSS period, to the point that no discounts will be offered from 1 July 2024.

TasNetworks will fund the discount cost directly, meaning that the cost of offering the discounts will not be passed on to other customers. This strategy means that TasNetworks is likely to recover less than the annual revenue allowances set by the AER for the 2019-24 regulatory period, depending on the level of take-up of the new tariffs. Unlike the under or over-recoveries of revenue which sometimes occur due to factors like variations in annual consumption when compared to the forecasts that inform our price setting, any under-recoveries which are attributable to the discounting of these new tariffs will not be recovered in subsequent years. Along with the concept of the discount, the funding of the incentive by TasNetworks was also tested with the PRWG.

Embedded networks

Embedded networks are private networks which serve multiple premises and are located within, and connected to a distribution network through a 'parent' connection point. Common examples of embedded networks include shopping centres, retirement villages, caravan parks, apartment blocks and office buildings.

Embedded networks are commercial ventures that seek to aggregate multiple customers downstream of a single network-connection (or boundary/parent meter). They can take their energy from our network in bulk or, in the case of micro grids, source and supplement this with their own generation.

Embedded networks present a number of potential benefits for the owner and members of the embedded network. The ability to combine the electricity consumption of a number of end users gives the embedded network greater scale and, therefore, potentially increased bargaining power when negotiating power prices with electricity retailers than members would have individually. This means that the embedded network operator can purchase electricity 'in bulk' from a retailer and then on sell it to the members of the embedded network at a price that may still be cheaper for the end users.

Having a single or small number of connection points between an embedded network and the distribution network also means that the embedded network is likely to pay less in the way of network connection charges than the members of the embedded network would if they each had

their own connection with the network. Again, this represents a potential saving for the members of the embedded network. Therefore, without a purpose designed tariff for embedded networks, the members of an embedded network potentially avoid making a cost reflective or equitable contribution towards the cost of the distribution network. Those avoided costs end up being borne by other customers.

TasNetworks recognises that the operator of an embedded network should be charged less for their single connection to our distribution network than the embedded network's customers would be charged collectively if they each had their own connection to the network, in part because we avoid the costs associated with providing all those smaller connections.

In their report to the Australian Energy Market Commission (AEMC) regarding implementation of the Commission's recommendations relating to embedded networks[6], Minter Ellison described bespoke embedded network tariffs as a practical impediment to access retail competition by embedded network customers. However, without purpose designed network tariffs for embedded network operators, the members of an embedded network could potentially avoid making a cost reflective or equitable contribution towards the cost of the distribution network that supplies the embedded network of which they are part. Those avoided costs would end up being borne by other customers, effectively creating a cross-subsidy – hence our plans to offer embedded network tariffs.

We are proposing to introduce two embedded network tariffs, one for customers connecting at low voltage and the other for embedded networks connecting to the distribution network at high voltage. The tariffs will both comprise a service charge, as well as peak and off-peak demand based charges. The service charge will adjust based on the number of downstream connections within the embedded network. It is worth noting that the use of embedded networks has not been as widespread within Tasmania as it has been in other jurisdictions with the NEM. The price levels of these new tariffs will evolve as more analysis of the load and connection characteristics of prospective embedded networks in Tasmania is undertaken. The following diagram illustrates the likely structure of the proposed embedded network tariffs.

Figure 8 Proposed demand based time of use tariff structure for embedded networks

Introducing dedicated tariffs (high and low voltage business network tariffs) for embedded networks will ensure we have suitable tariffs that protect equity outcomes for all of our customers, while still offering embedded network owners and their customers the scope to reduce their network charges

[6] "Review of regulatory arrangements for Embedded networks – Implementation of recommendations in Draft Report" for the Australian Energy Market Commission

Minter Ellison, 20 November 2017

overall. This will provide proponents of this alternative energy supply model with consistent, predictable price signals about the value of their network connection, making it easier to weigh up the costs and benefits of setting up an embedded network.

Advanced meter deployment in Tasmania and data availability

Changes to the regulatory framework for metering commenced in December 2017 to support the rollout of advanced meters in Tasmania, and across all states and territories in the National Energy Market (NEM). These changes mean that, at a minimum, over the 2019-24 TSS period we will see advanced meters deployed to new customers, customers whose meters need to be replaced and customers who choose to have an advanced meter installed by their energy retailer.

By 2024 we estimate that 31 per cent of households and 59 per cent of small business customers will have advanced meters. This projection is based on the estimated number of meter replacements based on meter age and historic trend data, forecast growth in customer numbers and customer demand for the innovative services and retail tariffs that advanced meters make possible. The uptake of advanced meters will:

- help us understand the usage characteristics of customers;
- markedly improve the availability of data for us to test and refine our tariff offerings and help us explain to customers the impacts of switching to more cost reflective tariffs;
- allow more of our customers to better understand how they use electricity; and
- allow customers to better understand how they can manage their electricity demand and use to save money.

Why are advanced meters being rolled out?

The AEMC made these changes to facilitate advanced meter deployment and expand competitive provision of metering and related services to all customers. Previously only large industrial customers were subject to metering competition.

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

We encourage customers to contact their Retailer to understand more about advanced metering arrangements in Tasmania.

What are we doing to help realise the benefits of advanced meters?

Our plans for implementing more cost reflective tariffs have regard to competitive metering changes and their timing. We recognise that advanced meters will support 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.

We have been undertaking our emPOWERing You Trial, which includes the deployment of off-market advanced meters, to support our ongoing pricing strategy development and implementation. During the trial we engaged with customers, rolled out advanced meters and collected data for some 600 households. Participants were provided with a web-based interface (or app) displaying their household consumption and demand. The data we captured is assisting us in:

- understanding, supporting and managing customer charge comparisons under different tariff structures;
- testing customer communication and education processes, to help us establish the most effective methods to support customers and retailers during this transition; and
- building community awareness of changing tariff offerings and advanced meter benefits.

Our emPOWERing You Trial will help us share customer stories with the Tasmanian community and build awareness about electricity usage and prices for our customers.

We will continue to look for opportunities to conduct further trials in the 2019-24 TSS period where these will allow us to learn more about specific customer types and test fit-for-purpose pricing solutions. For example, for constrained feeders it may be helpful to test having rolling peak and off-peak periods that cycle different customers in a given location—to get the best utilisation of our available capacity at that location and avoid costly augmentations. We are also investigating options for a trial involving irrigation customers, focussing on both demand side management and tariff options.

What are the costs associated with the roll-out of advanced meters?

Under the AEMC's reforms, retailers are required to assume the responsibility for delivering and maintaining advanced meters, including the costs associated with the installation and operation of advanced meters. For Tasmanian customers with standing offer pricing, the Tasmanian Economic Regulator sets the framework for customer electricity tariffs, including metering costs.

The mandatory introduction of advanced meters from 1 December 2017 has implications for TasNetworks' metering charges during the 2019-24 TSS period. This is because the Type 6 meters that have been used in Tasmania, some of which will have been deployed only very recently, are likely to end up being retired from service before they reach the end of their normal operating life. As a result, it is prudent to accelerate the recovery of the regulated metering asset value, to reflect the expected shorter average remaining life, and to reduce the number of customers paying both a capital charge for a retired regulated meter and a charge for a new advanced meter.

We are proposing to fully recover our regulated metering capital costs by June 2024. This will be achieved by applying an accelerated rate of depreciation when deriving the capital charge for metering services. In this way, the costs of our existing metering assets will be recovered over a period that reflects their shortened economic life.

Under our proposal, there will be an increase in metering capital charges during the 2019-24 TSS period. It is estimated that the metering charges applying to a single phase Type 6 meter used by a small business or residential customer will increase from around $12[7] per year in 2018-19 to around

[7] Real 2018-19 dollars

$22 per year from 2019-20 to 2023-24. However, while metering charges will increase during the 2019-24 TSS period, for any Type 6 meters that remain in use at 30 June 2024, there will be no further capital charge. Thereafter, customers will experience an ongoing reduction in their metering charges, to reflect only the regulated service operating costs, until such time as their meter is replaced, via their retailer, with an advanced meter.

Continuing what we started in the 2017-19 TSS

Gradually removing cross subsidies between types of customers

As identified in our 2017-19 TSS, a number of TasNetworks' tariffs include a discount compared to the general tariff applied to that type of customer. These discounted tariffs are:

- Business Low Voltage Nursing Homes tariff (TAS34[8]);
- General Network – Business Curtilage tariff (TASCURT[9]); and
- Uncontrolled Low Voltage Heating tariff (TAS41).

These discounts are the result of historical policy settings, which are no longer consistent with the current regulatory requirements. As approved by the AER in our 2017-19 TSS, we plan to continue to align these network tariffs with the general tariffs applied to other similar customers. Given there are no discernable differences in the demands that the customers on these discounted tariffs place on our network compared to customers on general tariffs, maintaining these discounts results in the customers on the discounted tariffs being cross subsidised by other customers.

The aim of the realignment is for each component of these tariffs to achieve parity with the equivalent tariffs that apply to other customers. To achieve this, we will gradually adjust each tariff component until they are aligned. There will be no sudden abolition of these discounted tariffs. The realignment process which we started in our 2017-19 TSS, and will continue in the 2019-24 TSS, comprises the following measures for each tariff.

- The Business Low Voltage Nursing Homes tariff (TAS34) is being aligned with the Business Low Voltage General tariff (TAS22). The service charge and the first consumption band are already aligned, with alignment of the remaining consumption band to occur over the next one to two years.
- The Business Curtilage tariff (TASCURT) is being aligned with the Business Low Voltage General tariff (TAS22). This process has been underway for a number of years already, with the discount having reduced each year since 2008. The consumption component is already aligned between the two tariffs and we expect the service charge component of the tariffs to be aligned by 2019-20.
- The Uncontrolled Low Voltage Heating tariff (TAS41) currently provides customers with significantly discounted network charges for hard-wired space heating and hot water. We will continue to gradually rebalance the price of this discounted tariff with the Residential Low Voltage General (TAS31) tariff, in recognition of the demands that heating loads place on our network. Customers can only access TAS41 if they also have TAS31, and over time the charges under both tariffs will be the same.

We are still aiming for discounted tariffs to be completely realigned by the end of the 2024 - 2029 TSS period. However, we may seek to rebalance the tariffs more quickly if revenue determinations, inflation levels and customer charge impacts allow.

8 TAS34 is no longer available to new customers

9 TASCURT is no longer available to new customers

Summary of tariff structures

The figure below (Figure 9) shows the current and future state charging structures applicable to each tariff class. For all our new tariffs introduced since 1 July 2017, we now offer default monthly billing to the customer's retailer, although it is up to the retailer whether they elect to bill the customers on those network tariffs monthly.

Figure 9 Current to future state charging structures

Current state

Tariff components	Residential	Small business	Controlled	Uncontrolled	Large business (LV)	Large business (HV)	Irrigation	Unmetered supply
Demand					✓	✓		✓
Time of use (consumption)	✓	✓				✓	✓	
Consumption	✓	✓	✓	✓	✓			
Service	✓	✓	✓	✓	✓	✓	✓	

Future state

Tariff components	Residential	Small business	Controlled	Uncontrolled	Large business (LV)	Large business (HV)	Irrigation	Unmetered supply
Demand (Time of Use)	✓	✓			✓	✓	✓	
Demand								✓
Time of use (consumption)	✓	✓					✓	
Consumption	✓	✓	✓	✓	✓	✓		
Service	✓	✓	✓	✓	✓	✓	✓	
Temporary Off-Peak Demand Incentive Rate	✓	✓						

Over the forthcoming regulatory period, we intend reviewing the impact that the new tariffs and charging structures have on customers and our revenue. Customer consultation is an important part of our ongoing tariff reform journey. We will continue to work with our PRWG and other stakeholders to test and refine our pricing strategy. This information will help inform whether our tariff structures are fit for purpose.

Structure of this TSS

This TSS is set out in three parts:

1. Sections 2, 3 and 4 deal with our core network energy delivery service (called standard control services under the Rules) and they respectively set out:
    a. Our tariff designs including tariff classes, structures and charging parameters.
    b. How we set our tariffs.
    c. How customers are assigned to tariffs and the choices that this offers them.

2. Section 5 provides our tariff designs and basis of charge setting for services that are ancillary to our core network services (called alternative control services under the Rules).
3. Section 6 provides helpful references for customers wanting to learn more about the development and application of our charges, while Section 7 provides a checklist setting out how we have complied with the Rules when preparing and submitting this TSS.

2 Tariff classes, structures and charging parameters for standard control services

What are standard control services?

'Standard control' refers to an approach taken by the AER to the regulation of network charges which involves the use of a cap on the amount of revenue that we are permitted to recover from our customers each year. The AER classifies the generic distribution network services which are relied on by most (if not all) customers, including the provision of complex connections to our distribution network, as standard control services.

The annual revenue allowance applying to our standard control services is recovered through general network charges (network tariffs), and pays for the building, running and maintenance of the electricity distribution network. We apply a service charge to every connection to our network so that every household, business and organisation connected to the network makes a contribution towards the cost of the network service available to them, regardless of how much or how little electricity they use.

Because the amount of revenue we recover from our customers through general network charges (tariffs) is capped by the AER, we cannot recover more or less revenue in total from our customers. This is regardless of variations in customer consumption of electricity or the network tariffs they've been assigned to or, where possible, chosen through their retailer. Each year we 'true-up' our revenue allowance and the revenue recovered from our customers for that year, and adjust future year prices to account for the difference.

What charging methods do we use?

When designing tariffs, there are four general types of tariff components which can be weighted, measured and combined in different ways to provide a wide range of possible tariff structures. Different charging parameters are used to create a complete tariff. These are summarised in the table below.

Table 1 Network tariff components

Component	Description
Service Charge	$/time period (cents per day charge) which does not change with usage, demand or capacity.
Consumption Charge (usage)	$/time period (actual usage, for example kWh) based on consumption during the billing period. Consumption charges may vary with time of day or season, charges are based on the total level of usage within the defined billing period.

Component	Description
Demand Charge	$/kW or $/kVA (actual) based on either: • The actual demand within the defined charging windows in a billing period • The average of the four highest 30 minute demand periods within the defined charging windows in a billing period. Demand charges may vary with the time of day or season, with charges being based on demand recorded within the defined billing period.
Specified Demand Charge	$/kW or $/kVA (agreed) based on agreed maximum demand for a defined billing period, not actual demand. A customer pays for capacity made available, rather than necessarily used. Capacity charges may vary with time of day or season, with the charge based on capacity within the defined billing period.

In addition to deciding on the components which make up our various network tariffs, for some tariffs we must also set the time periods that apply to any tariff components which take time of use into account. For most customer classes, these periods typically reflect the level of demand collectively being placed on the electricity network by all customers because, in the long term, the cost of providing the network is driven by having to build and replace the network to adequately cater for peaks in demand.

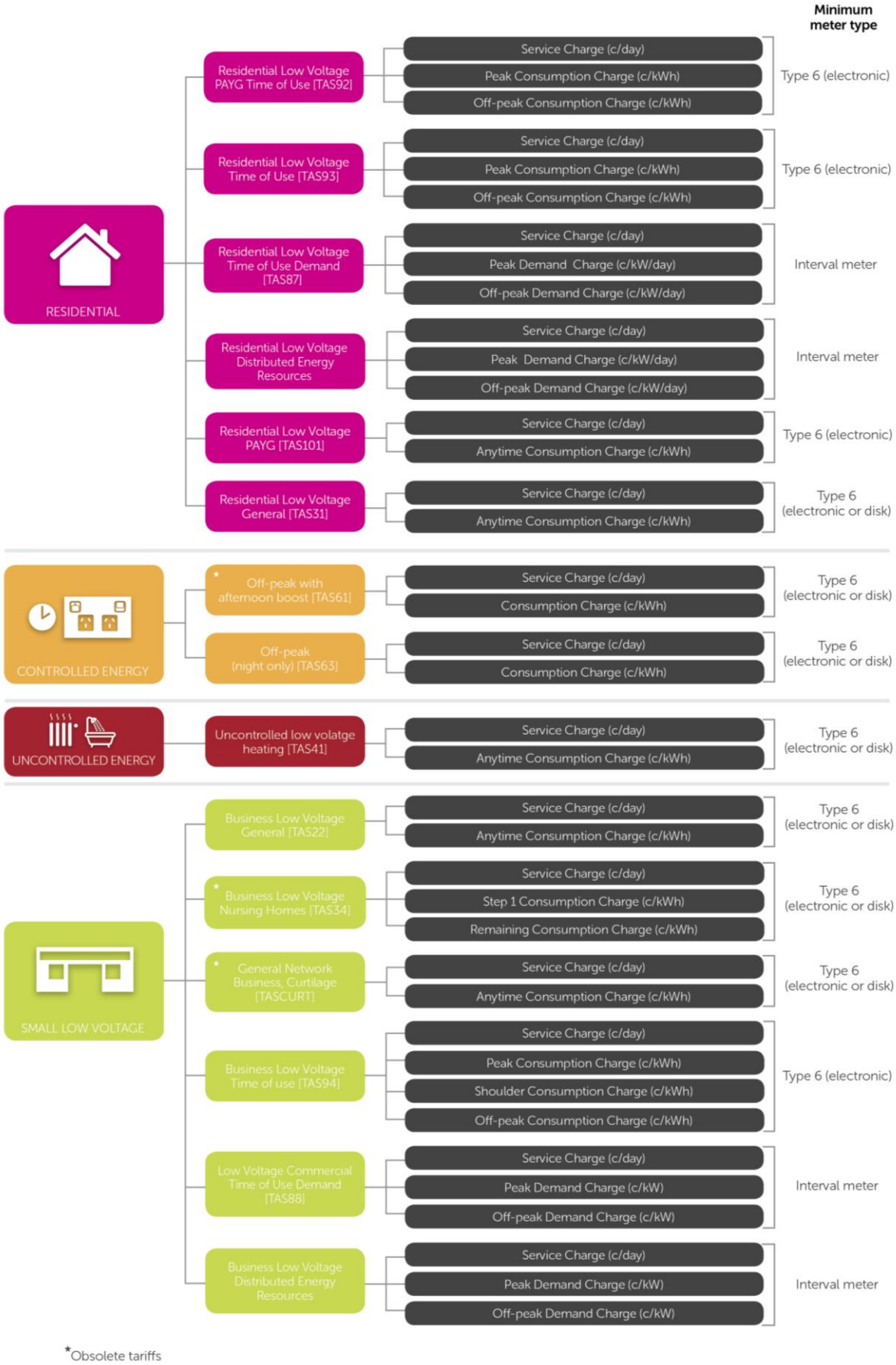
We set the time periods applying to tariff components with a time of use element by looking at our system load profiles to work out when in the day, week or year our system typically experiences peak loads or capacity constraints. Time can then be divided into peak, shoulder or off-peak periods, and different prices applied to the use of the network during those periods.

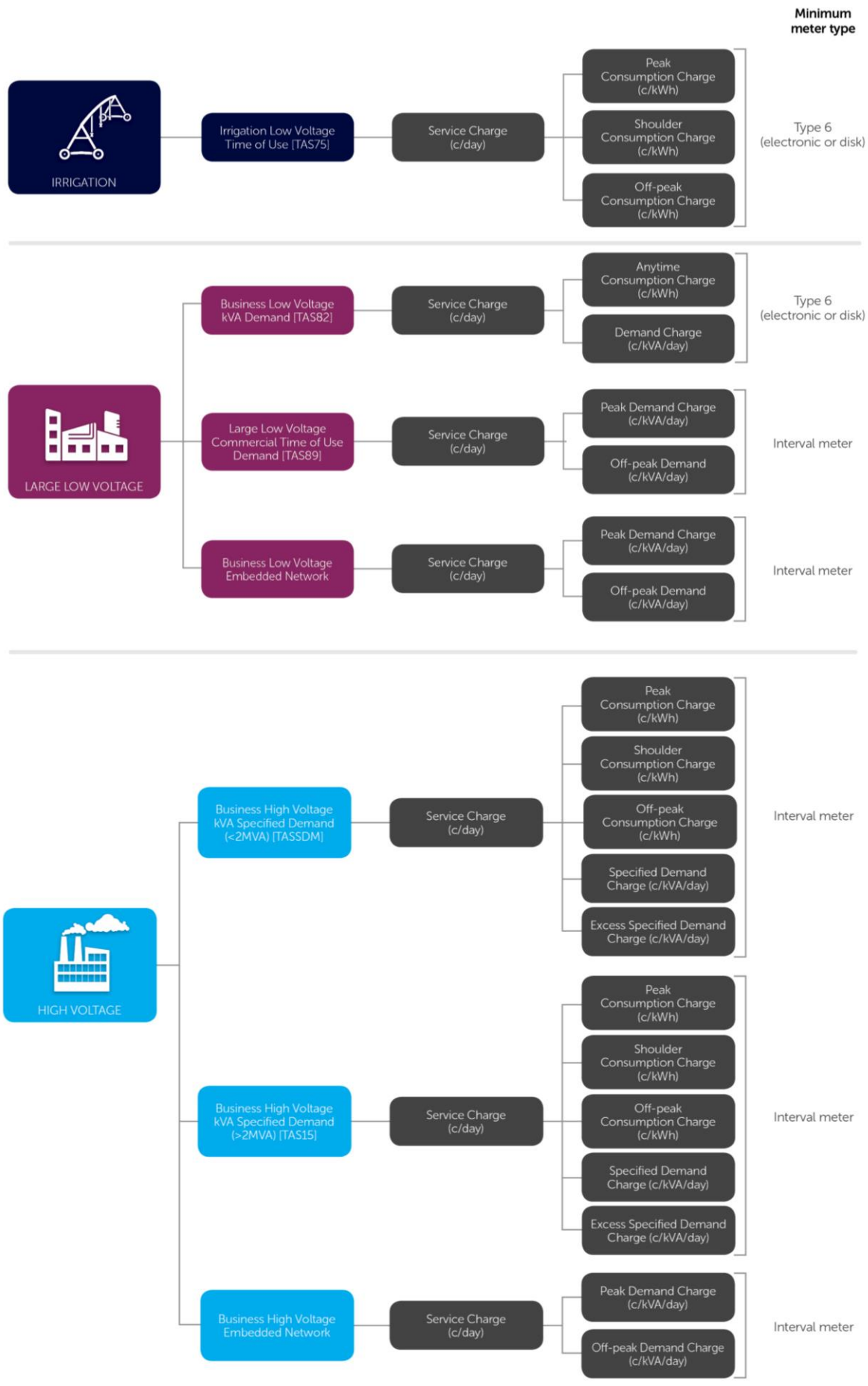
Our network tariffs and charging structures

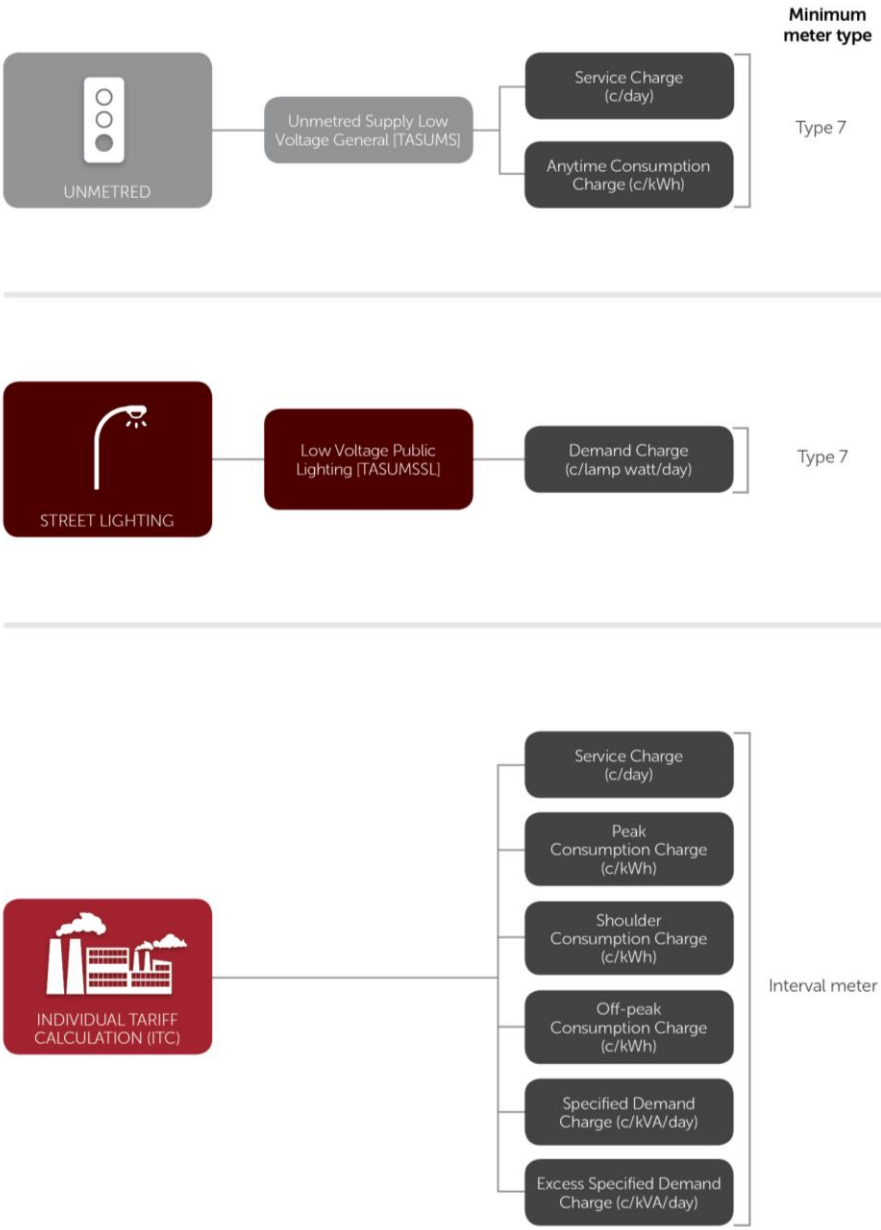
The figure below (Figure 10) provides a summary of the tariff classes for standard control services which will apply to our residential and small business customers, along with the associated tariffs and tariff components. Further detail on our tariffs and customer eligibility is provided in Appendix A.

Indicative prices for tariffs for the period 2019 to 2024 are set out in the Indicative Pricing Schedule provided in Appendix B.

Figure 10 Tariff classes, structures and charging parameters




Minimum meter type
IRRIGATION
Irrigation Low Voltage Time of Use [TAS75]
Service Charge (c/day)
Peak Consumption Charge (c/kWh)
Shoulder Consumption Charge (c/kWh)
Off-peak Consumption Charge (c/kWh)
Type 6 (electronic or disk)
LARGE LOW VOLTAGE
Business Low Voltage kVA Demand [TAS82]
Service Charge (c/day)
Anytime Consumption Charge (c/kWh)
Demand Charge (c/kVA/day)
Type 6 (electronic or disk)
Large Low Voltage Commercial Time of Use Demand [TAS89]
Service Charge (c/day)
Peak Demand Charge (c/kVA/day)
Off-peak Demand (c/kVA/day)
Interval meter
Business Low Voltage Embedded Network
Service Charge (c/day)
Peak Demand Charge (c/kVA/day)
Off-peak Demand (c/kVA/day)
Interval meter
HIGH VOLTAGE
Business High Voltage kVA Specified Demand (<2MVA) [TASSDM]
Service Charge (c/day)
Peak Consumption Charge (c/kWh)
Shoulder Consumption Charge (c/kWh)
Off-peak Consumption Charge (c/kWh)
Specified Demand Charge (c/kVA/day)
Excess Specified Demand Charge (c/kVA/day)
Interval meter
Business High Voltage kVA Specified Demand (>2MVA) [TAS15]
Service Charge (c/day)
Peak Consumption Charge (c/kWh)
Shoulder Consumption Charge (c/kWh)
Off-peak Consumption Charge (c/kWh)
Specified Demand Charge (c/kVA/day)
Excess Specified Demand Charge (c/kVA/day)
Interval meter
Business High Voltage Embedded Network
Service Charge (c/day)
Peak Demand Charge (c/kVA/day)
Off-peak Demand Charge (c/kVA/day)
Interval meter



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

3 Network tariff setting process

Objectives

Our overall aim is to set each element of our tariffs so that we can provide our customers with appropriate signals about how and when their use or sharing of energy impacts on our costs. In this way, over time, customers might change the way they use electricity – drawing less from the network at times that add to peak demand, helping to lower network costs for all customers in the future.

Our network costs are largely fixed, with variable costs being limited to the investment we must make to provide capacity for peak periods of network use or to connect new customers to the network. In this context:

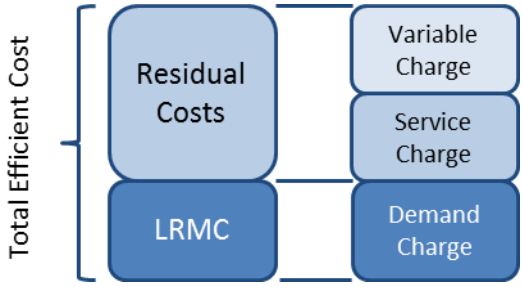
- Our service charges for each tariff are designed to recover the fixed costs that arise from the connection and management of each customer. This sends a consistent and predictable price signal to customers about the value of their network connection, which assists customers when making decisions about investments in electricity generation, storage and/or control technology. The service charge can also be used to recover part of the shared network costs (residual unavoidable costs) where those costs are not recovered entirely through demand or volumetric charges.
- Our volume based charges are designed to recover the costs of the shared network on a basis which reflects how our customers use the distribution network. Over time we will be reducing our reliance on consumption based network charges and moving towards a greater reliance on 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 at the peak times that drive our variable costs. We are in the process of transitioning so that our demand based network charges are fully reflective of our underpinning long run marginal cost estimates.

Methodology

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

We determine the target network tariff parameters by:

- Estimating the total efficient cost ($) for each tariff;
- Estimating the long run marginal cost ($/kVA or $/kW) for each tariff;



- Determining the required long run marginal cost revenues ($) for each tariff;
- Calculating the residual costs ($), being the difference between the total efficient cost and the revenues for each tariff based on long run marginal cost; 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 tariff. In terms of the demand based time of use tariffs, most of the residual costs are recovered via the service charge and the off-peak demand charges.

In the medium to long term, our goal is to offer all customers network tariffs which are fully cost reflective and satisfy the Rules' requirement that tariffs be based on long run marginal cost and total efficient costs. For historical reasons, not all of our existing tariffs currently meet these targets and so we are transitioning those tariffs towards full cost reflectivity. We are doing this gradually over time for a number of reasons, including the avoidance of price shocks for our customers.

The checks and balances that we apply to the process of tariff adjustment include:

- the requirement that overall forecast revenue in any year, when summed across the tariff classes, is no more than the revenue allowance approved by the AER, after allowing for any under or over recoveries in prior years, adjustments for actual inflation and pass-throughs;
- a requirement that the annual percentage changes in individual tariffs are within the side constraints set out in the Rules;
- a requirement that the revenue for each tariff class must lie between the stand alone and avoidable costs of servicing that tariff class;
- the principle that the revenue for each tariff is at, or moving towards, recovery of the total efficient cost for that tariff; and
- the principle that, where applicable, the demand component of the tariff is at, or moving towards, recovery of the long run marginal cost for that tariff.

Long run marginal cost

It is a requirement under the Rules that our tariffs must be based on the long run marginal cost of servicing the customers assigned to each tariff. 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 main driver of our network costs is meeting maximum demand. Setting tariffs that reflect a customer's maximum demand at times of system peak usage, based on long run marginal cost, will provide our customers with a cost reflective price signal that encourages efficient electricity use and will ensure those customers who drive our costs pay a fair share of those costs.

We base our long run marginal cost on the average incremental cost method. This approach uses information that is currently available for the revenue determination and planning processes (the same program of work underpins our calculations as discussed in our regulatory proposal). The approach is also consistent with the approach adopted by all other distribution networks and was approved by the AER in our 2017-19 TSS. It is generally considered to be well suited to situations where there is a relatively consistent profile of investment over time to service growth.

We aim to set our tariffs in a way that supports cost reflectivity and the Rules' requirement that tariffs be based on long run marginal cost and the recovery of our total efficient costs. Reaching these cost reflective targets involves a different approach for legacy tariffs compared to new ones.

- *Legacy tariffs* | Not all of our tariffs currently achieve our pricing objectives, in that they recover less than the cost of providing the service, which also means that the recovery of some of those costs will have been shifted to other tariffs. These tariffs are being transitioned to full cost reflectivity over time, in order to avoid price shocks for our customers. Each year we aim to incrementally transition our legacy tariffs closer to the target tariff parameters.
- Nonetheless, noting the historical basis of many of TasNetworks' legacy tariffs, the AER has indicated that it is supportive of an approach to setting our legacy tariffs that involves greater use of residual cost recovery when compared with more cost reflective pricing structures.
- *New tariffs* | Any tariffs introduced since the commencement of the Rules' pricing principles have been designed to satisfy the Rules' requirements regarding cost reflectivity from the outset. To encourage customer uptake of our more cost reflective tariffs, however, these new tariffs recover relatively smaller shares of our residual costs than our less efficient legacy tariffs. This is a transitional approach that will be reviewed as the cost reflective tariffs become the dominant means of recovering the cost of providing and operating the network from our customers.

Appendix C explains how we have estimated our long run marginal cost, the resulting estimates, and how we used these in designing our cost reflective tariffs.

Annual pricing proposal

Each year we submit an annual pricing proposal to the AER (for its approval) detailing a range of required information on our tariffs and tariff classes, and showing how we comply with the Rules and the amount of revenue we are allowed to recover from our customers. The submission dates for our pricing proposals applying to the period covered by this TSS (2019 to 2024) are shown in the table below.

Table 2 Annual Pricing Proposal Submission Dates

Pricing year	2019-20	2020-21	2021-22	2022-23	2023-24
Pricing proposal lodged	21 May 2019	31 Mar 2020	31 Mar 2021	31 Mar 2022	31 Mar 2023

Our annual pricing proposals will explain how the movements in each of our tariffs between years are consistent with this Tariff Structure Statement. We will aim to set each tariff to be broadly consistent with the indicative pricing levels for that tariff set out in our Indicative Pricing Schedule at Appendix A. Our pricing proposals will demonstrate how each proposed tariff is consistent with the Indicative Pricing Schedule, or explain any material differences.

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. Our process for improving our pricing has involved us engaging extensively with end-use customers, retailers and stakeholders to test their preferences and get their guidance. This section summarises how we have engaged with those stakeholders and how we have responded to the feedback we received. Appendix D provides more detail on this.

This second TSS builds on our first TSS, which applies to the period 2017 to 2019, and the engagement that underpinned it. We are continuing the multi-period pricing plan established in that TSS, and have consulted on the additional new areas we are targeting in this TSS period, including new tariffs for emerging customer types.

TasNetworks presently delivers electricity to almost 285,000 Tasmanian households, businesses and organisations, and services the customers of multiple electricity retailers. The figure below provides a high-level breakdown of our distribution customers.

Figure 11 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, such as customer advocacy groups.

Retailers

As noted above, our customer base isn't restricted to end-users of the electricity we deliver over our distribution network, and includes electricity retailers. Currently, TasNetworks services the customers of five retailers in Tasmania. Despite the residential and lower end of the small business electricity market being opened to full retail competition in 2014, Aurora Energy remains the only retailer competing in those markets.

TasNetworks has sought to engage with all retailers on the subject of network tariff reform. However, given that most retailers in Tasmania service larger commercial customers for whom retail competition and cost reflective network prices have been in place for some time, not every retailer has taken up the offer. Aurora Energy has, therefore, been the main retail contributor to the development of our pricing reform plans since we began engaging with stakeholders on the subject in late 2014.

Aurora Energy have been offering a retail standing offer to residential customers since July 2016 which is based on our consumption based time of use network tariff (TAS93). We will continue to work with all electricity retailers to progress our pricing strategy and ensure that our new and adjusted network charges are incorporated into the retail tariffs offered to customers in the future.

While the new demand based time of use tariffs will initially only be available to households and small businesses on an opt-in basis via their retailer, subject to the level of advanced meter take-up in Tasmania, TasNetworks plans to begin billing retailers serving residential and small business customers on a cost reflective basis during the 2029-34 regulatory period. Whether those prices are passed on to the customer will then become a matter for the retailer to decide. However, the AER has indicated its support for this phased approach to network tariff reform, involving an initial customer-led transition to cost reflective network tariffs followed by assignment principles which support a faster pace of reform.

Pricing Reform Working Group

We have a core group of highly engaged pricing stakeholders who have been with us through our pricing strategy journey and as such represent an informed group who readily provide valuable feedback. They continue to guide the planning and implementation of our tariff transition. We established the TasNetworks Tariff Reform Working Group in 2014 to provide advice on customer needs and issues for our pricing strategy. We then renamed and expanded the group in 2016 to include greater business customer representation, although the majority of original members including electricity retailers, customer advocacy groups, and independent energy advisors have been retained. The renamed TasNetworks *Pricing* Reform Working Group provides a valuable forum where members can contribute to the direction of our pricing plan, provide feedback and act as an advisory group on pricing issues, including tariff reform.

Throughout 2017, this group met to:

- consider the preferred methodology for calculating a demand based time of use network tariff for low voltage customers;
- consider preferences in regard to the pace of tariff reform;

- consider options for incentivising a DER 'early adopter' tariff and other demand based time of use tariffs for low voltage customers;
- consider updated customer impact analysis and our draft 2019-24 TSS, based on indicative pricing information;
- provide feedback on our 2019-24 TSS; and
- hear about the early findings from our tariff trials (the emPOWERing You Trial), and feedback from the AER in its decision on our 2017-19 TSS.

The key customer feedback themes raised by our stakeholders include:

- it is important that we help the community transition to more cost reflective pricing;
- customers want TasNetworks to investigate innovative solutions to manage network resources and to invest in technology to get customers thinking about their usage; and
- there is an expectation that we continue to operate our business as efficiently as possible and drive good outcomes for customers today and into the future.

A detailed summary of feedback received is provided in Table 3, where we have set out the key issues raised by the PRWG, and other stakeholders, in relation to network tariff reform. The issues have been divided between the feedback received when we were developing our tariffs for the 2017-19 TSS period and the views expressed during the development of the 2019-24 pricing reform plans which are a feature of this TSS. For each issue, the table explains how we have responded to the guidance of stakeholders or sought to address their concerns.

Table 3 Issues raised by our customers and our responses

Issues relating to the 2019-24 TSS period

Customer feedback	Our response
Customers told us that they don't believe tariff reform should be delayed due to the overall benefit of efficient price signals. **Customer groups had different views on the pace of reform.**	A number of business stakeholders have suggested that we increase the pace of tariff reform by targeting specific customer types to remove long standing cross subsidies. Some customer advocates have been more overtly critical of the time being taken to phase out some long standing cross subsidies between and within tariff classes, arguing that the realignment of tariffs should be accelerated. The alignment of the *Uncontrolled Low Voltage Heating* tariff (TAS41) with the *Residential Low Voltage General* (TAS31) tariff is a case in point. Currently, the difference between the two tariffs is substantial, as a result of discounted retail tariffs offered in relation to home heating over many years. We will continue to listen to the range of views expressed by our customers and look to implement tariff reform as quickly as can be practically achieved. At the same time, we have to be mindful of the impact of pricing reform on all customers and we will continue to take the customer impact principle into account when making changes to our existing network tariffs. Our overarching pricing strategy remains, however, to continue the gradual transition to cost reflective pricing and network tariff structures. Careful

Customer feedback	Our response
	transition is needed to understand and manage customer impacts, particularly for vulnerable customers. Consideration also needs to be given to the sunk investments made by many customers in durable goods, like electric space heating, on the basis of the current charging arrangements, which have been in place, in many cases, for decades.
Will the demand based tariffs be too complicated for people to understand? A common theme amongst the customer and consumer groups we consulted with was the concern that demand based tariffs would lead to an increase in complexity, and that customers will find it hard to choose between different tariffs.	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. We will continue to provide demand based time of use tariffs as a choice for small customers in the 2019-24 TSS period. In response to general feedback, we have not introduced the additional complexity of seasonal charging into our new demand based tariffs. When evaluating two alternative demand based tariff structures, one with the demand charge based on a customer's highest demand recorded during a billing period and the other with the demand charge based on the average of a customer's four highest demand periods during the billing period, the PRWG thought the second alternative fairer for customers and that the increase in fairness outweighed the associated increase in complexity. This is discussed further in this table in response to the question "How will demand based network tariffs be calculated?" Through our emPOWERing You Trial we are learning how best to explain demand based tariffs to customers. We are also developing tools to help our customers compare network tariffs and understand what a change to a demand based tariff might mean for them.

Customer feedback	Our response
How will demand based network tariffs be calculated?	In the 2017-19 TSS period[10], we introduced demand based time of use tariffs as a choice for small customers, via their retailer. Retailers have started offering the new demand based charges to some business customers as a market offer. Those demand based tariffs consist of a daily service charge and two demand charges – one demand charge applying to usage in peak periods and the other to off-peak periods. In the 2017-19 TSS period, demand is measured as an average over 30 minute intervals, with customers charged for the highest demand recorded over the course of their monthly billing period in both the peak and off-peak periods. During our consultation for the 2019-24 TSS, we revisited demand calculation methodology options with our PRWG. Specifically we sought feedback regarding whether customers perceived a charge for the single highest demand recorded over the course of their monthly billing period (in both the peak and off-peak periods) as equitable. In response to the feedback we received, we propose to change our maximum demand calculation method for the 2019-24 TSS. Instead of charges being based on the highest demand recorded over the course of a monthly billing period in both the peak and off-peak periods, we propose to base the demand charges on the average level of demand measured in multiple periods (the highest four periods within the monthly billing period, for both peak and off-peak times).
The success of tariff reform is reliant on 'buy-in' from the State Government and retailers.	Our customers have told us they expect us to engage with our owner, the State Government, as well as with electricity retailers, to ensure that more cost reflective network pricing is offered to Tasmanian customers in future regulatory periods. Electricity retailers, in particular, have an important role to play in supporting network pricing reform, by ensuring that cost reflective network pricing signals are preserved in the electricity prices seen by all customers, rather than being bundled up as part of the delivered cost of electricity. For the new network tariffs to achieve the objective of effectively signalling network costs, the price signal must be visible to customers. To that end, we will continue to: • participate in the monthly joint pricing meetings convened by the Office of the Tasmanian Economic Regulator (**OTTER**); and • provide quarterly updates to the State Government about the content of PRWG meetings. We will continue to engage with Government and retailers to advance

[10] More information about the tariff reform options that were canvassed with our customers in 2015 can be found in the Consultation Paper, *DEMAND BASED NETWORK TARIFFS – OFFERING A NEW CHOICE*, which is available from the Tariff Reform section on our website.

Customer feedback	Our response
	network tariff reform in Tasmania, in the interests of all our customers.
We want TasNetworks to investigate innovative solutions to manage network resources and to invest in technology to get customers thinking about their usage.	Currently, we are undertaking various trials to help us learn how we can leverage technology to improve the customer experience and deliver increased value for all our customers. Our emPOWERing You Trial is one example of us looking for innovative ways to address network constraints and issues. The emPOWERing You Trial involves collecting interval metering data (in 30 minute blocks) from 600 customers in the Bridgewater, Brighton, Lower Midlands and surrounding areas, which is telling us how much energy these customers are using and when they use it. By using our Trial app or web portal, participants can see how and when they use electricity in their home, enabling them to make informed choices about their usage to suit their lifestyles and needs. We're also able to use the interval metering data to guide our network planning, as well as our pricing strategy. As part of a consortium involving Reposit Power and a number of universities – CONSORT – TasNetworks is also conducting a trial of solar panels and batteries in 40 homes on Bruny Island. The release of electricity from the batteries is being used to decrease the demands placed on the undersea power cable supplying Bruny Island and reduce the use of diesel generators on the island during peak season. Using advanced energy management software, participants in the trial are also able to optimise the use of the power their solar panels produce, by applying it to their own immediate use, storing it for later use or selling it back to the network. Both trials provide opportunities to investigate innovative approaches to managing our network and getting customers to think about their usage. We will continue throughout the period covered by this TSS to look at ways we can utilise technology to improve customer outcomes.

Longstanding issues relating to network tariff reform

Customer feedback	Our response
What impact will tariff reform have on vulnerable customers? Many of the customers and customer advocates with whom we've 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.	We consider the impact of pricing reform on all of our customers. Our strategy is to gradually transition to more cost reflective pricing over a period of time while avoiding 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 reform on their electricity bill. Our TSS has been informed by our engagement with customers and retailers. As a result of the feedback received we will: • continue pursuing ongoing cost savings in order to put downward pressure on the delivered cost of electricity; • pay for the introductory discounts to the off-peak demand charges in our new tariffs to encourage take-up of the new demand based time of use tariffs, without recovering the cost from our other customers; and • continue to seek to influence a review of the State Government's concession framework to better support pricing reform.
Does cost reflective pricing mean that customers in different parts of the State will pay different prices? Our customers are aware that residential and small business customers interstate sometimes pay different electricity prices, depending on where they are. 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.	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. The Rules currently include a provision that requires us to follow any jurisdictional requirements for pricing. In Tasmania, the distribution network tariffs for all small customers of a particular class are required 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. Larger, high voltage customers, often pay network charges that to some degree reflect their location. This provides these customers with better price signals about true cost of supply.
Customers told us that they need more information about the impacts that a move to the new demand based time of use network tariffs would have on them.	We are conducting, or planning to conduct, a number of trials, such as the emPOWERing You Trial, to collect electricity consumption, demand and time of use data for a representative sample of Tasmanian residential customers. That data, plus the other information we gather as part of the trials, can be used to understand how customers respond to new pricing signals and inform the information we provide to customers about the possible impacts of a move to a more cost-reflective tariff. Refer to Appendix E for more information about the impacts on customers of tariff change.

Customer feedback	Our response
Will customers be forced onto demand tariffs? 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.	The demand based tariffs will continue to be available to customers as a choice (opt-in basis) through their electricity retailer. TasNetworks' PRWG was particularly supportive of the proposal for maintaining our opt-in approach for demand based tariffs for the 2019-24 period. In subsequent regulatory control periods we will seek to accelerate the pace of pricing reform by progressing to opt-out tariff assignment arrangements and passing on time of use price signals to retailers for all residential and small business customers.

Customer charge comparisons

Introducing cost reflective tariffs is in the best interests of all customers, because it can help reduce average tariffs for all customers in the longer term by lessening the need to upgrade our network to cater for growth in peak demand and extending the service lives of some of our assets, deferring their replacement. However, we recognise that introducing demand based time of use tariffs may represent a significant change for some of our customers, particularly residential customers. As such, we recognise our customers will require time to adapt their behaviour and implement solutions in response to demand based tariffs.

The Network Pricing Objective set out in the Rules requires that the network tariffs for all customer classes 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, and is set out in the Rules. We consider the application of the Customer Impact Principle to be a particularly important element in ensuring successful tariff reform in Tasmania.

When developing our long term pricing plan, including this TSS and our first TSS for the period 2017-19, we considered the impacts of our proposed tariffs on our customers. This impact analysis has informed all aspects of our pricing plan design including: tariff structures, tariff levels, tariff assignment and the pace of tariff transition.

The analysis relating to our 2019-24 TSS period is summarised in Appendix E. The network bill impacts and potential savings from switching to demand tariffs or better managing peak loads on existing tariffs are calculated based on a number of assumptions about what constitutes a typical customer[11]:

- Residential customers are represented by a medium usage household supplied under the Residential low voltage general (**TAS31**) and Uncontrolled low voltage heating (**TAS41**) tariffs, with an annual combined consumption of 7,300 kWh.

[11] The characteristics of the typical customers we've used to illustrate the potential impact of changes to our network tariffs are similar to, but not exactly the same as the typical customers used by OTTER to assess the impact on customers of changes in standing offer retail electricity prices or to compare Tasmanian and interstate standing offer electricity prices. This difference is as a result of our access to a larger data set.

- Small Business Low Voltage customers are represented by a high usage small business supplied under the Business low voltage general tariff (**TAS22**), with an annual consumption of 34,327 kWh.
- Large Business Low Voltage customers are represented by a medium usage large business supplied under the Business low voltage kVA demand tariff (**TAS82**), with an annual consumption of 268,654 kWh.
- Large Business High Voltage customers are represented by a medium usage high voltage business supplied under the Business high voltage kVA specified demand tariff (**TASSDM**) with an annual consumption of 1,988 MWh.
- Irrigation customers are represented by a medium usage irrigator supplied under the Irrigation low voltage time of use tariff (**TAS75**) with an annual consumption of 17,495 kWh.

The analysis also considers the Off-Peak discounts for Residential and Small Business demand tariffs outlined in Section C3. Since the typical Residential and Small Business tariffs do not have any time of use components, our estimates of the potential savings from better managing peak usage for these two groups are based on the current time of use periods applying to the Residential low voltage time of use (**TAS93**) and Business low voltage time of use (**TAS94**) tariffs.

Table 4 How our prices will affect our customers

Customer types and actions	Network tariff impacts during 2019-24 TSS period for total network charge ($ nominal)
Customers who remain on their current network tariff(s) and don't actively manage their use of electricity	
Residential *7,300 kWh per annum*	Network charges will increase, on average, by $21 each year.
Small Business Low Voltage *34,300 kWh per annum*	Network charges will increase, on average, by $77 each year.
Large Business Low Voltage *268,500 kWh per annum*	Network charges will increase, on average, by $224 each year.
Large Business High Voltage *1,990 MWh per annum*	Network charges will increase, on average, by $796 each year.
Irrigators *17,500 kWh per annum*	Network charges will increase, on average, by $48 each year.
Customers who choose to try a demand based tariff because they plan to manage their peak use	
Residential	Average savings of $70 per year without behaviour changes and average savings of $114 per year with a 10 per cent peak demand reduction.

Customer types and actions	Network tariff impacts during 2019-24 TSS period for total network charge ($ nominal)
Small Business Low Voltage	Average savings of $424 per year without behaviour changes and average savings of $676 per year with a 10 per cent peak demand reduction.
Large Business Low Voltage	Average savings of $26 per year without behaviour changes and average annual savings of $1,161 per year with a 10 per cent peak demand reduction.
Customers who choose to better manage their peak use on their existing tariff(s)	
Residential (assuming a customer on a time of use consumption network tariff)	Average savings of $34 per year when shifting 10 per cent Peak consumption to Off-Peak periods.
Small Business Low Voltage (assuming a customer on a time of use consumption network tariff)	Average savings of $159 per year when shifting 10 per cent Peak consumption to Shoulder and Off-Peak periods.
Large Business Low Voltage	Average savings of $883 per year from a 10 per cent Anytime Maximum Demand (ATMD) reduction.
Large Business High Voltage	Average savings of $532 per year when shifting 10 per cent Peak consumption to Shoulder and Off-Peak periods and additional average savings of $4,164 per year from a 10 per cent Specified Demand reduction.
Irrigators	Average savings of $55 per year when shifting 10 per cent Peak consumption to Shoulder and Off-Peak periods.

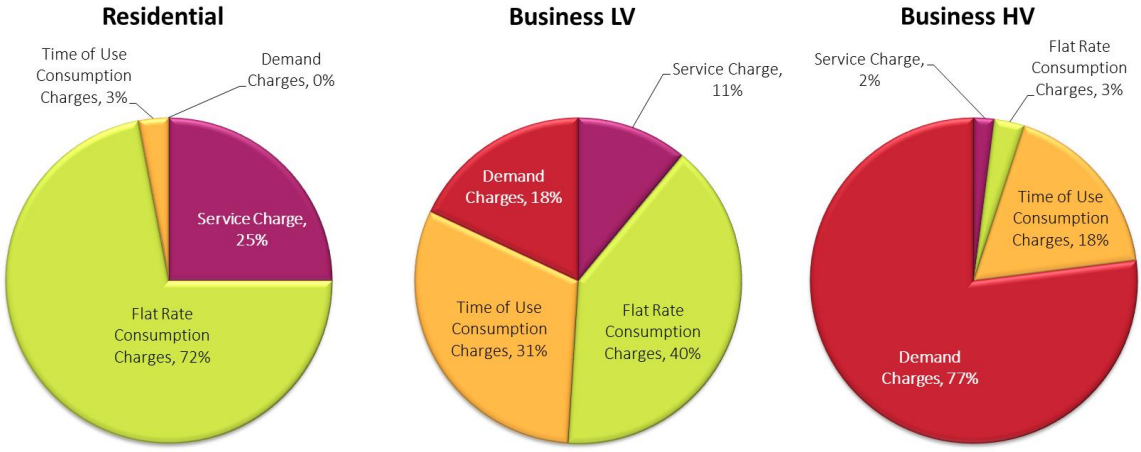
As we transition to more cost reflective pricing we will continue to assess the impacts of our tariffs on different customer groups and ensure that we adhere to the requirements of the Customer Impact Principle.

Distribution network customer, tariff and revenue breakdown

Distribution network revenues by tariff component

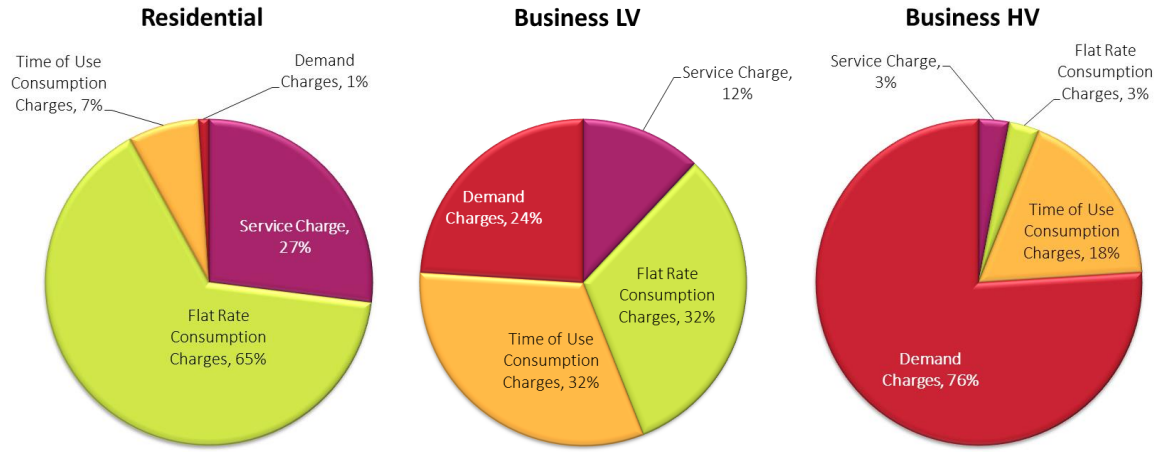
In line with the provisions of the Rules, we are reforming our Distribution Pricing Strategy to gradually transition to more cost reflective pricing by changing our distribution tariffs. The following charts show the mix of tariff components used to recover the contribution made by each tariff class towards the cost of the distribution network, as forecast at the start and end of the 2019-24 period.

Figure 12 Tariff components by tariff class for 2019-20



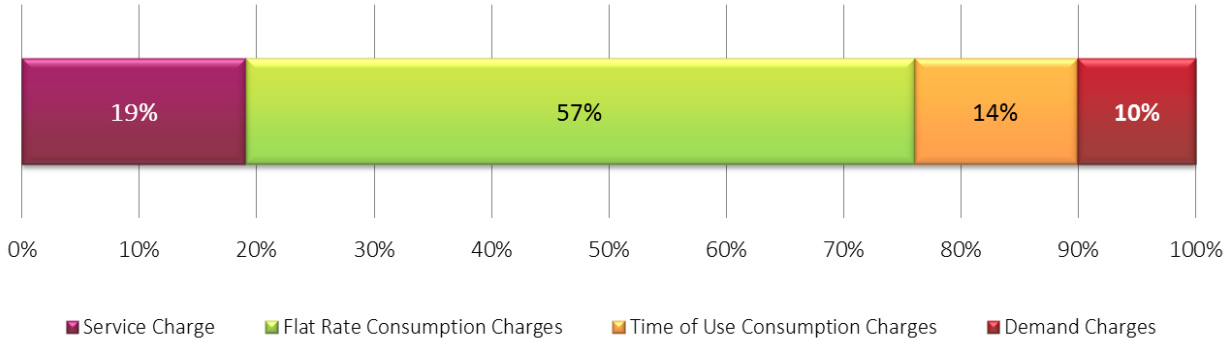
The differences between the different tariff classes, in terms of the type of network charges used to recover the cost of the network, largely reflect the fact that, for residential customers the application of demand based network charges is in its infancy, whereas demand charges have long been a feature of the network charges applied to commercial customers – although they haven't always reflected time of use. We are encouraging customers to take up demand based tariffs and are therefore forecasting an increase in the take-up of demand based network tariffs. As such we would expect that the proportion of residential customers' network costs recovered through demand charges will gradually increase in the future.

Figure 13 Tariff components by tariff class for 2023-24



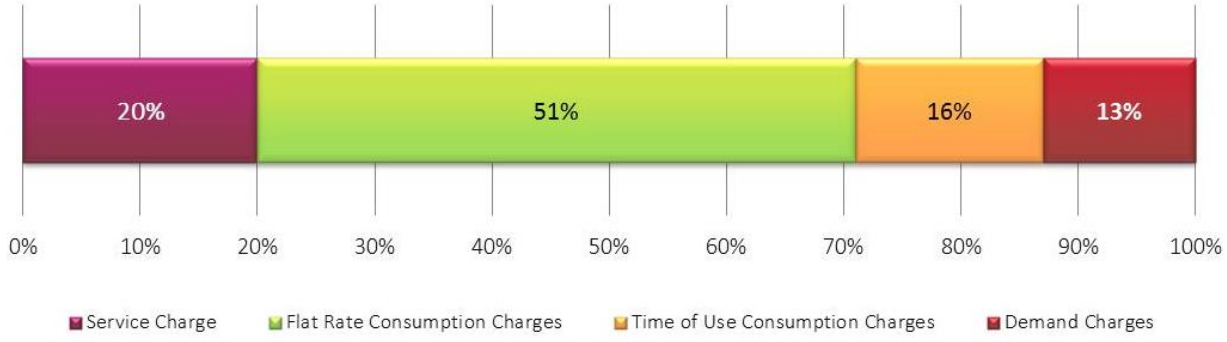
The figure below breaks down the extent to which the different types of tariff components are expected to recover the cost of providing and operating the distribution network in 2019-20, across all tariff classes.

Figure 14 Revenue recovery from all our customers by tariff component for 2019-20



Over time, as shown in the figure below, we expect the amount of revenue to be recovered via demand based charges to increase as more customers opt in to demand based tariffs, and as the pricing reform transition continues. This includes the long-term transition to more demand-based network charging to retailers.

Figure 15 Revenue recovery from all our customers by tariff component for 2023-24



4 Assignment to network tariff classes

Because we have multiple tariff classes, and multiple tariffs within each tariff class, we must have a series of eligibility criteria that determine which tariffs apply to a given type of customer or from which range of tariffs they may choose (through their retailer). 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 (see Section 5 for more information).

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 2019 if they:

- were our customer prior to 1 July 2019; and
- continue to be our customer as at 1 July 2019.

Assignment of new customers to a tariff class

If we become aware that a business, organisation or person is to become our customer, then we determine the tariff class to which the new customer will be assigned by considering 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 advanced metering technology has been installed at the customer's premises.

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 who have micro embedded generation facilities are not treated any more or less favourably than customers with similar load profiles without such facilities.

The impact of tariff assignment and reassignment on customers

The assignment or reassignment of a residential or small business customer to a particular network tariff does not necessarily translate to a change in the retail electricity tariff applying to that customer. This is because, rather than billing customers directly, TasNetworks – like network operators elsewhere in Australia – charges electricity retailers on behalf of their customers.

The assignment or reassignment of a customer to a network tariff determines what we charge retailers when we bill them for their customers' connections and the delivery of electricity. The tariff component and prices which most customers see on their bills reflect how each retailer packages its input costs for particular customers, including energy costs, the cost of providing retail services – and network charges.

Reassigning a customer to different network tariff may not, therefore, change the retail tariff applying to the customer, unless the retailer offers a retail tariff underpinned by that network tariff which they can apply to the customers. This is one of the reasons that we are working closely with retailers to encourage them to base some of their retail tariffs on the new time of use tariffs that we're introducing. For example, Aurora Energy has been offering a retail standing offer to residential customers since July 2016 which is based on our consumption based time of use tariff (TAS93).

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 cases where a tariff class is abolished, we will notify the affected customers of this and reassign them to a new tariff class.

Options to proposed assignments and reassignments

Working in conjunction with a customer's retailer, 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.

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.

The notices we provide to customers about tariff assignments or reassignments will:

- include a copy of our internal procedures for reviewing objections and a link to where they can find such information 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 AER via the dispute resolution process available under Part 10 of the National Electricity Law.

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.

Assessing and reviewing the basis on which a customer is charged

There are three ways a customer can be assigned to a tariff which we explain below:

1. The customer is initially assigned to a tariff based on the nature of their use, connection and metering characteristics.
2. We may initiate a reassignment if a customer's nature of use, connection or metering characteristics change.
3. A customer's retailer can request a change in tariff. The trigger for such a request is often a customer requesting a change to their retail tariff (e.g. the customer requests a change to a demand based time of use retail tariff).

TasNetworks initiated reassignment

We review the assignment of customers to our tariff classes as part of the annual process of developing tariffs for regulatory approval. We have set procedures and criteria[12] to determine when it may be appropriate for a customer to be reassigned to a different 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 their assumed usage or load profile.

Retailer initiated reassignment

In addition to this annual review process, customers (or a customer's retailer) can request that we review and change a 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 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.

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*.

[12] See our Network tariff application and price guide

These guides are updated annually to reflect any changes to our tariffs and charges approved by the AER 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

5 Tariff classes, structures and charging parameters for alternative control services

What are alternative control services?

The term 'alternative control services' refers to services 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, instead of setting a revenue cap, the AER caps the prices that can be charged or sets the input costs that can be used by TasNetworks to quote jobs. TasNetworks' alternative control services include regulated metering services for small customers[13], ancillary services (quoted services and fee based services), and public lighting.

Further information regarding our Alternative Control Service offerings is provided in our *Alternative Control Service Descriptions Paper (TN094)*, appended as an attachment to our Regulatory Proposal submitted to the AER in January 2018.

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, which are consistent with those approved by the AER for our 2017-19 TSS.

Table 5 Tariff classes for alternative control services

Tariff class	Definition
Metering	Metering services are those services provided with respect to the provision, installation and maintenance of standard meters installed prior to December 2017 and associated services provided to retail customers. This includes the metering services provided to small customers (using type 6 and type 7 meters) in our role as metering provider and meter data provider. The service also includes the provision of PAYG metering services, previously classified as an unregulated service. Competitive metering services, such as the provision of an advanced meter, are not classified as alternative control services.

[13] Type 6 and 7 meters

Tariff class	Definition
Public lighting	Public lighting services are those services for: • the provision, construction and maintenance of our public lighting assets; and • the maintenance of public lighting assets owned by customers (contract lighting). This includes the provision, construction and maintenance of new and/or emerging public lighting technology services.
Ancillary services - Fee based services *These services include for example, basic connection 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 *Includes for example, asset movements at a customer's request*	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.

Metering, public lighting, and ancillary services

Our approach to setting the tariffs for the 2019-24 regulatory period is consistent across metering, public lighting, and ancillary services – fee based services and quoted services.

Metering services overview

Metering services are provided by TasNetworks 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 recovers the cost of our regulated metering fleet and a non-capital charge, which covers the cost of reading the meter and collecting the metering data.

From 1 December 2017, the nature of our involvement in the provision of meters for residential and small business customers has changed. The change is a result of alterations made by the AEMC to the regulatory framework applying to metering services.

As a result of those changes, from 1 December 2017 each customer's retailer is responsible (through their chosen Metering Co-ordinator) for providing and maintaining advanced meters on a new and replacement basis. TasNetworks will continue to support the existing fleet of Type 6 meters during the 2019-24 TSS period, but will not be involved with the provision or reading of newly installed advanced meters.

The AER 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 different meter classes.

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

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 as well as an alternative control service. The delivery 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 classified by the AER as an alternative control service.

The term "Public lighting services" applies to:

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

This includes the provision, construction, and maintenance of new/emerging public lighting technology.

Public lighting services exclude:

- the alteration and relocation of public lighting assets, which are provided on an ancillary service basis (i.e. as a quoted service); and
- the installation of contract lights, which is undertaken as an ancillary service (quoted service).

The provision of public lighting services will be categorised according to the type of lighting fixture that is provided and whether we own that light.

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

TasNetworks' public lighting service arrangements and pricing are largely a continuation of agreements and charges that were previously offered by Aurora Energy in its capacity as a DNSP. We are now in our fourth year of operations and as such, our level of understanding of the costs associated with the provision of all services, including public lighting, has matured.

TasNetworks' first regulatory proposal, for the 2017-19 regulatory period, was submitted to the AER in January 2016, and largely reflected a continuation of the status quo in relation to public lighting. Since then, thorough analysis of the available asset and expenditure data by TasNetworks, as well as a review of the time and resources being expended by TasNetworks on the delivery of public lighting services, has revealed that the public lighting prices currently on offer fall significantly short of full cost recovery. Accordingly, to be cost reflective, the prices charged for public lighting services need to increase significantly.

Introducing a significant step change in prices would, however, be inconsistent with our strategy of providing predictable and sustainable prices for our customers. TasNetworks is proposing, therefore, to use a gradual glide path for public lighting prices spanning the 2019-24 and 2024-29 regulatory periods, to transition public lighting to fully cost reflective pricing. The revenue foregone during this transitional phase will be absorbed by TasNetworks, and will not be passed on to other customers.

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

Ancillary services – Fee based services overview

These services are provided upon request and are typically initiated by way of a service request from a retailer. The fee-based services we propose to provide in the forthcoming regulatory period include but are not limited to:

- energisation;
- de-energisation;
- re-energisation;
- meter testing;
- basic connections;
- supply abolishment – removal of meters and service connection; and
- other miscellaneous services.

In the forthcoming regulatory period, the Power of Choice metering reforms mean that meter alterations and renewable energy connections will no longer be offered as a service.

We are proposing to include under connection services an additional service for providing temporary disconnection and reconnection in response to a retailer's request for an outage. The following additional services will also appear as 'miscellaneous services', to reflect the AER's updated Framework and Approach paper[14]:

- creation of National Metering Identifier (NMI);
- statutory right – access prevented;
- network tariff change (back office);
- emergency maintenance contestable meters;
- meter recovery and disposal; and
- the fitment of 'tiger tails'.

A full description of our fee-based services is provided in the *Alternative Control Services Descriptors Paper (TN094)* and indicative charges are set out in the Indicative Pricing Schedule in Appendix B.

[14] AER, Framework and approach, TasNetworks electricity transmission and distribution, Regulatory control period commencing 1 July 2019, July 2017.

Tariff development process

Metering, public lighting, and ancillary services' price caps are calculated for each year of the regulatory period using the price control mechanism formula approved by the AER for our 2019-24 revenue determination. The formula which the AER approved for our 2017-19 TSS and which we are proposing to retain is as follows:

$$\overline{p}_t^i = \overline{p}_{t-1}^i \times (1 + CPI_t) \times (1 - X_t^i) + A_t^i$$

Table 6 details the price cap parameters that apply when calculating the tariffs.

Table 6 Price cap calculation methodology

Component	Comment
$\overline{p}_t^i$	The cap on the price of service i in year t
p_t^i	The price of service i in year t. The initial value is to be decided in the determination
$\overline{p}_{t-1}^i$	The cap on the price of service i in year t-1
t	The regulatory year
ΔCPI_t	The annual percentage change in the ABS consumer price index (CPI) for All Groups, Weighted average of Eight Capital Cities from the December quarter in year t-2 to the December quarter in year t-1.
X_t^i	The X-factor for service i in year t
A_t^i	The sum of any adjustments for service I in year t

This means prices move from year to year by indexing the previous year's prices by inflation and other adjustments including the X-factor.

Indicative prices for alternative control services

Indicative prices for the 2019-24 regulatory period have been calculated using the price cap formula above for each year. Indicative prices for metering, public lighting and fee based services' tariffs for 2019-24 are set out in the Indicative Pricing Schedule in Appendix B.

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

Tariff structures and parameters

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

Table 7 Tariff structures for alternative control services

Service	Recovery
Metering services	Recovered through a fixed daily capital charge and operating charge, reflective of the nature of the costs which are fixed for each customer (that is, the customer has little ability to act to mitigate the cost). Should a customer receive an advanced meter the operating (non-capital) charge will cease while the capital charge will continue for the duration of the forthcoming regulatory period.
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.

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 or third party 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 overhead and underground subdivisions for developers;
- services that are provided through a non-standard process at a customer's request (for example, where more frequent meter reading is required);
- networks safety services;
- customer vegetation defect works;
- premises connection services and extension;
- connection application services (other than those provided as ancillary services - fee based services);
- design work for a new connection;
- access permits, oversight and facilitation;
- notices of arrangement;
- network related property services;
- planned Interruption – customer requested; and
- provision of training to third parties for network related access.

Charging arrangements for quoted services

The price caps for providing quoted services are built up based on 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, and is reflected in the following formula we propose to apply:

Price = Labour + Contractor Services + Materials + Margin

The following table details the price cap parameters that apply when calculating the tariffs.

Table 8 Price cap calculation methodology

Component	Comment
Labour	Consists of all labour costs directly incurred in the provision of the service which may include labour on-cost, fleet on-costs and overhead. Labour is escalated annually by the formula provided below.
Contractor services	Reflects all costs associated with the use of external labour including overheads and any direct costs incurred. The contracted services charge applies the rates under existing contractual arrangements. Direct costs incurred are passed on to the customer.
Materials	Reflects the cost of materials directly incurred in the provision of the service, material storage and logistics on-costs and overheads.
Margin	Margin is an amount equal to 5.86 per cent[15] of the total costs of labour, contractor services and materials.

We also calculate price caps for the labour rates applying to quoted services in accordance with a formula given by the AER:

$(1+ \Delta CPI_t)(1 - X^i_t)$

The following table provides details of the labour rate cap calculations that have been used to prepare quoted services tariffs.

Table 9 Price cap on labour rate

Component	Comment
ΔCPI	The annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the December quarter in year t-2 to the December quarter in year t-1.
X^i_t	The X-factor for service I in year t.

[15] Aligned with our proposed distribution Rate of Return

This means prices move from year to year by indexing the previous year's component prices for inflation and for the X-factor.

Indicative prices for quoted services

The labour rates used in determining quoted services are set out in the Indicative Pricing Schedule in Appendix B. The labour rates and the formula for 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. The inclusion of a margin is consistent with the principle of competitive neutrality, which is that publicly owned businesses should not enjoy a competitive advantage simply because they are publicly owned.

While many of our quoted services are not currently subject to competition, this situation may change over time. The inclusion of a modest margin will assist in promoting the development of competition and ensure fair pricing across all our services.

This approach has been taken because 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 feasible, therefore, to set a generic total fixed fee in advance for these services.

6 Further information

Supporting documents

We have published the PRWG materials and consultation documents as part of the development of this Tariff Structure Statement. These documents, which are available on our website, include:

- Consultation paper – Demand based network tariffs – offering a new choice (September 2015)
- Consultation paper – Improving the way we price our network services (October 2015)
- Network Planning Workshop Minutes (November 2016)
- TasNetworks Pricing Reform Working Group Presentation and Minutes (April 2017)
- Indicative Tariffs and Customer Charge Impacts 2019-24, Pricing Reform Working Group Presentation and Minutes (August 2017)
- TasNetworks Pricing Reform Working Group Presentation and Minutes (November 2017)

Applications and Price Guides

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

- 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.

Contact details

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

Leader Regulation
PO Box 606
Moonah TAS 7009
E-mail: revenue.reset@tasnetworks.com.au

7 Compliance matrix

The Rules require us to comply with a range of requirements when submitting a TSS to the AER. This section presents each compliance requirement and how this Tariff Structure Statement addresses each requirement.

Table 10 TSS compliance matrix

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 Appendix B of this TSS.
6.8.2(d2)	The proposed tariff structure statement must comply with the pricing principles for direct control services.	This TSS complies with the Rules' requirements regarding pricing principles for direct control services. Further explanation is provided in Table 11 (below).
6.18.1A	A tariff structure statement must include the following elements:	
	(1) the tariff classes into which retail customers for direct control services will be divided during the relevant regulatory control period;	See Section 2 (*Tariff classes, structures and charging parameters for standard control services*) in relation to standard control services. See Section 5 (*Tariff classes, structures and charging parameters for alternative control services*) in relation to alternative control services.
	(2) the policies and procedures TasNetworks will apply to assigning retail customers to tariffs or reassigning retail customers from one tariff to another (including any applicable restrictions);	See Section 4 (*Assignment to network tariff classes*)
	(3) the structures for each proposed tariff;	See Figure 10 (*Tariff classes, structures and charging parameters* in Section 2 (*Tariff classes, structures and charging parameters for standard control services*) in relation to network tariffs. See Table 7 (*Tariff structures for alternative control services*) in Section 5 (*Tariff classes, structures and charging parameters for alternative control services*) in relation to metering, public lighting and fee based ancillary services. See Section 5 in relation to quoted services, under the heading "*Charging arrangements for quoted services*". *Appendix A: Network tariffs for 2019-24* provides detailed descriptions of existing and

Clause		Compliance
		new tariffs for standard control services.
	(4) the charging parameters for each proposed tariff; and	See Figure 10 (*Tariff classes, structures and charging parameters)* in Section 2 (*Tariff classes, structures and charging parameters for standard control services*). See Table 7 (*Tariff structures for alternative control services*) in Section 5 (*Tariff classes, structures and charging parameters for alternative control services*) in relation to metering, public lighting and fee based ancillary services. See Section 5 in relation to quoted services under the heading "*Charging arrangements for quoted services*" Appendix B: Indicative Prices for 2019 – 2024 for standard control services, public and contract lighting services, fee-based services, quoted services and metering services.
	(5) a description of the approach that TasNetworks will take in setting each tariff in each pricing proposal during the relevant regulatory control period in accordance with clause 6.18.5.	See sections 1 (*Distribution pricing strategy*) and 3 (*Network tariff setting process*).
6.18.1A(b)	A tariff structure statement must comply with the pricing principles for direct control services.	The statement complies with the pricing principles. For a detailed explanation, please refer to Table 11 (*Pricing Principles Compliance*).
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 Appendix B of this TSS.

Table 11 Pricing Principles Compliance

Clause	Pricing principle	Compliance
6.18.5(e)	For each tariff class, the revenue expected to be recovered must lie on or between: • an upper bound representing the stand alone cost of serving the retail customers who belong to that class; and • a lower bound representing the avoidable cost of not serving those retail customers.	*Appendix C: Designing cost reflective tariffs* explains our compliant pricing approach.
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: • the costs and benefits associated with calculating, implementing and applying that method as proposed; • 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 • 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.	*Appendix C: Designing cost reflective tariffs* explains our compliant approach to pricing, along with Section 3 (*Network tariff setting process*). Table 3 (*Issues raised by our customers and our responses)* explains the jurisdictional requirement that distribution network tariffs for all small customers of a particular class are required to be uniform, regardless of where in mainland Tasmania the customer is supplied.
6.18.5(g)	The revenue expected to be recovered from each tariff must: 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).	*Appendix C: Designing cost reflective tariffs* explains our compliant pricing approach, including our compliance with sub-paragraph 3. The sumproduct of our indicative prices in Appendix B and our demand/consumption forecasts has been set to equal the net present value of the building block revenue requirements set out in section 15 of our regulatory proposal.

Clause	Pricing principle	Compliance
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: • 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); • the extent to which retail customers can choose the tariff to which they are assigned; and • the extent to which retail customers are able to mitigate the impact of changes in tariffs through their usage decisions.	Our compliance with this principle has been ensured through our approach to customer engagement and how we have reflected the outcomes of this in: • our approved 2017-19 TSS that commenced our gradual transition approach to legacy tariff rebalancing which this TSS continues to execute • our updated approach to measuring demand for our demand TOU tariffs • our updated approach to opt in and opt out assignments. Table 3 (*Issues raised by our customers and our responses*) in Section 3 discusses a range of issues raised by customers in relation to the impact of changes in tariffs on customers.
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: • the type and nature of those retail customers; and • the information provided to, and the consultation undertaken with, those retail customers.	We have retained the tariff structures previously approved by the AER in our 2017-19 TSS, and updated our approach to measuring demand for our residential and small business demand TOU tariffs to reflect PRWG and AER feedback. Table 3 (*Issues raised by our customers and our responses*) in Section 3 discusses a range of issues raised by customers in relation to tariff reform, including the tariff design trade-offs between complexity and cost reflectivity, simplicity and fairness. Our embedded network tariffs will be offered to informed energy market participants. We have based our tariff structure on the equivalent structure for our large low voltage customers.

Clause	Pricing principle	Compliance
6.18.5(j)	A tariff must comply with the Rules and all applicable regulatory instruments.	Our existing tariffs comply with this principle, and our new DER and embedded network tariffs have been designed for compliance as explained in Appendix C (see *C.3 Designing our new tariffs*).

Appendix A: Network tariffs for 2019-24

The table below provides a description of the existing and new tariffs.

Table A1: Network tariffs for Standard Control Services

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td>High Voltage</td><td>Business High Voltage kVA Specified Demand (TASSDM)</td><td>
This network tariff is for installations taking supply at high voltage, with an expected any time maximum demand of less than 2 MVA. There are no restrictions on the use of the supply (i.e. the supply may be used for general power, heating, water heating, etc.).

The customer must supply their own transformers and switchgear for installations connected on this network tariff.

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.

This network tariff may not be used in conjunction with any other network tariff offering.

This network tariff structure includes seasonal consumption (kWh) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Summer
(1 Oct – 31 Mar)</th><th>Winter
(1 Apr – 30 Sep)</th></tr>
<tr><td>Week Day (07:00 – 22:00)
(Monday – Friday)</td><td>Shoulder</td><td>Peak</td></tr>
<tr><td>Weekend Day (07:00 – 22:00)
(Saturday and Sunday)</td><td>Off-peak</td><td>Shoulder</td></tr>
<tr><td>Any Day (22:00 – 24:00)
(Monday – Sunday)</td><td>Off-peak</td><td>Off-peak</td></tr>
<tr><td>Any Day (0:00 – 07:00)
(Monday – Sunday)</td><td>Off-peak</td><td>Off-peak</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td></td><td>Business High Voltage kVA Specified Demand >2MVA
(TAS15)</td><td>
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.
The customer must supply its own transformers and switchgear for HV installations connected on this network tariff.
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.
A site connected to our distribution network with this network tariff is not eligible for any other network tariff offering.
This network tariff structure includes seasonal consumption (kWh) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Summer
(1 Oct – 31 Mar)</th><th>Winter
(1 Apr – 30 Sep)</th></tr>
<tr><td>Week Day (07:00 – 22:00)
(Monday – Friday)</td><td>Shoulder</td><td>Peak</td></tr>
<tr><td>Weekend Day (07:00 – 22:00)
(Saturday and Sunday)</td><td>Off-peak</td><td>Shoulder</td></tr>
<tr><td>Any Day (22:00 – 24:00)
(Monday – Sunday)</td><td>Off-peak</td><td>Off-peak</td></tr>
<tr><td>Any Day (0:00 – 07:00)
(Monday – Sunday)</td><td>Off-peak</td><td>Off-peak</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td>High Voltage</td><td>High Voltage Embedded Network Tariff</td><td>This network tariff is for installations taking supply at high voltage, and represent an embedded network as defined in the National Electricity Rules[16]. 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.

This network tariff structure includes demand based (kW) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr>
</table>
</td></tr>
</table>

[16] **embedded network** - A *distribution system*, *connected* at a *parent connection point* to either a *distribution system* or *transmission system* that forms part of the *national grid*, and which is owned, controlled or operated by a person who is not a *Network Service Provider*.

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td>Irrigation</td><td>Irrigation Low Voltage Time of Use (TAS75)</td><td>This low voltage network tariff is for primary producers' business installations that are used primarily for the irrigation of crops.

This network tariff may not be used in conjunction with any other network tariff offering.

This network tariff structure includes seasonal consumption (kWh) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Summer
(1 Oct – 31 Mar)</th><th>Winter
(1 Apr – 30 Sep)</th></tr>
<tr><td>Week Day (07:00 – 22:00)
(Monday – Friday)</td><td>Shoulder</td><td>Peak</td></tr>
<tr><td>Weekend Day (07:00 – 22:00)
(Saturday and Sunday)</td><td>Off-peak</td><td>Shoulder</td></tr>
<tr><td>Any Day (22:00 – 24:00)
(Monday – Sunday)</td><td>Off-peak</td><td>Off-peak</td></tr>
<tr><td>Any Day (0:00 – 07:00)
(Monday – Sunday)</td><td>Off-peak</td><td>Off-peak</td></tr>
</table>
</td></tr>
<tr><td>Large Low Voltage</td><td>Business Low Voltage kVA Demand (TAS82)</td><td>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.).

This network tariff may not be used in conjunction with any other network tariff offering.</td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td></td><td>Large Low Voltage Commercial Time of Use Demand
(TAS89)</td><td>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.).

This network tariff may not be used in conjunction with any other network tariff offering.

This network tariff structure includes demand based (kW) time of use charging components, periods as shown below.

<table><tr><th>Time periods</th><th>Tariff rate</th></tr><tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr><tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr><tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr><tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr><tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr></table></td></tr>
<tr><td>Small Low Voltage</td><td>Low Voltage Commercial Time of Use Demand
(TAS88)</td><td>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.

This network tariff structure includes demand based (kW) time of use charging components, periods as shown below.

<table><tr><th>Time periods</th><th>Tariff rate</th></tr><tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr><tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr><tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr><tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr><tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr></table></td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td></td><td>Business Low Voltage Distributed Energy Resources (TAS98)</td><td>This network tariff is for low voltage installations that are not used either wholly or principally as Private Residential Dwellings, where electricity storage, generation and/or electricity management devices – collectively referred to as “distributed energy resources” (DER) have been deployed behind the meter. 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.

This network tariff structure includes demand based (kW) time of use charging components, as shown below.

<table><tr><th>Time periods</th><th>Tariff rate</th></tr><tr><td>Week day (07:00 – 10:00) (Monday – Friday)</td><td>Peak</td></tr><tr><td>Week day (10:00 – 16:00) (Monday – Friday)</td><td>Off-peak</td></tr><tr><td>Week day (16:00 – 21:00) (Monday – Friday)</td><td>Peak</td></tr><tr><td>Week day (21:00 – 07:00) (Monday – Friday)</td><td>Off-peak</td></tr><tr><td>Weekend day (00:00 – 24:00) (Saturday – Sunday)</td><td>Off-peak</td></tr></table></td></tr>
<tr><td></td><td>Business Low Voltage General (TAS22)</td><td>This network tariff is for low voltage installations located on premises 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.).</td></tr>
<tr><td></td><td>Business Low Voltage Nursing Homes (TAS34)</td><td>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.).

This network tariff is obsolete and no longer available to new customers.</td></tr>
<tr><td></td><td>General Network – Business, Curtilage (TASCURT)</td><td>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.

The single connection point must supply an installation qualifying for, and being supplied under network tariff, Business Low Voltage General (TAS22).

This network tariff is obsolete and no longer available to new customers.</td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td></td><td>Business Low Voltage Embedded Network Tariff</td><td>This network tariff is for installations taking supply at low voltage and represent an embedded network as defined in the National Electricity Rules[17]. 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.

This network tariff structure includes demand based (kW) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr>
</table></td></tr>
<tr><td></td><td>Business Low Voltage Time of Use (TAS94)</td><td>This network tariff is available for low voltage installations 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.).

This network tariff structure includes consumption (kWh) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week Day (07:00 – 22:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Weekend Day (07:00 – 22:00)
(Saturday and Sunday)</td><td>Shoulder</td></tr>
<tr><td>Any Day (22:00 – 24:00)
(Monday – Sunday)</td><td>Off-peak</td></tr>
<tr><td>Any Day (0:00 – 07:00)
(Monday – Sunday)</td><td>Off-peak</td></tr>
</table></td></tr>
</table>

[17] **embedded network** - A *distribution system*, *connected* at a *parent connection point* to either a *distribution system* or *transmission system* that forms part of the *national grid*, and which is owned, controlled or operated by a person who is not a *Network Service Provider*.

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td>Residential</td><td>Residential Time of Use Demand (TAS87)</td><td>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.

This network tariff may not be used in conjunction with any other network tariff offering.

This network tariff structure includes demand based (kW) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td></td><td>Residential Low Voltage Distributed Energy Resources (TAS97)</td><td>This network tariff is for low voltage installations that are premises used wholly or principally as Private Residential Dwellings where electricity storage, generation or electricity management devices – collectively referred to as “distributed energy resources” (DER) – have been deployed behind the meter. 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.

This network tariff may not be used in conjunction with any other network tariff offering.

This network tariff structure includes demand based (kW) time of use charging components, periods as shown below.
<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week day (07:00 – 10:00) (Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (10:00 – 16:00) (Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Week day (16:00 – 21:00) (Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (21:00 – 07:00) (Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Weekend day (00:00 – 24:00) (Saturday – Sunday)</td><td>Off-peak</td></tr>
</table>
</td></tr>
<tr><td></td><td>Residential Low Voltage General (TAS31)</td><td>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.).

Farm outbuildings may be connected on this network tariff provided that the connection is through the meters of the farm residence.</td></tr>
<tr><td></td><td>Residential Low Voltage PAYG (TAS101)</td><td>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.).

This network tariff may not be used in conjunction with any other network tariff.

This network tariff is obsolete and no longer available to new customers.</td></tr>
</table>

<table>
<tr><th>Network Tariff class</th><th>Network Tariff</th><th>Description</th></tr>
<tr><td></td><td>Residential Low Voltage PAYG Time of Use
(TAS92)</td><td>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.).

This network tariff structure includes consumption (kWh) time of use charging components, periods as shown below.

<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr>
</table></td></tr>
<tr><td></td><td>Residential Low Voltage Time of Use
(TAS93)</td><td>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.).

Farm outbuildings may be connected on this tariff provided that the connection is through the meters for the farm residence.

This network tariff structure includes consumption (kWh) time of use charging components, periods as shown below.

<table>
<tr><th>Time periods</th><th>Tariff rate</th></tr>
<tr><td>Week day (07:00 – 10:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (10:00 – 16:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Week day (16:00 – 21:00)
(Monday – Friday)</td><td>Peak</td></tr>
<tr><td>Week day (21:00 – 07:00)
(Monday – Friday)</td><td>Off-peak</td></tr>
<tr><td>Weekend day (00:00 – 24:00)
(Saturday – Sunday)</td><td>Off-peak</td></tr>
</table></td></tr>
</table>

Network Tariff class	Network Tariff	Description
Uncontrolled Energy	Uncontrolled Low Voltage Heating (TAS41)	This network tariff is for low voltage installations. It is not available on a stand-alone basis and must be used in conjunction with the following network tariffs; • Residential Low Voltage General (TAS31) • Business Low Voltage General (TAS22) • Business Low Voltage Nursing Homes (TAS34) 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. In installations that are not located at Private Residential Dwellings, this network tariff is for water heating only.

Network Tariff class	Network Tariff	Description
Controlled Energy	Controlled Low Voltage Energy – Off-Peak with afternoon boost (TAS61)	This network tariff is for low voltage installations. It is not available on a stand-alone basis and must be used in conjunction with one of the following network tariffs; • Residential Low Voltage General (TAS31) • Business Low Voltage General (TAS22) • Business Low Voltage Nursing Homes (TAS34) 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: • 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. In installations that are not Private Residential Dwellings but which have a current connection on either network tariff Business Low Voltage General (TAS22) Business Low Voltage Nursing Homes (TAS34), this network tariff: • may be used for water heating and/or space heating and/or other "wired in" appliances we approve. This network tariff is a time of use tariff. For installations connected on this network tariff, energy will be available daily for: • at least nine hours between 20:00 hours and 07:00 hours the following day; and • a further two hours between 13:00 hours and 16:30 hours. TasNetworks will choose the actual times during the periods that the energy will be available. This network tariff is obsolete and no longer available to new customers.

Network Tariff class	Network Tariff	Description
	Controlled Low Voltage Energy – Night period only (TAS63)	This network tariff is available for low voltage installations only. It is not available on a stand-alone basis and must be used in conjunction with the following network tariffs; • Residential Low Voltage General (TAS31) • Residential Low Voltage Time of Use (TAS93) • Residential Low Voltage PAYG Time of Use (TAS92) • Business Low Voltage General (TAS22) • Business Low Voltage Time of Use (TAS94) In the case of installations that are Private Residential Dwellings, this network tariff may be used for: • 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. In installations that are not Private Residential Dwellings, this network tariff: • is for water heating and/or space heating and/or other circuits we approve. This network tariff is a time of use tariff. Energy to installations connected on this network tariff will only be available between 22:00 hours and 07:00 hours the following day.
Unmetered	Unmetered Supply Low Voltage General (TASUMS)	This network tariff is intended to be applied to small, low voltage, low demand installations with a relatively constant load profile, such as: • illuminated street signs; • public telephone kiosks; • electric fences; • two-way radio transmitters; • fixed steady wattage installations; • traffic lights; or • level crossings. 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.

Network Tariff class	Network Tariff	Description
Streetlights	Unmetered Supply Low Voltage Public Lighting (TASUMSSL)	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. 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. 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.
Individual Tariff Calculation	Individual Tariff Calculation (TASCUSX)	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. 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. Terms and conditions for these customers are contained within individually negotiated connection agreements.

Appendix B: Indicative Prices for 2019 – 2024

Table B1: Indicative Prices (2019-20) Network Use of System (NUoS) – Standard Control Services

Tariff Class	Network tariff code	NUoS rates 2019-2020								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	335.188	1.474	0 884	0.221				19.728	197.283
		Business High Voltage Embedded Network	73.994[18]						25.965 / 8 646		
	TAS15[19]	Business High Voltage kVA Specified Demand (>2MVA)	2,751.500	0.970	0 582	0.145				9.377	46.882
Irrigation	TAS75	Irrigation Low Voltage Time of Use	244.823	10.727	6.437	1.609					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	331.981				2.532		35.493		
		Business Low Voltage Embedded Network	73.994[20]						57.999 / 19.313		
	TAS89	Large Low Voltage Commercial Time of Use Demand	467.668						47.204 / 15.719		
Small Low Voltage	TAS22	Business Low Voltage General	50.862				10.120				
	TAS34	Business Low Voltage Nursing Homes	50.862				10.120				
	TASCURT	General Network – Business, Curtilage	50.862				10.120				
	TAS94	Business Low Voltage Time of Use	66.902	10.853	6 512	1.628					
	TAS98	Business Low Voltage Distributed Energy Resources	73.994					59 345 / 9.881			
	TAS88	Low Voltage Commercial Time of Use Demand	73.994					59 345 / 9.881			
Residential	TAS31	Residential Low Voltage General	51.153				10.200				
	TAS92	Residential Low Voltage PAYG Time of Use	55.923	17.451		3.233					

[18] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[19] DUoS component only, locational TUoS component also applies

[20] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	NUoS rates 2019-2020									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS101	Residential Low Voltage PAYG	51.571				8.298				
	TAS93	Residential Low Voltage Time of Use	55.923	17.451		3.233					
	TAS97	Residential Low Voltage Distributed Energy Resources	56.902					30 086 / 5.009			
	TAS87	Residential Time of Use Demand	56.902					30 086 / 5.009			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.321				6.157				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	12.044				1.788				
	TAS63	Controlled Low Voltage Energy – with Night period only	12.044				1.553				
Unmetered	TASUMS	UMS Low Voltage General	50.862				12.293				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0.115			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B2: Indicative Prices (2019-20) Distribution Use of System (DUoS) – Standard Control Services

Tariff Class	Network tariff code	DUoS rates 2019-2020									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	335.188	0.315	0.189	0.047				15.639	156.395
		Business High Voltage Embedded Network	73.994[21]						10.946 / 3.645		
	TAS15[22]	Business High Voltage kVA Specified Demand (>2MVA)	2,751.500	0.970	0 582	0.145				9 377	46.882
Irrigation	TAS75	Irrigation Low Voltage Time of Use	244.823	7.093	4 256	1.064					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	331.981				1.770		19.678		
		Business Low Voltage Embedded Network	73.994[23]						34.173 / 11.379		
	TAS89	Large Low Voltage Commercial Time of Use Demand	467.668						24.258 / 8.078		
Small Low Voltage	TAS22	Business Low Voltage General	50.862				7.458				
	TAS34	Business Low Voltage Nursing Homes	50.862				7.458				
	TASCURT	General Network – Business, Curtilage	50.862				7.458				
	TAS94	Business Low Voltage Time of Use	66.902	7.686	4 611	1.153					
	TAS98	Business Low Voltage Distributed Energy Resources	73.994					43.431 / 7.231			
	TAS88	Low Voltage Commercial Time of Use Demand	73.994					43.431 / 7.231			
Residential	TAS31	Residential Low Voltage General	51.153				7.538				
	TAS92	Residential Low Voltage PAYG Time of Use	55.923	12.444		2.304					
	TAS101	Residential Low Voltage PAYG	51.571				6.424				
	TAS93	Residential Low Voltage Time of Use	55.923	12.444		2.304					

[21] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[22] DUoS component only, locational TUoS component also applies

[23] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	DUoS rates 2019-2020									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	56.902					22 202 / 3.696			
	TAS87	Residential Time of Use Demand	56.902					22 202 / 3.696			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.321				3.495				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	12.044				1.095				
	TAS63	Controlled Low Voltage Energy – with Night period only	12.044				0.996				
Unmetered	TASUMS	UMS Low Voltage General	50.862				8.573				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 084			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B3: Indicative Prices (2019-20) Transmission Use of System (TUoS) – Standard Control Services

Tariff Class	Network tariff code	TUoS rates 2019-2020									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)		1.159	0 695	0.174				4 089	40.888
		Business High Voltage Embedded Network							15.019 / 5.001		
	TAS15[24]	Business High Voltage kVA Specified Demand (>2MVA)									
Irrigation	TAS75	Irrigation Low Voltage Time of Use		3.634	2.181	0.545					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand					0.762		15.815		
		Business Low Voltage Embedded Network							23.826 / 7.934		
	TAS89	Large Low Voltage Commercial Time of Use Demand							22.946 / 7.641		
Small Low Voltage	TAS22	Business Low Voltage General					2.662				
	TAS34	Business Low Voltage Nursing Homes					2.662				
	TASCURT	General Network – Business, Curtilage					2.662				
	TAS94	Business Low Voltage Time of Use		3.167	1.901	0.475					
	TAS98	Business Low Voltage Distributed Energy Resources						15.914 / 2.650			
	TAS88	Low Voltage Commercial Time of Use Demand						15.914 / 2.650			
Residential	TAS31	Residential Low Voltage General					2.662				
	TAS92	Residential Low Voltage PAYG Time of Use		5.007		0.929					
	TAS101	Residential Low Voltage PAYG					1.874				
	TAS93	Residential Low Voltage Time of Use		5.007		0.929					
	TAS97	Residential Low Voltage Distributed Energy Resources						7.884 / 1.313			
	TAS87	Residential Time of Use Demand						7.884 / 1.313			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating					2.662				

[24] DUoS component only, locational TUoS component also applies

Tariff Class	Network tariff code	TUoS rates 2019-2020									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost					0.693				
	TAS63	Controlled Low Voltage Energy – with Night period only					0.557				
Unmetered	TASUMS	UMS Low Voltage General					3.720				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 031			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]

Table B4: Indicative Prices (2020-21) Network Use of System (NUoS) – Standard Control Services

Tariff Class	Network tariff code	NUoS rates 2020-2021								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	350.271	1.431	0 858	0.215				20.213	202.130
		Business High Voltage Embedded Network	76 214[25]						26.025 / 8.667		
	TAS15[26]	Business High Voltage kVA Specified Demand (>2MVA)	2,875.300	0.989	0 593	0.148				9.741	48.701
Irrigation	TAS75	Irrigation Low Voltage Time of Use	252.167	11.042	6 625	1.657					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	346.920				2.540		35.657		
		Business Low Voltage Embedded Network	76 214[27]						58.450 / 19.464		
	TAS89	Large Low Voltage Commercial Time of Use Demand	488.713						46 835 / 15.595		
Small Low Voltage	TAS22	Business Low Voltage General	52.388				10.317				
	TAS34	Business Low Voltage Nursing Homes	52.388				10.317				
	TASCURT	General Network – Business, Curtilage	52.388				10.317				
	TAS94	Business Low Voltage Time of Use	68.909	11.160	6 695	1.673					
	TAS98	Business Low Voltage Distributed Energy Resources	76.214					59.174 / 11.823			
	TAS88	Low Voltage Commercial Time of Use Demand	76.214					59.174 / 11.823			
Residential	TAS31	Residential Low Voltage General	52.687				10.324				
	TAS92	Residential Low Voltage PAYG Time of Use	57.601	17.595		3.346					
	TAS101	Residential Low Voltage PAYG	53.118				8.498				
	TAS93	Residential Low Voltage Time of Use	57.601	17.595		3.346					

[25] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[26] DUoS component only, locational TUoS component also applies

[27] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	NUoS rates 2020-2021									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	58.609					30.498 / 6.093			
	TAS87	Residential Time of Use Demand	58.609					30.498 / 6.093			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.511				6.325				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	12.405				1.811				
	TAS63	Controlled Low Voltage Energy – with Night period only	12.405				1.575				
Unmetered	TASUMS	UMS Low Voltage General	52.388				12.499				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0.117			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B5: Indicative Prices (2020-21) Distribution Use of System (DUoS) – Standard Control Services

Tariff Class	Network tariff code	DUoS rates 2020-2021								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	350.271	0.322	0.193	0.049				16.233	162.329
		Business High Voltage Embedded Network	76 214[28]						11.533 / 3.840		
	TAS15[29]	Business High Voltage kVA Specified Demand (>2MVA)	2,875.300	0.989	0 593	0.148				9.741	48.701
Irrigation	TAS75	Irrigation Low Voltage Time of Use	252.167	7.526	4 516	1.129					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	346.920				1.811		20.316		
		Business Low Voltage Embedded Network	76 214[30]						35 637 / 11.867		
	TAS89	Large Low Voltage Commercial Time of Use Demand	488.713						24.737 / 8.237		
Small Low Voltage	TAS22	Business Low Voltage General	52.388				7.749				
	TAS34	Business Low Voltage Nursing Homes	52.388				7.749				
	TASCURT	General Network – Business, Curtilage	52.388				7.749				
	TAS94	Business Low Voltage Time of Use	68.909	8.104	4 862	1.215					
	TAS98	Business Low Voltage Distributed Energy Resources	76.214					43 829 / 8.757			
	TAS88	Low Voltage Commercial Time of Use Demand	76.214					43 829 / 8.757			
Residential	TAS31	Residential Low Voltage General	52.687				7.756				
	TAS92	Residential Low Voltage PAYG Time of Use	57.601	12.764		2.426					
	TAS101	Residential Low Voltage PAYG	53.118				6.684				
	TAS93	Residential Low Voltage Time of Use	57.601	12.764		2.426					

[28] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[29] DUoS component only, locational TUoS component also applies

[30] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	DUoS rates 2020-2021									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	58.609					22 893 / 4.574			
	TAS87	Residential Time of Use Demand	58.609					22 893 / 4.574			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.511				3.757				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	12.405				1.140				
	TAS63	Controlled Low Voltage Energy – with Night period only	12.405				1.036				
Unmetered	TASUMS	UMS Low Voltage General	52.388				8.910				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 087			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]745

Table B6: Indicative Prices (2020-21) Transmission Use of System (TUoS) – Standard Control Services

Tariff Class	Network tariff code	TUoS rates 2020-2021									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)		1.109	0 665	0.166				3.980	39.801
		Business High Voltage Embedded Network							14.492 / 4.827		
	TAS15[31]	Business High Voltage kVA Specified Demand (>2MVA)									
Irrigation	TAS75	Irrigation Low Voltage Time of Use		3.516	2.109	0.528					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand					0.729		15.341		
		Business Low Voltage Embedded Network							22.813 / 7.597		
	TAS89	Large Low Voltage Commercial Time of Use Demand							22.098 / 7.358		
Small Low Voltage	TAS22	Business Low Voltage General					2.568				
	TAS34	Business Low Voltage Nursing Homes					2.568				
	TASCURT	General Network – Business, Curtilage					2.568				
	TAS94	Business Low Voltage Time of Use		3.056	1 833	0.458					
	TAS98	Business Low Voltage Distributed Energy Resources						15 345 / 3.066			
	TAS88	Low Voltage Commercial Time of Use Demand						15 345 / 3.066			
Residential	TAS31	Residential Low Voltage General					2.568				
	TAS92	Residential Low Voltage PAYG Time of Use		4.831		0.920					
	TAS101	Residential Low Voltage PAYG					1.814				
	TAS93	Residential Low Voltage Time of Use		4.831		0.920					
	TAS97	Residential Low Voltage Distributed Energy Resources						7.605 / 1.519			
	TAS87	Residential Time of Use Demand						7.605 / 1.519			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating					2.568				

[31] DUoS component only, locational TUoS component also applies

Tariff Class	Network tariff code	TUoS rates 2020-2021									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost					0.671				
	TAS63	Controlled Low Voltage Energy – with Night period only					0.539				
Unmetered	TASUMS	UMS Low Voltage General					3.589				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 030			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]

Table B7: Indicative Prices (2021-22) Network Use of System (NUoS) – Standard Control Services

Tariff Class	Network tariff code	NUoS rates 2021-2022								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	366.034	1.395	0 837	0.209				20.713	207.122
		Business High Voltage Embedded Network	78 500[32]						26.171 / 8.716		
	TAS15[33]	Business High Voltage kVA Specified Demand (>2MVA)	3,004.700	1.006	0 604	0.151				10.165	50.825
Irrigation	TAS75	Irrigation Low Voltage Time of Use	259.732	11.367	6 822	1.704					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	362.531				2.570		36.009		
		Business Low Voltage Embedded Network	78 500[34]						58.980 / 19.640		
	TAS89	Large Low Voltage Commercial Time of Use Demand	510.705						46 864 / 15.606		
Small Low Voltage	TAS22	Business Low Voltage General	53.960				10.562				
	TAS34	Business Low Voltage Nursing Homes	53.960				10.562				
	TASCURT	General Network – Business, Curtilage	53.960				10.562				
	TAS94	Business Low Voltage Time of Use	70.976	11.563	6.938	1.734					
	TAS98	Business Low Voltage Distributed Energy Resources	78.500					59.459 / 13.860			
	TAS88	Low Voltage Commercial Time of Use Demand	78.500					59.459 / 13.860			
Residential	TAS31	Residential Low Voltage General	54.268				10.500				
	TAS92	Residential Low Voltage PAYG Time of Use	59.329	17.827		3.480					
	TAS101	Residential Low Voltage PAYG	54.712				8.737				
	TAS93	Residential Low Voltage Time of Use	59.329	17.827		3.480					

[32] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[33] DUoS component only, locational TUoS component also applies

[34] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	NUoS rates 2021-2022									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	60.368					31 069 / 7.242			
	TAS87	Residential Time of Use Demand	60.368					31 069 / 7.242			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.706				6.530				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	12.777				1.841				
	TAS63	Controlled Low Voltage Energy – with Night period only	12.777				1.602				
Unmetered	TASUMS	UMS Low Voltage General	53.960				12.753				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0.119			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B8: Indicative Prices (2021-22) Distribution Use of System (DUoS) – Standard Control Services

Tariff Class	Network tariff code	DUoS rates 2021-2022									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	366.034	0.328	0.197	0.049				16.815	168.147
		Business High Voltage Embedded Network	78 500[35]						12.139 / 4.043		
	TAS15[36]	Business High Voltage kVA Specified Demand (>2MVA)	3,004.700	1.006	0 604	0.151				10.165	50.825
Irrigation	TAS75	Irrigation Low Voltage Time of Use	259.732	7.965	4.780	1.194					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	362.531				1 864		21.078		
		Business Low Voltage Embedded Network	78 500[37]						37 018 / 12.327		
	TAS89	Large Low Voltage Commercial Time of Use Demand	510.705						25.469 / 8.481		
Small Low Voltage	TAS22	Business Low Voltage General	53.960				8.071				
	TAS34	Business Low Voltage Nursing Homes	53.960				8.071				
	TASCURT	General Network – Business, Curtilage	53.960				8.071				
	TAS94	Business Low Voltage Time of Use	70.976	8.604	5.162	1.290					
	TAS98	Business Low Voltage Distributed Energy Resources	78.500					44.582 / 10.392			
	TAS88	Low Voltage Commercial Time of Use Demand	78.500					44.582 / 10.392			
Residential	TAS31	Residential Low Voltage General	54.268				8.009				
	TAS92	Residential Low Voltage PAYG Time of Use	59.329	13.143		2.564					
	TAS101	Residential Low Voltage PAYG	54.712				6.974				
	TAS93	Residential Low Voltage Time of Use	59.329	13.143		2.564					

[35] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[36] DUoS component only, locational TUoS component also applies

[37] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	DUoS rates 2021-2022									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	60.368					23 695 / 5.523			
	TAS87	Residential Time of Use Demand	60.368					23 695 / 5.523			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.706				4.039				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	12.777				1.188				
	TAS63	Controlled Low Voltage Energy – with Night period only	12.777				1.078				
Unmetered	TASUMS	UMS Low Voltage General	53.960				9.268				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 090			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B9: Indicative Prices (2021-22) Transmission Use of System (TUoS) – Standard Control Services

Tariff Class	Network tariff code	TUoS rates 2021-2022									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)		1.067	0 640	0.160				3 898	38.975
		Business High Voltage Embedded Network							14.032 / 4.673		
	TAS15[38]	Business High Voltage kVA Specified Demand (>2MVA)									
Irrigation	TAS75	Irrigation Low Voltage Time of Use		3.402	2 042	0.510					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand					0.706		14.931		
		Business Low Voltage Embedded Network							21.962 / 7.313		
	TAS89	Large Low Voltage Commercial Time of Use Demand							21.395 / 7.125		
Small Low Voltage	TAS22	Business Low Voltage General					2.491				
	TAS34	Business Low Voltage Nursing Homes					2.491				
	TASCURT	General Network – Business, Curtilage					2.491				
	TAS94	Business Low Voltage Time of Use		2.959	1.776	0.444					
	TAS98	Business Low Voltage Distributed Energy Resources						14 877 / 3.468			
	TAS88	Low Voltage Commercial Time of Use Demand						14 877 / 3.468			
Residential	TAS31	Residential Low Voltage General					2.491				
	TAS92	Residential Low Voltage PAYG Time of Use		4.684		0.916					
	TAS101	Residential Low Voltage PAYG					1.763				
	TAS93	Residential Low Voltage Time of Use		4.684		0.916					
	TAS97	Residential Low Voltage Distributed Energy Resources						7.374 / 1.719			
	TAS87	Residential Time of Use Demand						7.374 / 1.719			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating					2.491				

[38] DUoS component only, locational TUoS component also applies

Tariff Class	Network tariff code	TUoS rates 2021-2022									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost					0.653				
	TAS63	Controlled Low Voltage Energy – with Night period only					0.524				
Unmetered	TASUMS	UMS Low Voltage General					3.485				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 029			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]

Table B10: Indicative Prices (2022-23) Network Use of System (NUoS) – Standard Control Services

Tariff Class	Network tariff code	NUoS rates 2022-2023								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	382.505	1.356	0 813	0.204				20.944	209.449
		Business High Voltage Embedded Network	80 855[39]						26.288 / 8.753		
	TAS15[40]	Business High Voltage kVA Specified Demand (>2MVA)	3,139.900	1.009	0 605	0.152				10.298	51.493
Irrigation	TAS75	Irrigation Low Voltage Time of Use	267.524	11.704	7 022	1.756					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	378.845				2.593		36.439		
		Business Low Voltage Embedded Network	80 855[41]						60 324 / 20.087		
	TAS89	Large Low Voltage Commercial Time of Use Demand	533.687						46 866 / 15.607		
Small Low Voltage	TAS22	Business Low Voltage General	55.579				10.805				
	TAS34	Business Low Voltage Nursing Homes	55.579				10.805				
	TASCURT	General Network – Business, Curtilage	55.579				10.805				
	TAS94	Business Low Voltage Time of Use	73.105	11.959	7.176	1.794					
	TAS98	Business Low Voltage Distributed Energy Resources	80.855					59.732 / 15.913			
	TAS88	Low Voltage Commercial Time of Use Demand	80.855					59.732 / 15.913			
Residential	TAS31	Residential Low Voltage General	55.896				10.674				
	TAS92	Residential Low Voltage PAYG Time of Use	61.108	18.079		3.620					
	TAS101	Residential Low Voltage PAYG	56.353				8.988				
	TAS93	Residential Low Voltage Time of Use	61.108	18.079		3.620					

[39] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[40] DUoS component only, locational TUoS component also applies

[41] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	NUoS rates 2022-2023									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	62.179					31 698 / 8.445			
	TAS87	Residential Time of Use Demand	62.179					31 698 / 8.445			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.907				6.751				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	13.161				1.872				
	TAS63	Controlled Low Voltage Energy – with Night period only	13.161				1.628				
Unmetered	TASUMS	UMS Low Voltage General	55.579				13.016				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0.121			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B11: Indicative Prices (2022-23) Distribution Use of System (DUoS) – Standard Control Services

Tariff Class	Network tariff code	DUoS rates 2022-2023									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	382.505	0.329	0.197	0.050				17.134	171.346
		Business High Voltage Embedded Network	80 505[42]						12.708 / 4.231		
	TAS15[43]	Business High Voltage kVA Specified Demand (>2MVA)	3,139.900	1.009	0 605	0.152				10.298	51.493
Irrigation	TAS75	Irrigation Low Voltage Time of Use	267.524	8.407	5 045	1.261					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	378.845				1.911		21.888		
		Business Low Voltage Embedded Network	80 505[44]						39.196 / 13.052		
	TAS89	Large Low Voltage Commercial Time of Use Demand	533.687						26.208 / 8.727		
Small Low Voltage	TAS22	Business Low Voltage General	55.579				8.395				
	TAS34	Business Low Voltage Nursing Homes	55.579				8.395				
	TASCURT	General Network – Business, Curtilage	55.579				8.395				
	TAS94	Business Low Voltage Time of Use	73.105	9.098	5.459	1.365					
	TAS98	Business Low Voltage Distributed Energy Resources	80.855					45.344 / 12.079			
	TAS88	Low Voltage Commercial Time of Use Demand	80.855					45.344 / 12.079			
Residential	TAS31	Residential Low Voltage General	55.896				8.264				
	TAS92	Residential Low Voltage PAYG Time of Use	61.108	13.546		2.711					
	TAS101	Residential Low Voltage PAYG	56.353				7.275				
	TAS93	Residential Low Voltage Time of Use	61.108	13.546		2.711					

[42] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[43] DUoS component only, locational TUoS component also applies

[44] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	DUoS rates 2022-2023									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	62.179					24 564 / 6.544			
	TAS87	Residential Time of Use Demand	62.179					24 564 / 6.544			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	6.907				4.341				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	13.161				1.238				
	TAS63	Controlled Low Voltage Energy – with Night period only	13.161				1.122				
Unmetered	TASUMS	UMS Low Voltage General	55.579				9.640				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 093			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B12: Indicative Prices (2022-23) Transmission Use of System (TUoS) – Standard Control Services

Tariff Class	Network tariff code	TUoS rates 2022-2023									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)		1.027	0 616	0.154				3 810	38.103
		Business High Voltage Embedded Network							13.580 / 4.522		
	TAS15[45]	Business High Voltage kVA Specified Demand (>2MVA)									
Irrigation	TAS75	Irrigation Low Voltage Time of Use		3.297	1.977	0.495					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand					0 682		14.551		
		Business Low Voltage Embedded Network							21.128 / 7.035		
	TAS89	Large Low Voltage Commercial Time of Use Demand							20.658 / 6.880		
Small Low Voltage	TAS22	Business Low Voltage General					2.410				
	TAS34	Business Low Voltage Nursing Homes					2.410				
	TASCURT	General Network – Business, Curtilage					2.410				
	TAS94	Business Low Voltage Time of Use		2.861	1.717	0.429					
	TAS98	Business Low Voltage Distributed Energy Resources						14 388 / 3.834			
	TAS88	Low Voltage Commercial Time of Use Demand						14 388 / 3.834			
Residential	TAS31	Residential Low Voltage General					2.410				
	TAS92	Residential Low Voltage PAYG Time of Use		4.533		0.909					
	TAS101	Residential Low Voltage PAYG					1.713				
	TAS93	Residential Low Voltage Time of Use		4.533		0.909					
	TAS97	Residential Low Voltage Distributed Energy Resources						7.134 / 1.901			
	TAS87	Residential Time of Use Demand						7.134 / 1.901			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating					2.410				

[45] DUoS component only, locational TUoS component also applies

Tariff Class	Network tariff code	TUoS rates 2022-2023									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost					0.634				
	TAS63	Controlled Low Voltage Energy – with Night period only					0.506				
Unmetered	TASUMS	UMS Low Voltage General					3.376				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 028			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]

Table B13: Indicative Prices (2023-24) Network Use of System (NUoS) – Standard Control Services

Tariff Class	Network tariff code	NUoS rates 2023-2024								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	399.718	1.326	0.795	0.199				21.603	216.026
		Business High Voltage Embedded Network	83 281[46]						26.607 / 8.860		
	TAS15[47]	Business High Voltage kVA Specified Demand (>2MVA)	3,281.200	1.037	0 622	0.155				10.613	53.067
Irrigation	TAS75	Irrigation Low Voltage Time of Use	275.550	12.051	7 231	1.808					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	395.893				2.626		37.002		
		Business Low Voltage Embedded Network	83 281[48]						61.167 / 20.368		
	TAS89	Large Low Voltage Commercial Time of Use Demand	557.703						47 074 / 15.676		
Small Low Voltage	TAS22	Business Low Voltage General	57.246				11.062				
	TAS34	Business Low Voltage Nursing Homes	57.246				11.062				
	TASCURT	General Network – Business, Curtilage	57.246				11.062				
	TAS94	Business Low Voltage Time of Use	75.298	12.373	7.423	1.856					
	TAS98	Business Low Voltage Distributed Energy Resources	83.281					60.247 / 18.056			
	TAS88	Low Voltage Commercial Time of Use Demand	83.281					60.247 / 18.056			
Residential	TAS31	Residential Low Voltage General	57.573				10.864				
	TAS92	Residential Low Voltage PAYG Time of Use	62.942	18.386		3.773					
	TAS101	Residential Low Voltage PAYG	58.044				9.259				
	TAS93	Residential Low Voltage Time of Use	62.942	18.386		3.773					

[46] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[47] DUoS component only, locational TUoS component also applies

[48] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	NUoS rates 2023-2024									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	64.044					32.408 / 9.712			
	TAS87	Residential Time of Use Demand	64.044					32.408 / 9.712			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	7.114				6.999				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	13.555				1.908				
	TAS63	Controlled Low Voltage Energy – with Night period only	13.555				1.661				
Unmetered	TASUMS	UMS Low Voltage General	57.246				13.295				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0.123			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B14: Indicative Prices (2023-24) Distribution Use of System (DUoS) – Standard Control Services

Tariff Class	Network tariff code	DUoS rates 2023-2024								
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)	399.718	0.337	0 202	0.050				17.891	178.904
		Business High Voltage Embedded Network	83 281[49]						13.414 / 4.467		
	TAS15[50]	Business High Voltage kVA Specified Demand (>2MVA)	3,281.200	1.037	0 622	0.155				10.613	53.067
Irrigation	TAS75	Irrigation Low Voltage Time of Use	275.550	8.846	5 308	1.327					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand	395.893				1.967		22.822		
		Business Low Voltage Embedded Network	83 281[51]						40.761 / 13.573		
	TAS89	Large Low Voltage Commercial Time of Use Demand	557.703						27.106 / 9.026		
Small Low Voltage	TAS22	Business Low Voltage General	57.246				8.728				
	TAS34	Business Low Voltage Nursing Homes	57.246				8.728				
	TASCURT	General Network – Business, Curtilage	57.246				8.728				
	TAS94	Business Low Voltage Time of Use	75.298	9.601	5.760	1.440					
	TAS98	Business Low Voltage Distributed Energy Resources	83.281					46.321 / 13.883			
	TAS88	Low Voltage Commercial Time of Use Demand	83.281					46.321 / 13.883			
Residential	TAS31	Residential Low Voltage General	57.573				8.530				
	TAS92	Residential Low Voltage PAYG Time of Use	62.942	13.997		2.871					
	TAS101	Residential Low Voltage PAYG	58.044				7.591				
	TAS93	Residential Low Voltage Time of Use	62.942	13.997		2.871					

[49] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

[50] DUoS component only, locational TUoS component also applies

[51] Service charges applied to each exempt customer as defined in the AER (Retail) Exempt Selling Guideline Version 4

Tariff Class	Network tariff code	DUoS rates 2023-2024									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
	TAS97	Residential Low Voltage Distributed Energy Resources	64.044					25 523 / 7.649			
	TAS87	Residential Time of Use Demand	64.044					25 523 / 7.649			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating	7.114				4.665				
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost	13.555				1.291				
	TAS63	Controlled Low Voltage Energy – with Night period only	13.555				1.168				
Unmetered	TASUMS	UMS Low Voltage General	57.246				10.022				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 096			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]							[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]
		[redacted]	[redacted]				[redacted]			[redacted]	[redacted]

Table B15: Indicative Prices (2023-24) Transmission Use of System (TUoS) – Standard Control Services

Tariff Class	Network tariff code	TUoS rates 2023-2024									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
High Voltage	TASSDM	Business High Voltage kVA Specified Demand (<2MVA)		0.989	0 593	0.149				3.712	37.122
		Business High Voltage Embedded Network							13.193 / 4.393		
	TAS15[52]	Business High Voltage kVA Specified Demand (>2MVA)									
Irrigation	TAS75	Irrigation Low Voltage Time of Use		3.205	1.923	0.481					
Large Low Voltage	TAS82	Business Low Voltage kVA Demand					0 659		14.180		
		Business Low Voltage Embedded Network							20.406 / 6.795		
	TAS89	Large Low Voltage Commercial Time of Use Demand							19.968 / 6.650		
Small Low Voltage	TAS22	Business Low Voltage General					2.334				
	TAS34	Business Low Voltage Nursing Homes					2.334				
	TASCURT	General Network – Business, Curtilage					2.334				
	TAS94	Business Low Voltage Time of Use		2.772	1 663	0.416					
	TAS98	Business Low Voltage Distributed Energy Resources						13.926 / 4.173			
	TAS88	Low Voltage Commercial Time of Use Demand						13.926 / 4.173			
Residential	TAS31	Residential Low Voltage General					2.334				
	TAS92	Residential Low Voltage PAYG Time of Use		4.389		0.902					
	TAS101	Residential Low Voltage PAYG					1.668				
	TAS93	Residential Low Voltage Time of Use		4.389		0.902					
	TAS97	Residential Low Voltage Distributed Energy Resources						6.885 / 2.063			
	TAS87	Residential Time of Use Demand						6.885 / 2.063			
Uncontrolled	TAS41	Uncontrolled Low Voltage Heating					2.334				

[52] DUoS component only, locational TUoS component also applies

Tariff Class	Network tariff code	TUoS rates 2023-2024									
		Tariff description	Service Charge c/day	ToU Consumption Charge c/kWh			Consumption Charge c/kWh	Demand Charge c/kW/day (peak/off-peak)	Demand Charge c/kVA/day (peak/off-peak)	Specified Demand (Capacity) Charge c/kVA/day	
				Peak	Shoulder	Off-peak				Specified	Excess
Controlled Energy	TAS61	Controlled Low Voltage Energy – Off-Peak with afternoon boost					0.617				
	TAS63	Controlled Low Voltage Energy – with Night period only					0.493				
Unmetered	TASUMS	UMS Low Voltage General					3.273				
Street Lighting	TASUMSSL	UMS Low Voltage Public Lighting (lamp/watt/day)						0 027			
Individual Tariff Calculation (ITC)	TASCUS1	[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]
		[redacted]								[redacted]	[redacted]

Table B16: Indicative Prices – Metering Services

	Capital					Non-Capital				
Tariff ($ Nominal)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)
Domestic LV – single phase	6.235	6.353	6.474	6.597	6.723	3.287	3.350	3.414	3.479	3.545
Domestic LV – multi phase	12.938	13.184	13.435	13.691	13.951	6.822	6.952	7.084	7.219	7.356
Domestic LV – CT meters	16.011	16.316	16.626	16.943	17.265	8.442	8.603	8.767	8.934	9.104
Business LV – single phase	6.449	6.572	6.697	6.824	6.954	3.400	3.465	3.531	3.598	3.667
Business LV – multi phase	12.901	13.146	13.397	13.652	13.911	6.802	6.932	7.064	7.198	7.335
Business LV – CT meters	16.682	16.999	17.323	17.652	17.988	8.796	8.963	9.134	9.308	9.485
Other meters	11.385	11.602	11.822	12.047	12.277	6.003	6.117	6.234	6.352	6.473

Table B17: Indicative Prices – Public lighting services

Lighting type ($ nominal)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)
NEW – Major	47.432	49.425	51.438	53.472	55.527
NEW – Minor	35.147	37.012	38.896	40.800	42.723
14W LED	35.147	37.012	38.896	40.800	42.723
18W LED	37.059	38.944	40.848	42.772	44.716
18W LED Decorative	37.059	38.944	40.848	42.772	44.716
25W LED	37.299	39.186	41.093	43.019	44.966
25W LED Decorative	37.299	39.186	41.093	43.019	44.966
42W Compact Fluorescent	38.685	40.587	42.508	44.449	46.411
42W Compact Fluorescent - Bottom Pole Entry	38.685	40.587	42.508	44.449	46.411
70W High Pressure Sodium	38.900	40.804	42.728	44.671	46.635
100W High Pressure Sodium	45.917	47.893	49.891	51.909	53.947
150W High Pressure Sodium	48.374	50.376	52.399	54.443	56.508
250W High Pressure Sodium	49.621	51.636	53.672	55.729	57.808
400W High Pressure Sodium	50.205	52.227	54.269	56.332	58.417
250W High Pressure Sodium - Flood Light	53.447	55.501	57.578	59.675	61.795
400W High Pressure Sodium - Flood Light	52.729	54.776	56.845	58.935	61.047
100W Metal Halide	46.062	48.040	50.039	52.058	54.098
150W Metal Halide	48.923	50.931	52.959	55.009	57.080
250W Metal Halide	49.903	51.921	53.960	56.020	58.102
400W Metal Halide	54.747	56.815	58.905	61.017	63.150
250W Metal Halide - Flood Light	55.078	57.149	59.243	61.358	63.495
400W Metal Halide - Flood Light	54.747	56.815	58.905	61.017	63.150

Lighting type ($ nominal)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)
T5 Fluorescent 2 x 24W (obsolete)	41.073	42.999	44.946	46.912	48.899
1 x 20W Fluorescent (obsolete)	40.784	42.708	44.651	46.615	48.598
50W Mercury Vapour (obsolete)	36.431	38.309	40.206	42.124	44.061
80W Mercury Vapour (obsolete)	36.428	38.307	40.204	42.122	44.059
80W Mercury Vapour Decorative (obsolete)	53.303	55.356	57.431	59.527	61.645
125W Mercury Vapour (obsolete)	46.098	48.077	50.076	52.096	54.137
250W Mercury Vapour (obsolete)	46.553	48.536	50.540	52.565	54.610
400W Mercury Vapour (obsolete)	48.136	50.135	52.156	54.197	56.260

Table B18: Indicative Prices – Contract lighting services

Lighting type ($ nominal)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)
New – Major	15.389	16.548	17.720	18.904	20.100
New – Minor	14.615	15.767	16.931	18.106	19.294
14W LED	14.615	15.767	16.931	18.106	19.294
18W LED	14.456	15.606	16.768	17.942	19.128
18W LED Decorative	14.456	15.606	16.768	17.942	19.128
25W LED	14.456	15.606	16.768	17.942	19.128
25W LED Decorative	14.456	15.606	16.768	17.942	19.128
42W Compact Fluorescent	20.044	21.252	22.472	23.706	24.952
42W Compact Fluorescent - Bottom Pole Entry	20.044	21.252	22.472	23.706	24.952

Lighting type ($ nominal)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)
50W Mercury Vapour (obsolete)	19.912	21.119	22.338	23.570	24.815
80W Mercury Vapour (obsolete)	19.882	21.088	22.307	23.539	24.783
80W Mercury Vapour Decorative (obsolete)	19.882	21.088	22.307	23.539	24.783
125W Mercury Vapour (obsolete)	23.300	24.541	25.796	27.064	28.345
250W Mercury Vapour (obsolete)	23.300	24.541	25.796	27.064	28.345
400W Mercury Vapour (obsolete)	23.450	24.693	25.949	27.219	28.501
70W High Pressure Sodium	20.250	21.461	22.683	23.919	25.167
100W High Pressure Sodium	24.191	25.442	26.706	27.983	29.274
150W High Pressure Sodium	24.186	25.438	26.702	27.979	29.269
250W High Pressure Sodium	24.317	25.569	26.834	28.113	29.405
400W High Pressure Sodium	24.361	25.614	26.879	28.159	29.451
250W High Pressure Sodium - Flood Light	24.317	25.569	26.834	28.113	29.405
400W High Pressure Sodium - Flood Light	24.361	25.614	26.879	28.159	29.451
100W Metal Halide	24.188	25.439	26.703	27.980	29.270
150W Metal Halide	24.331	25.584	26.849	28.128	29.420
250W Metal Halide	24.331	25.584	26.849	28.128	29.420
400W Metal Halide	25.019	26.279	27.551	28.837	30.137
250W Metal Halide - Flood Light	24.331	25.584	26.849	28.128	29.420
400W Metal Halide - Flood Light	25.019	26.279	27.551	28.837	30.137
1 x 20W Fluorescent (obsolete)	20.017	21.225	22.446	23.679	24.924
2 x 20W Fluorescent (obsolete)	20.307	21.518	22.741	23.977	25.226
1 x 40W Fluorescent (obsolete)	20.036	21.244	22.465	23.698	24.944

Lighting type ($ nominal)	Indicative 2019-20 Price (c/day)	Indicative 2020-21 Price (c/day)	Indicative 2021-22 Price (c/day)	Indicative 2022-23 Price (c/day)	Indicative 2023-24 Price (c/day)
2 x 40W Fluorescent (obsolete)	20.345	21.556	22.780	24.016	25.266
3 x 40W Fluorescent (obsolete)	24.068	25.318	26.581	27.856	29.146
4 x 40W Fluorescent (obsolete)	24.375	25.628	26.894	28.174	29.466
4 x 20W Fluorescent (obsolete)	20.887	22.103	23.333	24.575	25.830
60W Incandescent (obsolete)	19.852	21.058	22.276	23.508	24.752
100W Incandescent(obsolete)	23.266	24.507	25.762	27.029	28.310

Table B19: Indicative Prices – Fee-based services

Service ($ nominal, GST exclusive)	Indicative 2019-20 Price ($)	Indicative 2020-21 Price ($)	Indicative 2021-22 Price ($)	Indicative 2022-23 Price ($)	Indicative 2023-24 Price ($)
Energisation, de-energisation, re-energisation and special reads					
Site visit – no appointment	81.96	85.53	89.26	93.15	97.21
Site visit – non-scheduled visit	148.21	154.67	161.41	168.44	175.78
Site visit – same day premium service	264.37	275.89	287.91	300.46	313.55
Site visit – after hours	375.76	392.13	409.22	427.05	445.66
Site visit – credit action or site issues	153.74	160.44	167.43	174.72	182.34
Site visit – credit action pillar box/pole top	254.44	265.53	277.10	289.17	301.77
Site visit – current transformer (CT) metering	145.82	152.17	158.80	165.72	172.94
Site visit – pillar box/pole top	254.44	265.53	277.10	289.17	301.77
Site visit – pillar box/pole top wasted visit	162.74	169.84	177.24	184.96	193.02
Transfer of retailer	-	-	-	-	-

Service ($ nominal, GST exclusive)	Indicative 2019-20 Price ($)	Indicative 2020-21 Price ($)	Indicative 2021-22 Price ($)	Indicative 2022-23 Price ($)	Indicative 2023-24 Price ($)
Meter test					
Meter test – single phase	208.37	217.45	226.93	236.82	247.14
Meter test – multi phase	387.97	404.88	422.52	440.93	460.15
Meter test – current transformer (CT)	427.88	446.53	465.99	486.29	507.48
Meter test – after hours	810.19	845.50	882.34	920.79	960.92
Meter test – wasted visit	88.64	92.50	96.53	100.74	105.13
Supply abolishment					
Remove service and meters	254.44	265.53	277.10	289.17	301.77
Supply abolishment – after hours	653.14	681.60	711.30	742.30	774.64
Supply abolishment – wasted visit	171.08	178.53	186.31	194.43	202.91
Tee-up					
Tee-up/Appointment	150.39	156.95	163.78	170.92	178.37
Tee-up/Appointment – after hours	653.14	681.60	711.30	742.30	774.64
Tee-up/Appointment – no truck – after hours	375.76	392.13	409.22	427.05	445.66
Tee-up/Appointment – wasted visit	104.05	108.58	113.31	118.25	123.40
Miscellaneous services					
Open turret	133.05	138.85	144.90	151.21	157.80
Data download	260.50	271.85	283.70	296.06	308.96
Alteration to unmetered supply	202.57	211.40	220.61	230.22	240.25
Meter relocation	158.49	165.39	172.60	180.12	187.97
Tiger tails – standard/multiphase	562.35	586.85	612.42	639.11	666.96
Tiger tails – scaffolding single phase	882.49	920.94	961.07	1,002.95	1,046.66

Service ($ nominal, GST exclusive)	Indicative 2019-20 Price ($)	Indicative 2020-21 Price ($)	Indicative 2021-22 Price ($)	Indicative 2022-23 Price ($)	Indicative 2023-24 Price ($)
Tiger tails – scaffolding multi phase	965.85	1,007.94	1,051.86	1,097.69	1,145.53
Miscellaneous service	121.46	126.76	132.28	138.05	144.06
Miscellaneous service – after hours	567.86	592.61	618.43	645.38	673.50
Miscellaneous service – wasted visit	98.29	102.58	107.05	111.71	116.58
Administration	49.66	51.82	54.08	56.44	58.90
Statutory right – access prevented	891.94	930.81	971.37	1,013.70	1,057.87
Tariff change	49.66	51.82	54.08	56.44	58.90
Emergency maintenance contestable meters	64.69	67.51	70.46	73.53	76.73
Emergency maintenance contestable meters – after hours	375.76	392.13	409.22	427.05	445.66
Meter recovery and disposal	93.55	97.63	101.88	106.32	110.95
Connection Establishment charges					
Creation of a NMI	43.18	45.06	47.03	49.08	51.21
Overhead service, single span - single phase	550.27	574.25	599.27	625.39	652.64
Overhead service, single span - multi phase	773.32	807.02	842.19	878.89	917.19
Underground service in turret/cabinet - single phase	195.81	204.34	213.25	222.54	232.23
Underground service in turret/cabinet - multi phase	238.26	248.65	259.48	270.79	282.59
Underground service with pole mounted fuse - single phase	416.99	435.16	454.12	473.91	494.56
Underground service with pole mounted fuse - multi phase	517.83	540.39	563.94	588.52	614.16
Basic connection – after hours	979.57	1,022.26	1,066.81	1,113.29	1,161.81
Connection establishment - wasted visit	170.97	178.42	186.20	194.31	202.78
Temporary disconnection charges					
Disconnect/reconnect overhead service for facia repairs - single phase	402.50	420.04	438.34	457.44	477.38

Service ($ nominal, GST exclusive)	Indicative 2019-20 Price ($)	Indicative 2020-21 Price ($)	Indicative 2021-22 Price ($)	Indicative 2022-23 Price ($)	Indicative 2023-24 Price ($)
Disconnect/reconnect overhead service for facia repairs - multi phase	485.86	507.03	529.13	552.18	576.24
Temporary disconnect/reconnect – retailer requested outage	387.96	404.87	422.51	440.92	460.13
Temporary disconnect/reconnect – after hours	832.48	868.76	906.62	946.12	987.35
Temporary disconnect/reconnect – wasted visit	194.10	202.56	211.38	220.60	230.21
Basic connection alteration					
Connection alteration – overhead single phase	324.89	339.05	353.83	369.24	385.34
Connection alteration – overhead multi phase	408.25	426.04	444.61	463.98	484.20
Connection of new consumer mains to an existing installation – underground single phase to turret	237.02	247.35	258.13	269.38	281.12
Connection of new consumer mains to an existing installation – underground single phase to pole	366.57	382.55	399.22	416.61	434.77
Connection of new consumer mains to an existing installation – underground multi phase to turret	283.37	295.71	308.60	322.05	336.08
Connection of new consumer mains to an existing installation – underground multi phase to pole	449.93	469.54	490.00	511.35	533.64
Augment single phase overhead service to multi phase supply	835.84	872.27	910.28	949.94	991.34
Augment multi phase overhead service to single phase supply	612.79	639.49	667.36	696.44	726.79
Augment single phase overhead service to underground supply (turret)	388.68	405.61	423.29	441.73	460.98
Augment multi phase overhead service to underground supply (turret)	472.04	492.61	514.07	536.47	559.85

Service ($ nominal, GST exclusive)	Indicative 2019-20 Price ($)	Indicative 2020-21 Price ($)	Indicative 2021-22 Price ($)	Indicative 2022-23 Price ($)	Indicative 2023-24 Price ($)
Augment single phase overhead service to underground supply (pole)	479.51	500.40	522.21	544.97	568.71
Augment multi phase overhead service to underground supply (pole)	580.35	605.64	632.03	659.57	688.31
Basic connection alteration – after hours	1,041.72	1,087.12	1,134.49	1,183.92	1,235.51
Basic connection wasted visit	189.43	197.69	206.30	215.29	224.68

Table B20: Proposed Tariffs for Quoted Services

Labour ($ nominal)	2019-20 Price ($/hour)	2020-21 Price ($/hour)	2021-22 Price ($/hour)	2022-23 Price ($/hour)	2023-24 Price ($/hour)
Asset Inspector	56.55	58.22	59.94	61.71	63.53
Cable jointer	59.62	61.38	63.19	65.05	66.97
Customer connections – commercial metering	74.07	76.25	78.50	80.82	83.21
Customer connections – service crew	65.72	67.66	69.66	71.72	73.84
Designer	77.64	79.94	82.30	84.72	87.23
Distribution electrical technician	65.51	67.45	69.44	71.49	73.60
Distribution linesman	58.16	59.88	61.64	63.46	65.34
Distribution linesman – live line	65.86	67.80	69.80	71.86	73.98
Distribution operator	73.78	75.96	78.20	80.51	82.88
Engineer	83.79	86.27	88.81	91.44	94.14
Senior engineer	96.46	99.30	102.23	105.25	108.36
Field service co-ordinator	70.66	72.74	74.89	77.10	79.38
General Administration	71.60	73.71	75.89	78.13	80.43

Labour ($ nominal)	2019-20 Price ($/hour)	2020-21 Price ($/hour)	2021-22 Price ($/hour)	2022-23 Price ($/hour)	2023-24 Price ($/hour)
Labourer – overhead	51.37	52.88	54.45	56.05	57.71
Meter reader	47.62	49.03	50.48	51.97	53.50
Project manager	87.24	89.82	92.47	95.20	98.01

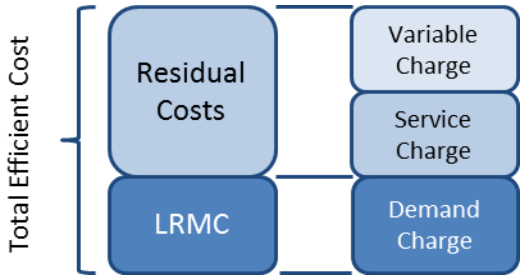
Appendix C: Designing cost reflective tariffs

Our network tariffs are set each year so as to achieve our pricing objectives like cost reflectivity, whilst taking into account forecasts of customer numbers, consumption and demand relating to each network tariff.

C.1 Targeting cost reflective tariffs

We determine the target network tariff parameters by:

- estimating the total efficient cost ($) for each tariff;
- estimating the long run marginal cost ($/kVA or $/kW) for each tariff,



- determining the required long run marginal cost revenues ($) for each tariff;
- calculating the residual costs ($), this being the difference between the total efficient cost and long run marginal cost revenues for each 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 tariff. In terms of the demand based time of use tariffs, most of the residual costs are recovered via the service charge and the off-peak demand charges.

Our tariffs are designed to meet full cost reflectivity and the Rules' requirement that tariffs be based on long run marginal cost and the recovery of our total efficient costs. Getting there involves a different approach for legacy tariffs compared to new tariffs:

- *Legacy tariffs* | Not all of 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 incrementally transition our legacy tariffs closer to the target tariff parameters.
- *New tariffs* | Any new tariffs introduced since the commencement of the National Electricity Rules requirements have been designed to immediately reflect the target network tariff parameters. Overall, to encourage customer uptake of our more cost reflective tariffs, these new tariffs recover relatively smaller shares of our residual costs than our less efficient legacy tariffs. This is a transitional approach that will be reviewed as the cost reflective tariffs become the dominant means of revenue recovery for us.

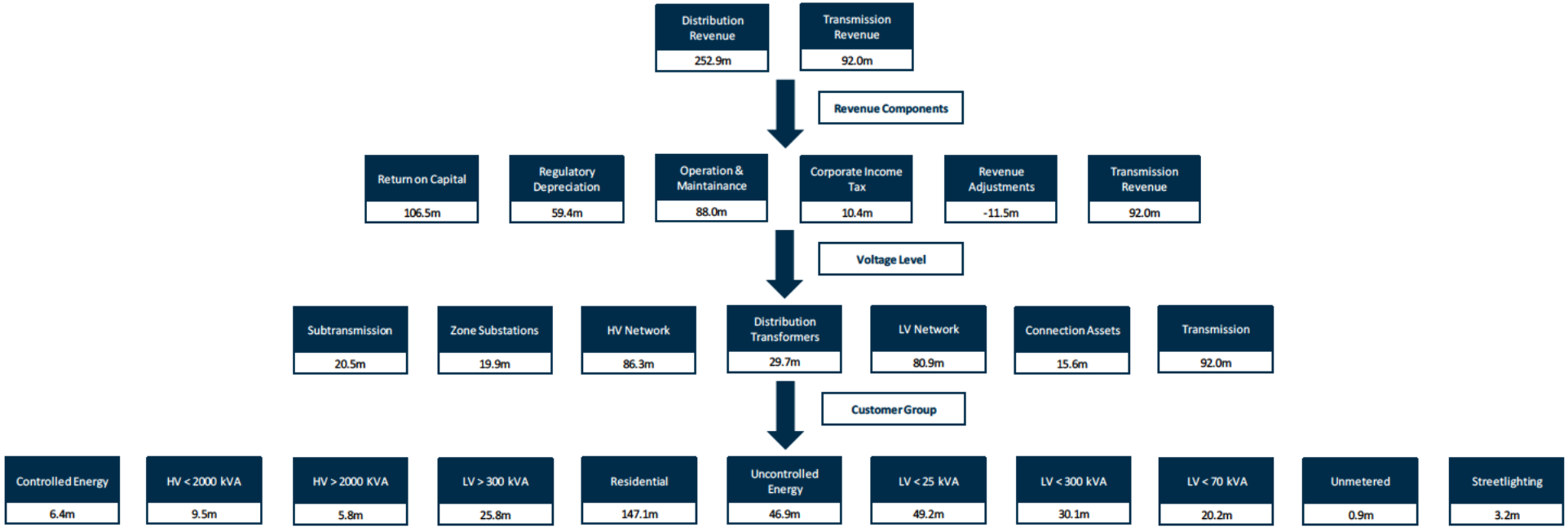
The checks and balances that we apply in our tariff setting process include:

- That overall forecast revenue, when summed across the network tariff classes, is no more than the revenue allowance approved by the AER after allowing for any under-or over-recoveries in prior years, adjustments for actual inflation and pass-throughs, such as the electrical safety levy;

- We have considered and managed annual bill impacts on our customers, and ensured the annual percentage changes in the tariffs classes are within the side constraints approved by the AER;
- 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 peak demand component of the tariff is set at a level to recover the long run marginal cost for that tariff.

This process is demonstrated in the figure below (Figure 16), which shows the anticipated revenue flows and customer recovery for the 2019-20 year.

Figure 16 2019-20 Revenue allocation from total revenue to customer group



AER feedback on our approach

The AER has provided feedback to all networks about looking to refine the approach to setting time of use windows. As part of this feedback, the AER has asked TasNetworks to consider time of use pricing windows that include the element of seasonality. Although seasonality does have the potential to provide a greater degree of cost reflectivity to address particular network constraints, our approach is informed by feedback received from our customers. Our customers have told us they do not support seasonal variations due to the potential impact of increased charges during the winter period and supported the simplicity of having no seasonal variation.

The AER approved our approach to targeting cost reflective tariffs over multiple TSS periods, and having regard to the customer impact principle in the Rules when doing so. For example, regarding our approach to legacy tariffs, it stated:

> *'TasNetworks stated it will realign the uncontrolled load tariff with the residential low voltage general network tariff by the end of the 2024–29 regulatory control period. However, it will seek to rebalance the tariffs more quickly where revenue determinations and price impacts allow. We approve of this approach by TasNetworks.*
>
> *We also note the controlled and uncontrolled load tariffs are not available to customers on the time of use consumption and demand tariffs. We would expect this practice to continue for future regulatory control periods.'*[53]

We have retained this approach in this 2019-24 TSS.

The AER also requested that as our cost reflective tariff implementation continues, we:

1. Collect and monitor data on whether alternative tariff designs can further enhance cost reflective tariff signals for certain customer types;
2. Provide an update on the timeframe and progression of our legacy tariff rebalancing to gradually remove cross subsidies; and
3. Consider, with the benefit of further experience, whether 'a more targeted approach for low voltage customers may be more reliable than the use of a 'one size' fits all approach to demand tariffs'.[54]

This 2019-24 TSS addresses all three elements of this feedback:

1. A key focus of this TSS period is gaining advanced meter data to continue to refine our tariff offerings. The new tariffs proposed in this TSS for early adopters of DER technologies have been informed by the data we obtained in our emPOWERing You Trial;
2. Section 1 (Strategy objectives and phasing) of this TSS shows the progression of our gradual tariff rebalancing. By 2024 we expect about a fifth of our customers will be on cost reflective tariffs, and that we will be over half way through our gradual rebalancing of legacy tariffs; and

[53] AER, Attachment 19 – Tariff structure statement | TasNetworks distribution final determination, April 2017, p40.

[54] Ibid, p.47.

3. Our new targeted incentives tariffs for residential and small business early adopters of DER, as well as our new embedded networks tariff, reflect a greater targeting of our demand tariff approach. Within the 2019-24 TSS period we are looking to target specific customer types who have unique connection, usage and future cost risk consequences for our network and the costs all our customers could bear in the future without fit-for-purpose targeting.

C.2 Calculating what cost reflectivity looks like

Demand charges by reference to LRMC

We determine the costs to be recovered from a tariff class, and design 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. Our network tariffs will also send pricing signals to customers about the cost of their use of the network through the selection of appropriate charging parameters.

We design 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 provide effective pricing signals to customers of excessive load at peak time;
- an 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. We address 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 and relevant replacement capital expenditure. This expenditure represents the investment in capacity required to meet the peak demand (and in updating our LRMC estimates we include a proportion of asset Replacement Expenditure (Repex)).

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. In the development of our LRMC estimates we do not develop separate investment and growth streams for each tariff class directly, rather we disaggregate data to enable LRMC to be determined at the tariff level.

The cost components of the estimates have been developed utilising the ten-year Program of Work forecasts, including those projects that are related to augmentation of the network as well as a proportion of forecast Repex (and associated incremental opex).

We then use an allocation (a reasonable cost allocation methodology) to allocate those costs to tariff classes and then to individual tariffs.

Our derived LRMC values do not take into account tariff diversity factors. We account for diversity when developing the price of any demand based tariff component. The following process is followed to calculate a price for the tariff charge parameter by which the LRMC is signalled:

1. determine the LRMC at a tariff level

2. calculate the contribution of that tariff towards network peak demand
3. determine the total amount to be recovered from the tariff with respect to the LRMC signal, which is the LRMC value multiplied by contribution of the tariff to system peak (taking into account diversity across tariffs)
4. divide the revenue in the previous step by the forecast quantity of the tariff charge parameter (accounting for diversity within the tariff) to determine price.

Diversity is accounted for as part of the tariff development process. Where a tariff has a high level of diversity associated with it (for example residential) forecast demand to be billed will be higher and the overall price will be reduced relative to the LRMC signal by a greater amount than for a tariff with an associated lower level of diversity. We currently have limited data on which to base our diversity factors, therefore we may be underestimating the level of residential diversity. We will analyse this further in light of the data provided from the emPOWERing You Trial.

AER feedback on our approach

The AER has approved our approach to calculating long run marginal cost. The AER also gave feedback to us and all networks in the following specific areas, which we have responded to below.

Demand measurement periods | The AER had some concern that Networks approaches to setting demand measurement periods (and associated charges) was ignoring the fact that not all customer's peaks occur coincident with the system peak.

> *'It is not an individual customer's peak demand that drives network costs, but the extent to which that customer's peak demand contributes towards network congestion and the network's co-incident demand. However, the network's co-incident demand may not be on the same day as an individual customer's highest demand. … We encourage distributors to collect data during this first tariff structure statement period that demonstrates the extent to which customers' peak demand typically occurs at the same time as the network also experiences its peak demand.'*[55]

TasNetworks' approach to setting demand charges for its peak demand charging windows already deals with the issue the AER has identified. The load and diversity factors that we use to allocate LRMC to the demand charges ensure we are designing our cost reflective LRMC demand charge signals to account for the contribution of customers on each demand tariff to the coincident system peak that drives our prices. Step 3 of our approach above explains this.

Long run marginal cost calculation method | The AER supported networks having the flexibility to calculate and apply long run marginal cost in the way that best suits the characteristics of their networks and customers. It also encouraged consideration of refinements or alternative methods where demand was decreasing, and the inclusion of certain replacement expenditures in addition to augmentation expenditure.

[55] AER, Attachment 19 – Tariff structure statement | TasNetworks distribution final determination, April 2017, p34.

'In addition to refining the specification of the method for estimating long run marginal cost, we encourage distributors to continue refining the way they apply these methods. We expect distributors to utilise inputs that better represent long run marginal cost. In particular we consider long run marginal cost estimates should incorporate certain types of replacement capital expenditure, and associated operating expenditure, in addition to augmentation expenditure (and associated operating expenditure).'[56]

TasNetworks notes that our existing approach to calculating long run marginal cost—the average incremental cost approach—has been applied using both augmentation and relevant replacement capital and operating expenditures.

Our current estimates of long run marginal cost

As noted above, it is a requirement that each of our tariffs 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. Setting network tariffs based on long run marginal cost will provide our customers with a cost reflective signal that encourages efficient electricity usage.

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 (the same program of work underpins our calculations as discussed in our regulatory proposal). The approach is also consistent with the approach adopted by other distribution networks and approved by the AER, as it is generally considered to be well suited to situations where there is a 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:

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

Where:

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

[56] AER, Attachment 19 – Tariff structure statement | TasNetworks distribution final determination, April 2017, p66.

- 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 as at 2019-20. We estimate this will increase by inflation in each year over the TSS period.

Estimated long run marginal cost

Tariff class	Network tariff	Long run marginal cost ($/kW)
		2019-20
High Voltage	Business High Voltage kVA Specified Demand (TASSDM)	101
	Business High Voltage Embedded Network	101
	Business High Voltage kVA Specified Demand >2MVA (TAS15)	118
Irrigation	Irrigation Low Voltage Time of Use (TAS75)	121
Large Low Voltage	Business Low Voltage kVA Demand (TAS82)	89
	Business Low Voltage Embedded Network	89
	Large Low Voltage Commercial Time of Use Demand (TAS89)	89
Small Low Voltage	Low Voltage Commercial Time of Use Demand (TAS88)	117
	Business Low Voltage Distributed Energy Resources	117
	Business Low Voltage General (TAS22)	147
	Business Low Voltage Nursing Homes (TAS34)	90
	General Network – Business, Curtilage (TASCURT)	147
	Business Low Voltage Time of Use (TAS94)	117
Residential	Residential Time of Use Demand Tariff (TAS87)	152
	Residential Low Voltage Distributed Energy Resources	152
	Residential Low Voltage General (TAS31)	152

Tariff class	Network tariff	Long run marginal cost ($/kW)
		2019-20
	Residential Low Voltage PAYG (TAS101)	152
	Residential Low Voltage PAYG Time of Use (TAS92)	152
	Residential Low Voltage Time of Use (TAS93)	152
Uncontrolled Energy	Uncontrolled Low Voltage Heating (TAS41)	105
Controlled Energy	Controlled Low Voltage Energy – Off-peak with afternoon boost (TAS61)	110
	Controlled Low Voltage Energy – Night period only (TAS63)	110
Unmetered	Unmetered Supply Low Voltage General (TASUMS)	149
Street Lighting	Unmetered Supply Low Voltage Public Lighting (TASUMSSL)	149

C.3 Designing our new tariffs

DER tariff design

We have designed our DER tariffs to meet the following objectives:

- Allow DER customers to benefit from their investment
- Ensure DER customers help lower rather than increase network costs in future, supporting lower bills for all customers
- The tariff is simple and capable of being understood by DER investors who we seek to encourage to opt-in to the tariff
- The tariffs are compliant with the Rules.

We tested these design principles with our PRWG in April 2017, as well as the proposal to offer the new DER tariffs on an opt-in rather than opt-out basis, which was driven by feedback from customers.

To achieve these objectives, we propose our DER tariff be based on the equivalent new time of use demand tariff introduced during the 2017-19 TSS, and modified to ensure that the average DER customer will benefit from choosing this tariff. This approach means a discount in terms of residual revenue recovery is applied to ensure that, on average, customers will realise a decrease in network charges relative to our equivalent default tariff for that tariff class. The figure below illustrates this design.

Figure 17 Demand tariff components and DER tariff design

Long run marginal cost demand charge | We have set the peak demand charge to reflect the same LRMC estimates of $152 and $117 per KW that we used in setting our time of use demand tariffs.

Residual costs | We propose to implement our discounting incentive through the off-peak charge and kept the service charge the same as the equivalent time of use demand tariffs. Compared to the option of discounting the service charge, we consider the off-peak demand discounting sends a better signal for customers to manage how they use our network and save network costs through load shifting into the off-peak period. We discussed various options for the level of discounting, the length of time this temporary discounting applies for and the funding of the discount with our PRWG, as explained in Appendix D.

Customer impacts | Using the average load profile of a customer from our emPOWERing You Trial with photovoltaic solar panels, we modelled indicative charge impacts for these customers compared to our default tariff for their tariff class. This analysis shows that these customers can potentially save

$114 per annum by choosing these tariffs that facilitate effective use of DER technology to manage demand.

Embedded network tariff design

We have designed our embedded network tariffs to meet the following objectives:

- Fairer prices which ensure embedded network customers pay an equitable share of our network costs while still allowing scope for embedded network owners and customers to realise savings.
- Compliance with the Rules.

To achieve these objectives, we propose to have two embedded network tariffs: one for embedded networks connecting at low voltages, and another for embedded networks connecting at high voltage.

Long run marginal cost demand charge | These tariffs are based on the equivalent new time of use demand tariff introduced during the 2017-19 TSS which achieves our LRMC compliance.

Recovering residual costs | The tariff components other than peak demand have been modified to ensure that our recovery of residual costs from customers downstream of the boundary meter means these customers pay a fair share of our network costs. We will set residual cost allocations so that the average residual cost recovery from end users within an embedded network is equivalent to the desired average residual cost recovery in our end state for similar customers that are not part of an embedded network.

Customer impacts | Because these are new tariffs targeted at customers that don't yet exist (embedded networks), there will not be any price impact from introducing these tariffs at cost reflective levels. We therefore propose to introduce these at our target level of cost reflectivity.

Appendix D: Engaging our customers in our pricing plan and new tariff designs

Our engagement in developing this second TSS has built upon feedback from and lessons we learned in our 2017-19 TSS.

AER feedback | Our 2017-19 TSS engagement received positive feedback from the AER, who noted that our engagement approach was transparent and thorough. Our proposal outlined the stakeholders we engaged with, the feedback we received and how that shaped our proposal.

That said, the AER did flag limited customer impact analysis and data included within our proposal, while acknowledging that customer impact analysis was provided to stakeholders throughout our engagement process and in our revised TSS in response to its draft decision. We were encouraged to include such analysis in future TSS submissions.

The customer impact analysis developed to underpin the 2017-19 TSS was created with sample data, due to the lack of advanced meters and, therefore, metering data relating to anything other than customers' cumulative energy consumption. The AER noted that this approach was appropriate while encouraging the use of actual data when it became available.

2019-24 engagement approach | Our engagement approach for this 2019-24 TSS has been similar to the approach previously utilised, with refinement for the above feedback. We have relied on our PRWG, our Customer Council and targeted end customer workshops to represent the voice of our customers when contemplating the development of our pricing plan and new tariffs.

2019-24 TSS and customer impact analysis | Customer impact analysis used during the consultation process is included in this 2019-24 TSS, to help ensure access to this information for all, not just those stakeholders who were included in our consultation process. We have sought to improve our customer impact analysis by drawing on data from our emPOWERing You Trial.

Pricing reform working group (PRWG) | Our engagement with our PRWG is summarised in the table below, including commentary on the TSS matters we consulted on and the form of engagement – using the IAP2 spectrum.[57] We also informed our Customer Council of our pricing strategy and sought feedback on a limited number of strategy elements.

PRWG engagement and outcomes

Meeting	Agenda	Form of engagement	Engagement outcomes
27 April 2017 Engage on 2019-24 TSS planning and test DER	2019-24 reform prioritisation and plan: • Outline context considerations • Explain customer group prioritisation; continuing current focus on gradual implementation, and now supporting targeted DER tariffs to ensure DER	Inform about continued application of existing reform transition and prioritisation for next	• Majority of PRWG members are suportive of new network tariffs specifically targetting DER customers and

[57] IAP2's Public Participation Spectrum is designed to assist with the selection of the level of participation that defines the public's role in any community engagement program. It is cited in the AER's customer engagement guideline as good practice, and is available at: https://www.iap2.org.au/About-Us/About-IAP2-Australasia-/Spectrum.

Meeting	Agenda	Form of engagement	Engagement outcomes
preferences	customers can benefit from their investment, and this investment also supports lower costs for existing customers over time • Engage on DER tariff design principles and options for pricing at marginal cost • Outline current trials and plans for future trials	Engage on new reform to target DER and incentives to increase demand based tariff take-up	discounted to incentivise take-up. • The majority of PRWG members are supportive of discounted demand based time of use tariffs to encourage small customers to move to more cost reflective tariffs. • Recovering the discounted costs from other customers needs to be carefully considered and customer impact should be limited.
2 August 2017 Share indicative prices	The purpose of the meeting was to: • Update PRWG members on our future expenditure plans and revenue implications • Consult with PRWG members on our Distribution Pricing Strategy for the 2019-2024 regulatory period, including 2019-24 draft price outcomes and illustrative customer impact analysis • Provide an opportunity for PRWG members to better understand Aurora Energy's Retail Pricing Strategy • Inform PRWG members of preliminary learnings from our emPOWERing You Trial and seek feedback on the impacy of a changing energy market and how this may impact developed customer groupings or clusters	Consult on the indicative price path and associated customer impact analysis Inform on incentive approach for new DER and demand based tariffs incentives	• PRWG members provided feedback on our distribution pricing strategy, for detail on feedback received refer Tariff Reform • PRWG members are interested in learning more about customer segmentation or clusters as well as network charge comparisons for each group (further information provided as part of the Nov PRWG meeting).
23 November 2017 Share draft TSS overview and alternative control services prices	The purpose of the meeting was to: • Outline of our pricing reform plans as they will be set out in the Tariff Structure Statement for the 2019-24 regulatory period. And discuss whether it reflects their engagement input. • Inform members of our indicative alternative control services prices for 2019-24 regulatory period, this includes metering, public lighting and some connection services. • Provide Aurora Energy the opportunity to update members regarding the Power of Choice metering reforms.	Inform members of our draft TSS and reflect on engagement input from members. Inform members of our indicative alternative control prices	• PRWG members provided feedback about the over-arching pricing reform plans set out in our *draft* TSS for the 2019-24 regulatory period. • PRWG members requested more information about Tasnetworks' responses to feedback previously provided by the PRWG and other stakeholders.

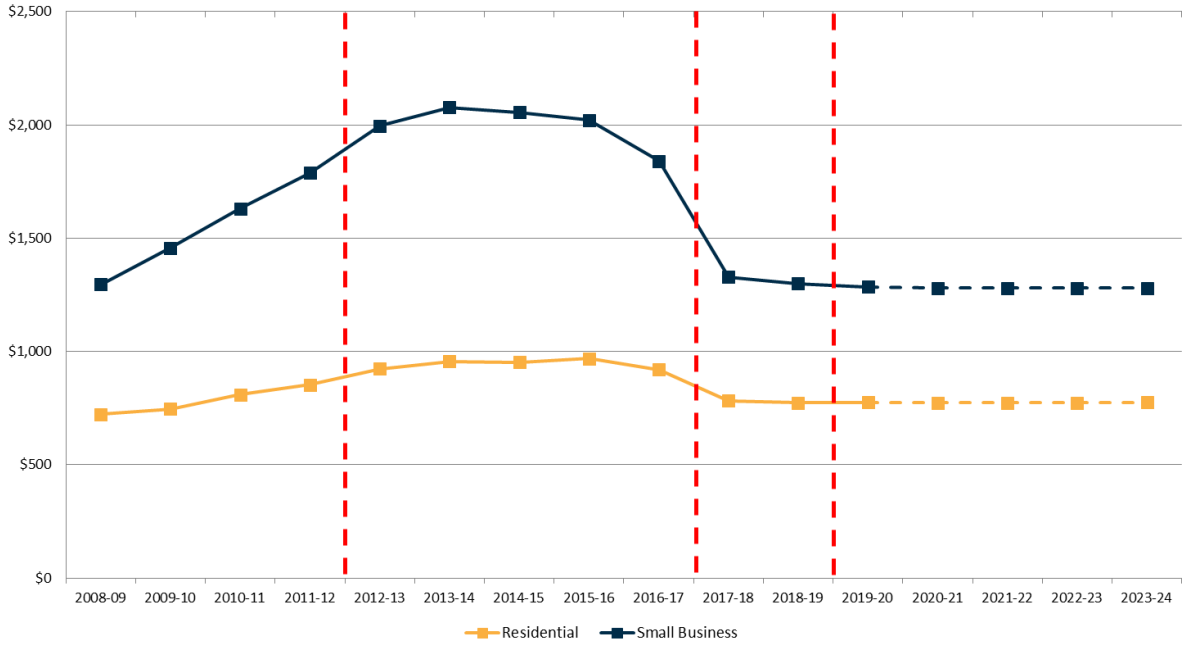
Appendix E: Customer charge comparison

Residential and Small Business Customers

Future price paths

Our expenditure plans as outlined in our Regulatory Proposal ensure modest increases for our distribution customers in the form of network charges of the 2019-24 TSS period. Consistent with our strategy of sustainable and predictable pricing, our proposal results in most customers' network charge increasing only slightly above CPI and remaining well below pre-merger levels. The chart below shows the historic and forecast price path for the average residential and small customers.

Figure 18 Indicative average annual network charge (June 2019 $m)



Comparing apples with oranges

Until now, comparing the impact for customers of changes in the cost of electricity, or comparing the delivered cost of electricity under different tariffs, was a relatively straight forward exercise. For most residential and small business customers it involved taking the amount of electricity consumed by the customer during a given period and multiplying it by a per unit price (kWh). To this figure would be added any fixed, usually daily, service charges and metering charges incurred over the same period.

Aligning with our pricing strategy of a gradual transition to cost reflective pricing, we want to help customers to understand what their charges may look like if they take up new tariffs. For customers who, through their retailer, switch to – or are thinking about switching to – one of our new time of use network tariffs (both demand and consumption based time of use tariffs), this means factors other than the consumption of electricity need to be taken into account.

Under these network tariffs, the way a customer uses electricity, becomes a key factor in determining how much they pay for their use of the network. And in the case of the new demand based tariffs, peaks in customers' usage of electricity (peak demand) at different times of the day throughout the billing period determine the variable component of their network charges.

This means that the 'typical customer' analysis done in the past is not directly comparable with the results produced on the basis of a customer's the time of use and demand.

Therefore, in this TSS we've presented two types of charge comparisons for residential and small business customers, one for customers on consumption based network tariffs (including the consumption based time of use tariff), and another for customers who are on a consumption based network tariff now, but considering a switch to a demand based time of use tariff. We've labelled the charge comparisons for customers on the flat consumption based network tariffs as "*Consumption tariff customers*", and called the comparisons for customers on the new demand based time of use tariffs "*Demand tariff customers*".

Am I an apple or an orange?

Nearly all residential and small business customers are currently supplied under consumption based network tariffs. So the charge comparison for *Consumption tariff customers* will show them what to expect over the coming five year TSS period in terms of changes in the network charges that contribute to the bill they get from their electricity retailer.

For customers considering a change to a new demand based time of use network tariff (via their retailer), it's the *Demand tariff* customer charge comparisons that will be the most informative.

This is because the meters in place at most homes and small businesses are accumulation meters that only record how much electricity is used over time.

To help our customers understand what a change to a time of use tariff might mean for them, we've been running the emPOWERing You Trial, which has involved the installation of advanced meters in 600 homes to gather the data needed to estimate people's network charges under our new tariffs. The households involved with the emPOWERing You Trial includes a range of customers, in terms of the amount of electricity used, household composition, dwelling size and the use of solar panels.

We've grouped trial participants into three broad categories of customer type that cover the full spectrum of residential customers. To use the projections of our network charges under the new demand based time of use tariffs or our consumption time of use tariff, you just need to figure out which category of customer you and your household most resemble.

Residential customers

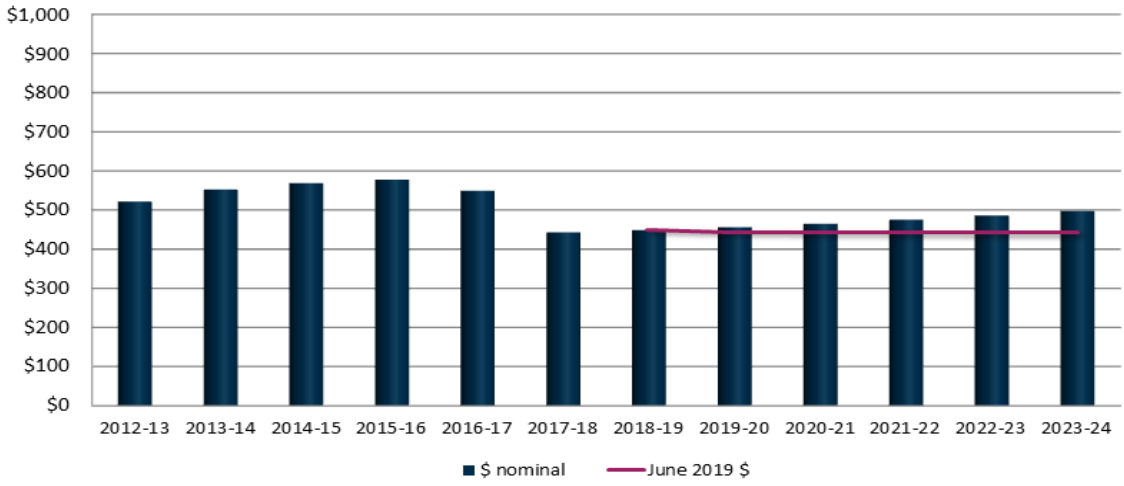
Consumption tariff customers

For residential customers, the standard connection to our electricity network involves a metered supply for the purpose of providing general power and light. By default, this service is currently assigned to the *Residential low voltage general* network tariff (TAS31) and the cost of that service recovered through a daily service charge and a per unit (kWh) charge for electricity delivered to the home from the network. Most residential customers are supplied under the TAS31 network tariff – although a small but growing number of customers are switching to our consumption based time of use tariff (TAS93), which became available as part of a retail standing offer in July 2016.

General power and light only

Just under 5 per cent of residential customers are assigned solely to the TAS31[58] network tariff and the following chart projects the annual network costs for these customers over the course of the 2019-24 TSS period. The projections are built on indicative prices for the daily service charge and per unit consumption charge (kWh) that make up the TAS31 tariff. The projections are based on a medium usage TAS31 only customer, using around 2,600 kWh of electricity per annum. For customers using more or less energy, the rate of change in their annual network costs may differ from the example presented below. But the direction of that change is likely to be the same.

Figure 19 Annual residential customer network charges (general power & light only)



[58] As at June 2017

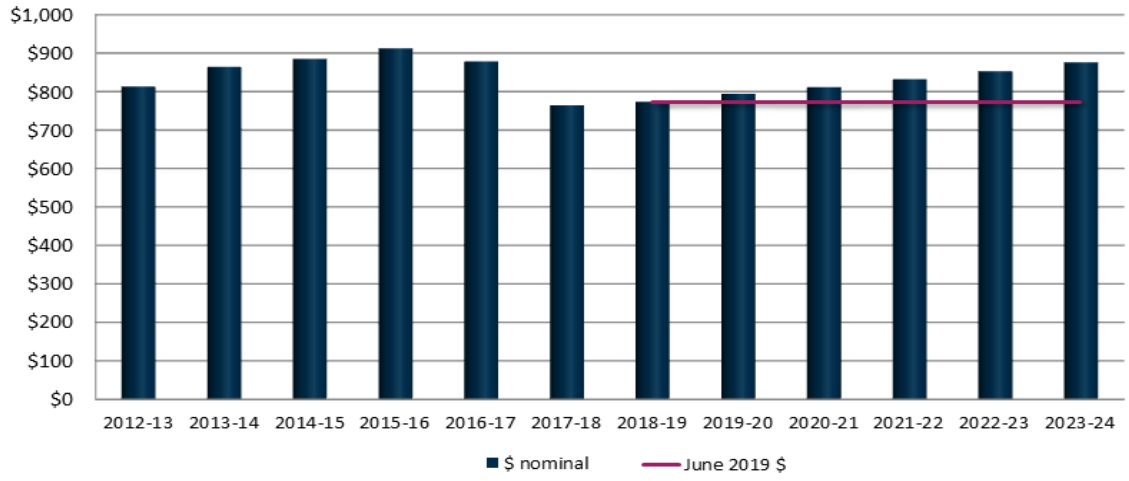
General power and light plus hot water and/or home heating

In addition to their standard connection to the network, most residential customers in Tasmania have a second metered 'supply'. In the vast majority of cases this second meter is assigned to the *Uncontrolled low voltage heating* network tariff (TAS41) used to provide energy for hot water systems and/or home heating. Around 76 per cent of residential customers are currently[59] supplied under a combination of TAS31 and TAS41.

The following chart projects the annual network costs likely to be borne by a residential customer on the TAS31/TAS41 combination of network tariffs during the 2019-24 TSS period. The comparison of annual network charges has been based on a medium consumption customer using around 7,300 kWh of electricity a year, and assumes that 46 per cent of the electricity used by the household is used for general power and light, and 54 per cent is used for home heating and/or hot water. It is also assumed that the same amount of electricity is used by the customer each year.

For customers who use more or less energy, the impact of price changes on their network costs may differ in terms of the rate of change, although the underlying trend in network costs is likely to be similar.

Figure 20 Annual network charges for a typical residential customer

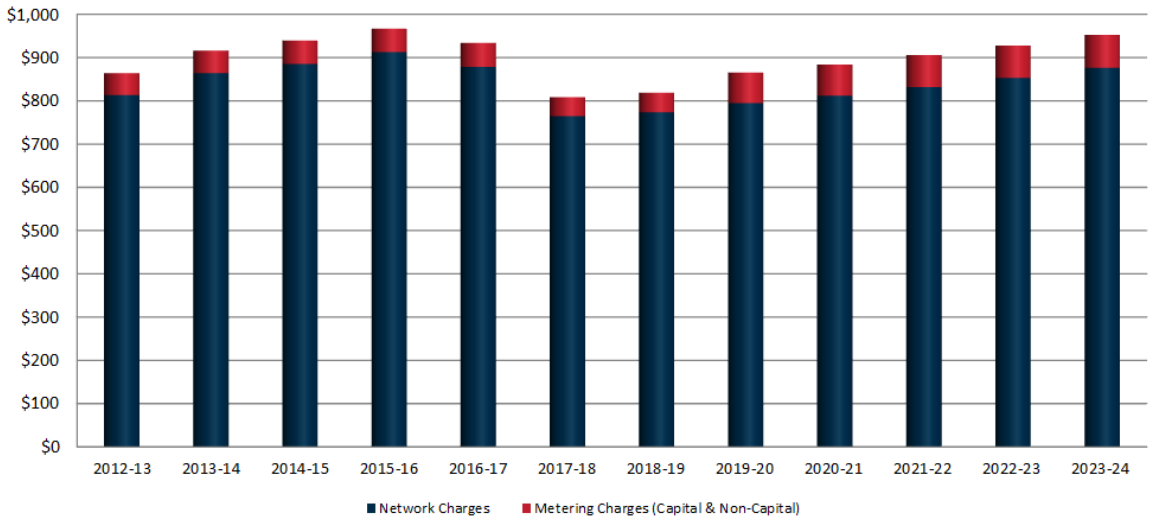


The above chart reflects the forecast network charges that would apply to the delivery of electricity via the shared network, and doesn't include alternative control metering charges, which don't vary with energy usage and don't make up part of our annual standard control revenue allowance as metering is classified by the AER as an alternative control service.

The following chart has been included in the TSS to provide residential customers – our biggest tariff class – with an additional charge comparison for the TAS31 and TAS41 tariff combination that also includes the alternative control metering charges.

[59] As at June 2017

Figure 21 Annual network and metering charges for a typical residential customer ($nominal)



Residential time of use

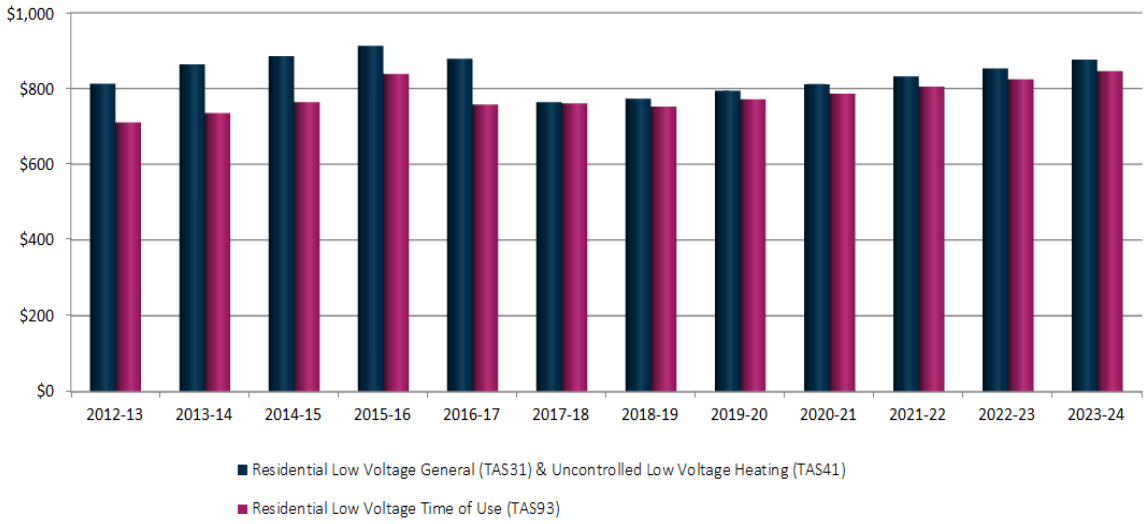
There is another *consumption based* tariff available to residential customers through their retailer, which distinguishes between the time of day that electricity is consumed and applies reduced network charges to each unit of power used in off-peak periods. The peak and off-peak periods for our Residential time of use network tariffs (TAS93) customers are the same as for our new demand tariffs, including weekends, which are deemed to be off-peak in their entirety.

TAS93 only recently became available as part of a retail standing offer (it has been available as a network tariff offer for some time), and already there are around 1,300 customers[60] who have made the switch to the new tariff. That might be less than one per cent of residential customers, but for customers who want to simplify their electricity supply arrangements and exercise greater control over their network charges without necessarily reducing their consumption of electricity, TAS93 may be a better option than their existing tariff(s).

The following chart forecasts the likely changes in network costs over the coming TSS period for a residential customer on the TAS93 network tariff (without any other complementary network tariffs) using around 7,300kWh per annum. The figure below does not allow for any change in the usage of electricity that might occur as a result of customer responsiveness to time of use price signals. Estimated network charges for the same customer using the combination of TAS31 and TAS41 are shown for comparison.

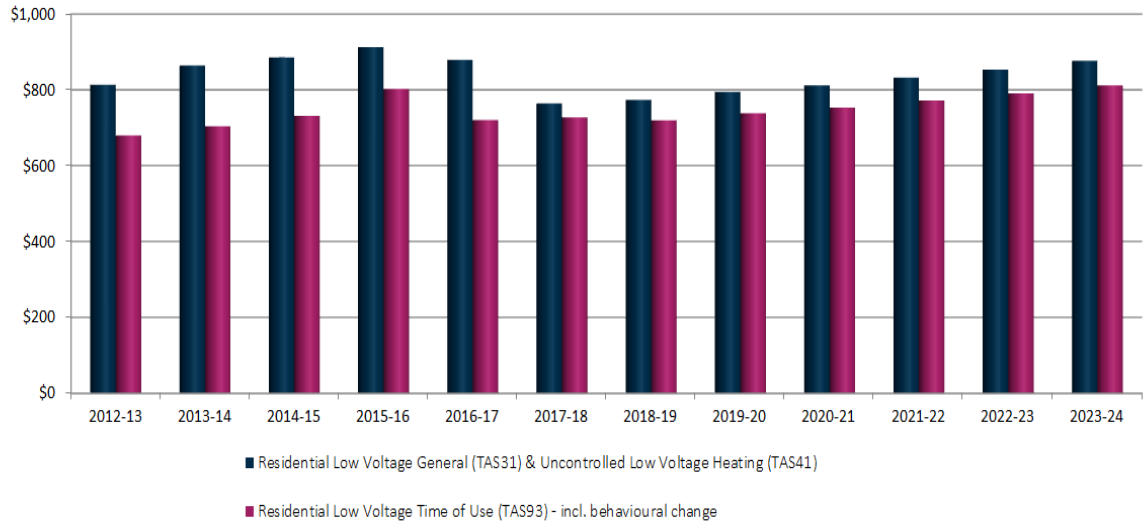
[60] As at June 2017

Figure 22 Annual network charges for a medium usage residential customer on TAS93 ($nominal)



The graph above shows that for a medium usage customer like this, even without any change in their use of electricity to take advantage of the cheaper network charges applying in off-peak times, TAS93 potentially reduces network charges compared to the current flat consumption based tariffs. If we overlay a 10 per cent consumption shift from peak to off-peak periods, the figure below shows a higher potential benefit for customers.

Figure 23 Annual network charges for a medium usage residential customer on TAS93, assuming behavioural change ($nominal)



Residential demand based time of use tariff

There is another option for residential customers through their retailer, our demand based time of use tariff (TAS87). This tariff options distinguishes between the time of day that electricity is used and applies reduced demand based network charges in off-peak periods. The peak and off-peak periods for the demand based time of use tariff (TAS87) is the same as for our consumption based time of use tariff (TAS93), including weekends, which are deemed to be off-peak in their entirety.

The following chart forecasts the likely changes in network costs over the coming TSS period for an average residential customer on the TAS87 network tariff (without any other complementary network tariffs) using around 7,300 kWh per annum. The figure below does not allow for any change in the usage of electricity that might occur as a result of time of use price signals. Estimated network charges for the same customer using the combination of TAS31 and TAS41 as well as TAS93 are shown for comparison.

Figure 24 Annual network charges for a medium usage residential customer on TAS87 ($nominal)

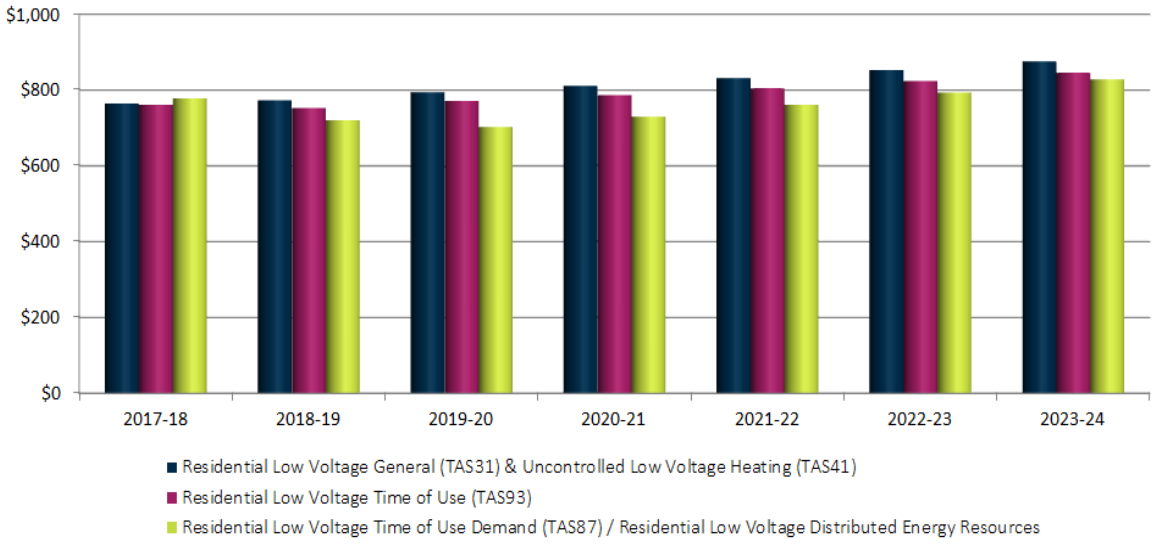
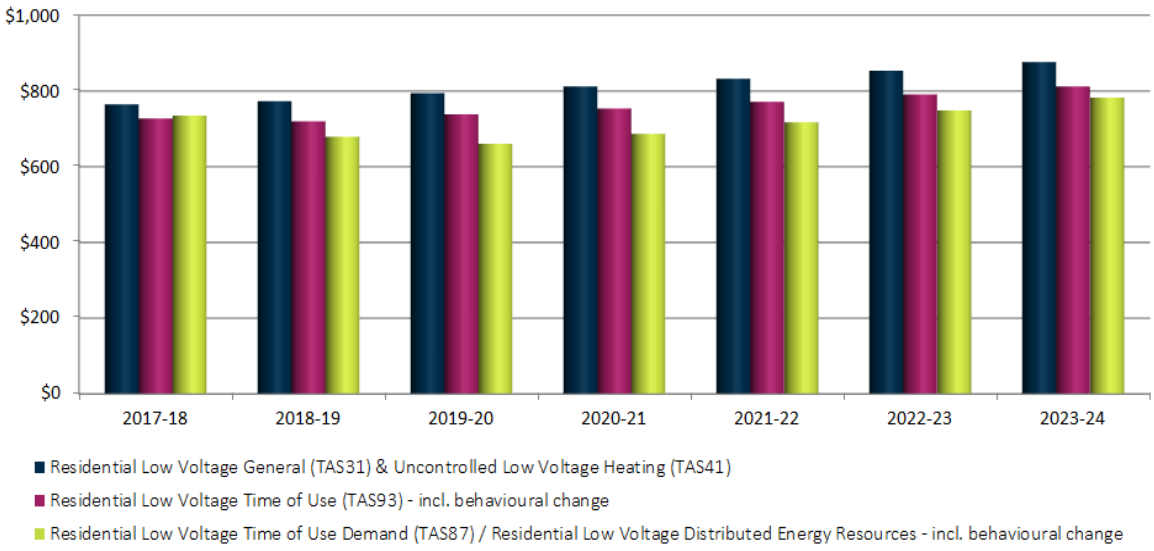


Figure 24 shows that for a medium usage customer like this, even without any change in their use of electricity to take advantage of the cheaper network charges applying in off-peak times, TAS87 potentially reduces network charges compared to the current flat consumption based tariffs, as well as in comparison to the time of use consumption tariff (TAS93). If we overlay a 10 per cent reduction in maximum demand during peak periods, the following chart (Figure 25) shows a potentially greater benefit for customers.

Figure 25 Annual network charges for a medium usage residential customer on TAS87, assuming behavioural change ($nominal)



Demand based tariffs and our emPOWERing You Trial

Based on information gathered through the emPOWERing You Trial, we've identified three broad customer types which between them are representative of the majority of residential customers. We identified them on the basis of a combination of their electricity usage patterns, plus the characteristics of their household.

We've used these three representative customer types to portray the sort of network charges that residential customers are likely to incur over the coming five year regulatory period from 2019 to 2024. The three residential representative customer types are defined below.

Single person households and working couples

One to two person households that use electricity for hot water and/or home heating yet consume comparatively small amounts of electricity and have relatively flatter load profiles when compared to other residential customers. Most customers in this group own or are in the process of buying their own home and are likely to have installed solar panels but are not connected to reticulated natural gas.

Families

Households comprising three or more occupants who use comparatively large amounts of electricity. Their load profile is only moderately peaky by residential standards, but is likely to have a more pronounced difference between the morning and afternoon/peaks than the other representative customer types, with the later peak being markedly higher than in the morning. The majority of customers in this group own or are in the process of buying their own home, but a proportion are renting. Those that are own their own homes are likely to have installed solar panels, while people in rental accommodation will typically not have access to solar panels. Most families will be using electricity either for hot water and/or home heating.

Retirees

Households that use a similar amount of electricity to those in 'Families', despite typically comprising less people. Customers in this group have peakier load profiles with more pronounced peaks first thing in the morning and the late afternoon/ evening. Customers in this group are likely to own or be in the process of buying their own home, which will often be a unit rather than a house. Only around half of the customers in this group use electricity for home heating and/or hot water and nearly a third are connected to natural gas – although virtually none have solar panels on their home. This group includes a significant representation of retiree couples.

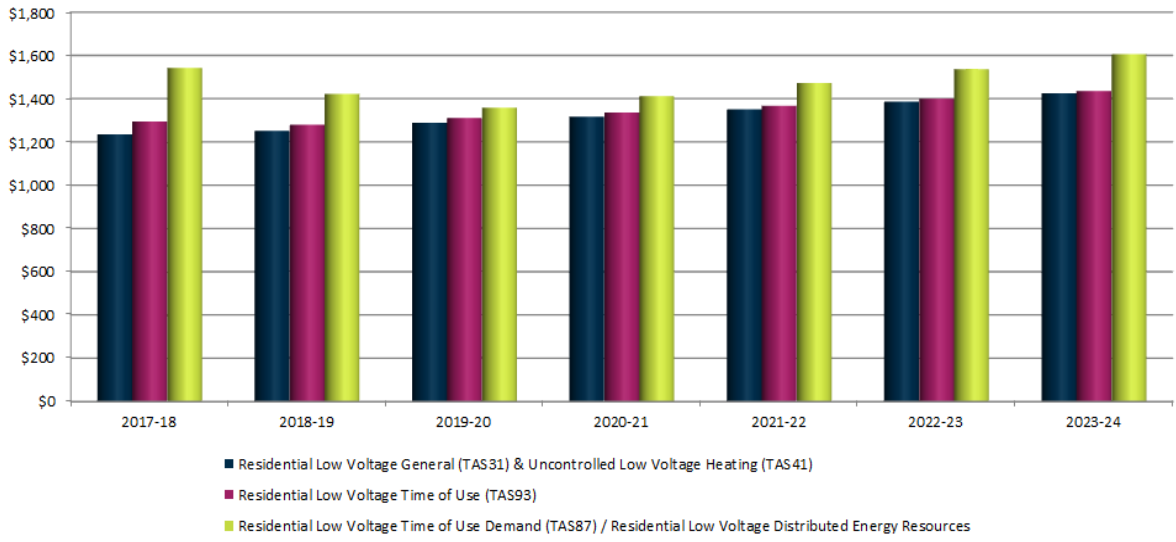
Charge Comparison

The following chart shows the estimated network charges that might be incurred by a single person household or working couple (Representative Customer 1) if they were to switch to one of our new demand based time of use network tariffs, via their retailer. For comparison, we have illustrated the estimated network costs the same household is likely to incur:

- under a combination of the current general light and power and hot water/home heating tariffs (TAS31 and TAS41); and
- under the consumption based time of use tariff (TAS93).

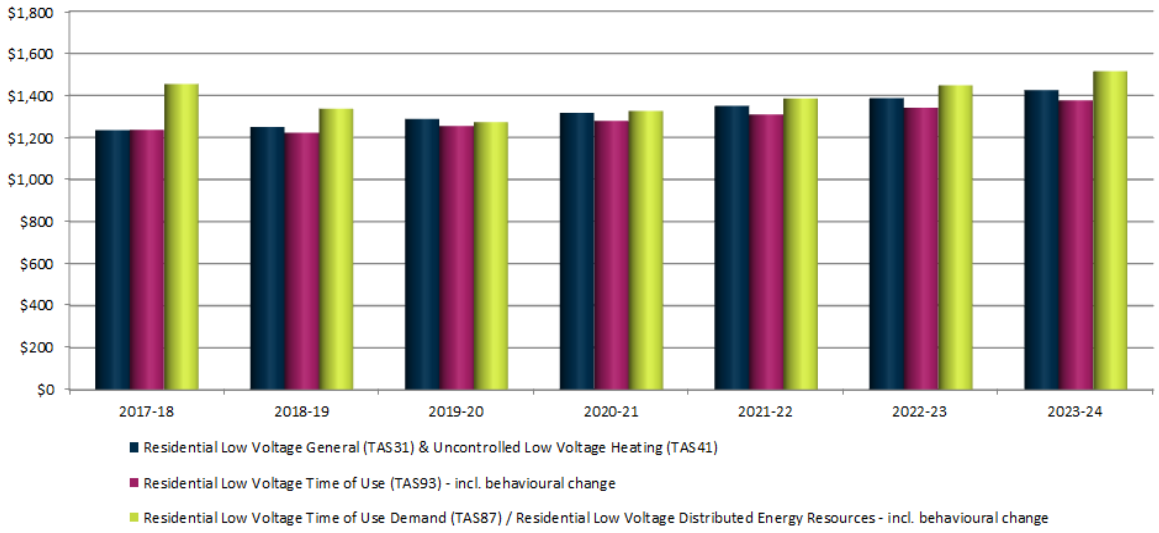
While the figure below shows the existing combination of TAS31 and TAS41 gives rise to lower network charges than the new demand based tariffs for this sort of customer, it is important to remember that the estimates of network charges under the new demand based tariffs don't factor in any change in electricity use by the customer in response to the peak versus off-peak pricing signals.

Figure 26 Annual estimated network charges - Single person households & working couples ($nominal)



Incorporating a 10 per cent shift of demand from peak to off-peak periods changes the outcome of the annual network charge comparison, demonstrated in the figure below. This small change in behaviour results in the both the time of use consumption and demand tariffs being increasingly attractive network tariff options.

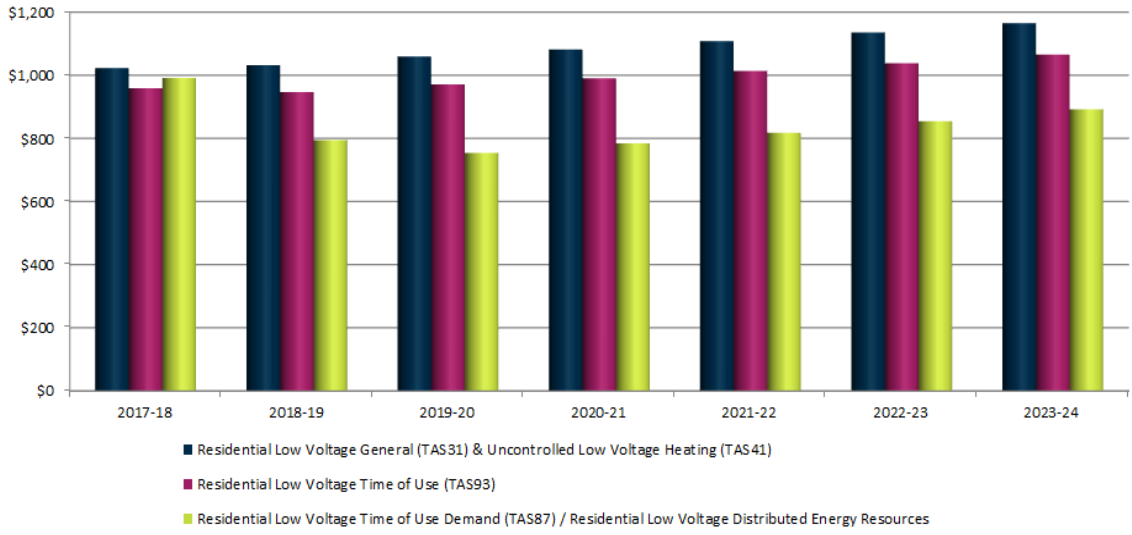
Figure 27 Annual estimated network costs - Single person households & working couples, assuming behavioural change ($nominal)



The following chart illustrates the estimated network charges likely to apply to a Family home supplied with electricity under one of our new demand based network tariffs, over the coming five year regulatory period covered by this TSS. For comparison, the estimated network costs the same household is likely to incur:

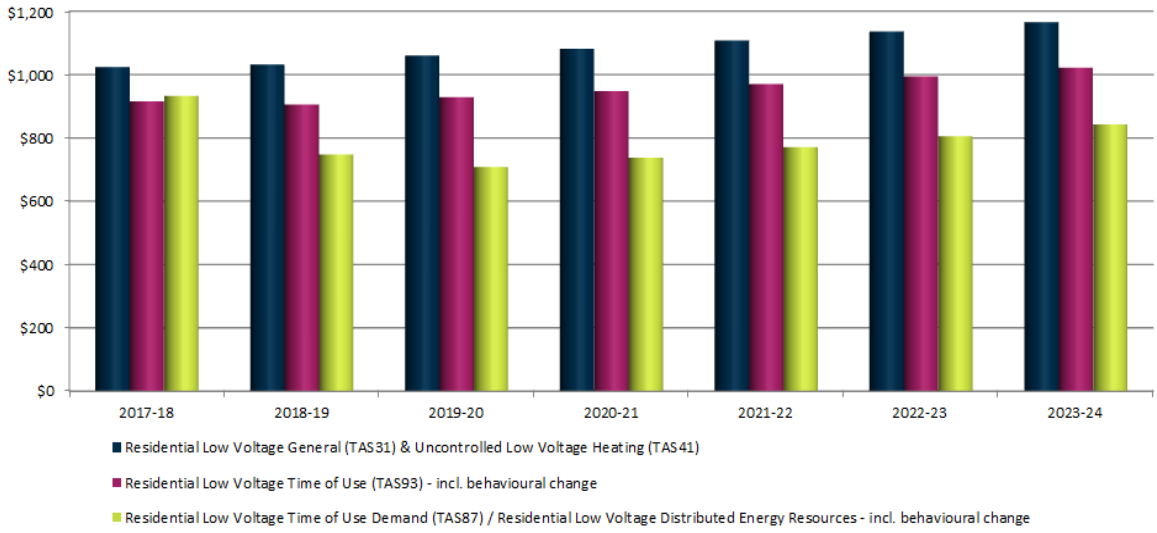
- under a combination of the current general light and power and hot water/home heating tariffs (TAS31 and TAS41); and
- under the consumption based time of use tariff (TAS93).

Figure 28 Annual estimated network costs – Families ($nominal)



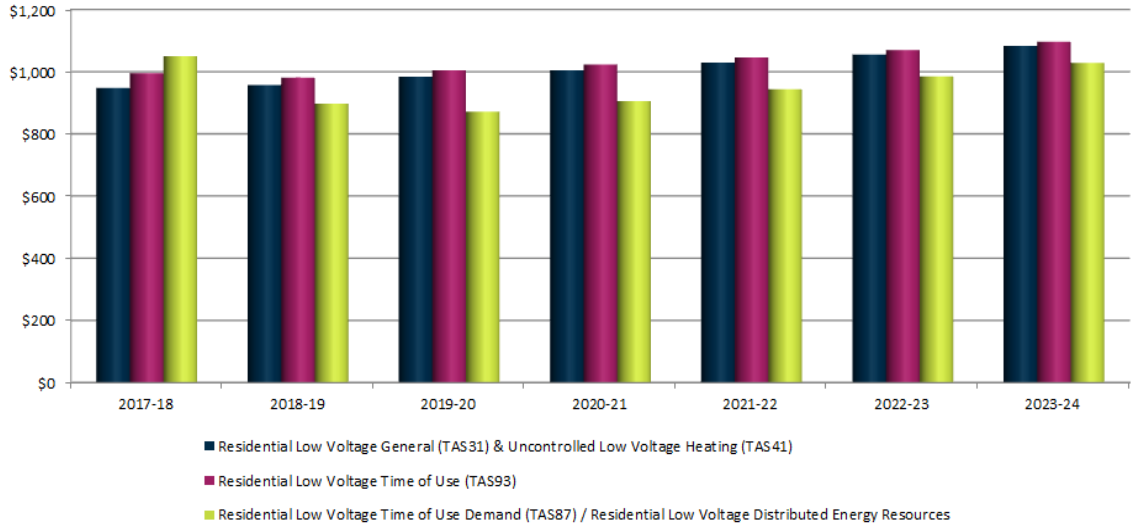
Even without changing their use of electricity in response to the peak and off-peak pricing signals which are a feature of the new demand based tariffs, our estimates suggest (as shown in the chart above) that a typical family could reduce their network charges by switching to one of the new demand tariffs through their retailer. The chart below shows the further benefit that could be realised with a 10 per cent shift of demand from peak to off-peak periods.

Figure 29 Annual estimated network costs – Families, assuming behavioural change ($nominal)



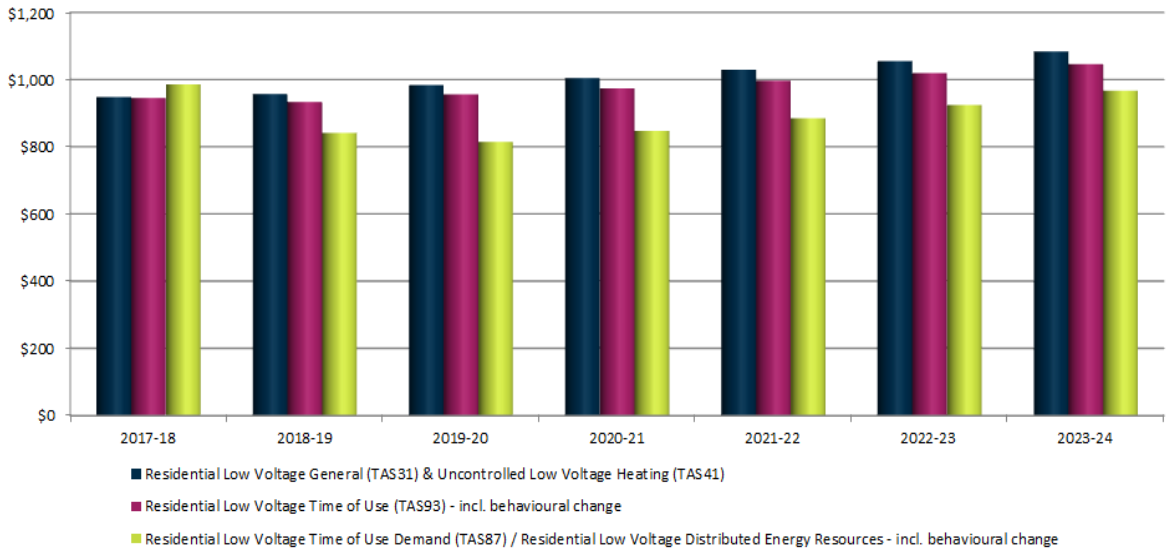
The following chart shows the estimated network charges that might be incurred by a retiree couple if they were to switch to one of our new demand based time of use network tariffs, via their retailer. The estimated network costs the same couple is likely to incur under a combination of the current general light and power and hot water/home heating tariffs (TAS31 and TAS41) is provided for comparison.

Figure 30 Annual estimated network charges – Retirees ($nominal)



Without making any allowance for changes in their use of electricity in response to the time of use price signals, the chart above shows that the TAS87 network tariff may potentially deliver savings, which can be increased as a result of behavioural change as shown in the chart below.

Figure 31 Annual estimated network charges – Retirees, assuming behavioural changes ($nominal)



Small businesses

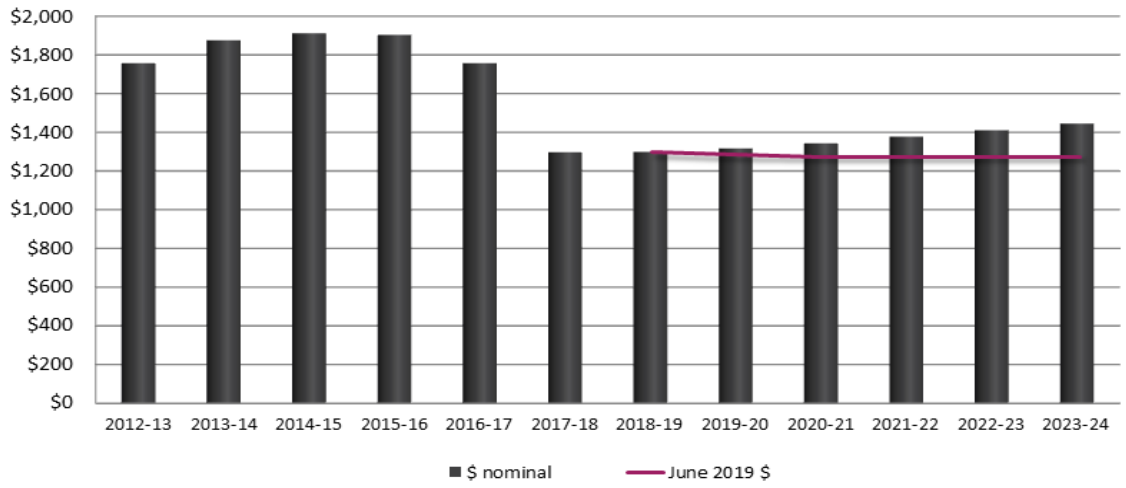
Consumption tariff customers

General power and light only

The *Business low voltage general* tariff (TAS22) is the network tariff assigned to most small businesses that are supplied with electricity at low voltage. Like residential customers, small business can also opt for a number of complementary, secondary tariffs, including the TAS41 tariff for uncontrolled low voltage heating and/or hot water.

However, 78.7 per cent of small business customers are supplied under the TAS22 network tariff only, so the following chart projects the network costs for an 'average' small business user of electricity consuming around 11,200 kWh per annum, supplied under the TAS22 network tariff.

Figure 32 Network costs for a typical small business on TAS22



Note: We've used an average consumption figure to produce the above chart, rather than a medium level of consumption (used for the residential customer analysis). This is because the range of consumption for customers on TAS22 is so broad that using a medium consumption figure would have meant little to the vast majority customers.

Small business time of use (consumption based)

There is a business *consumption based* time of use tariff (TAS94) available to small business customers, through their retailer, which distinguishes between the time of day that electricity is consumed, and applies reduced network charges to each unit of power used in off-peak periods. The peak and off-peak periods for TAS94 are outlined in Table A1 of this document.

For small businesses that operate around the clock, on weekends or in the early hours of the morning, or which have the scope to shift some of their energy consumption away from peak periods, TAS94 may offer greater control over their network costs than their existing tariffs, potentially without reducing their consumption.

TAS94 only became available as part of a retail standing offer in July 2016, but already there are nearly 4,500 small businesses that have made the switch to the new tariff, equating to over 10 per cent of low voltage business connections.

The following chart forecasts the likely changes in network costs over the coming TSS period for a small business customer on the TAS94 network tariff (without any other complementary network tariffs) using around 34,300 kWh per annum. Estimated network charges for the same customer under the TAS22 network tariff is shown for comparison.

Figure 33 Network costs for a high usage small business on TAS94 ($nominal)

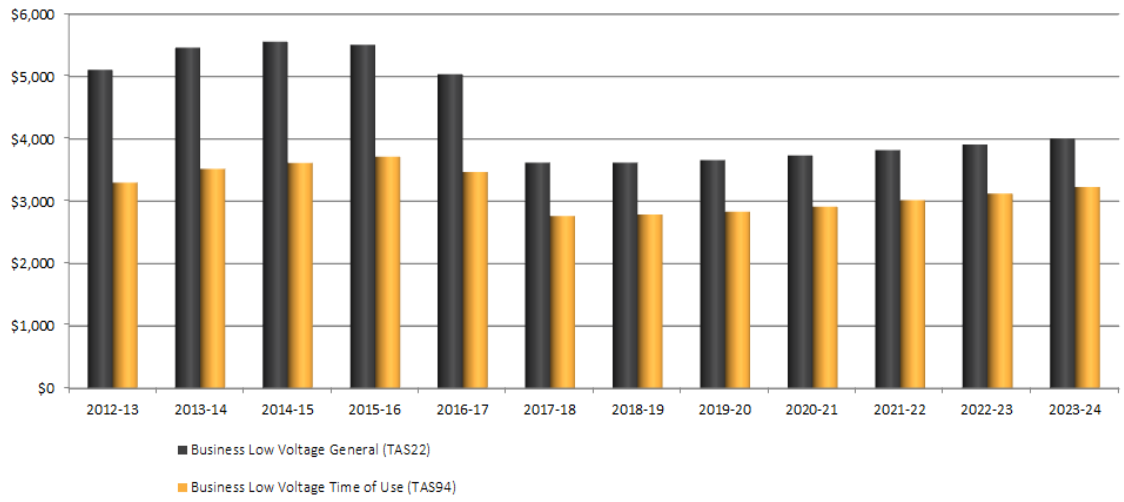


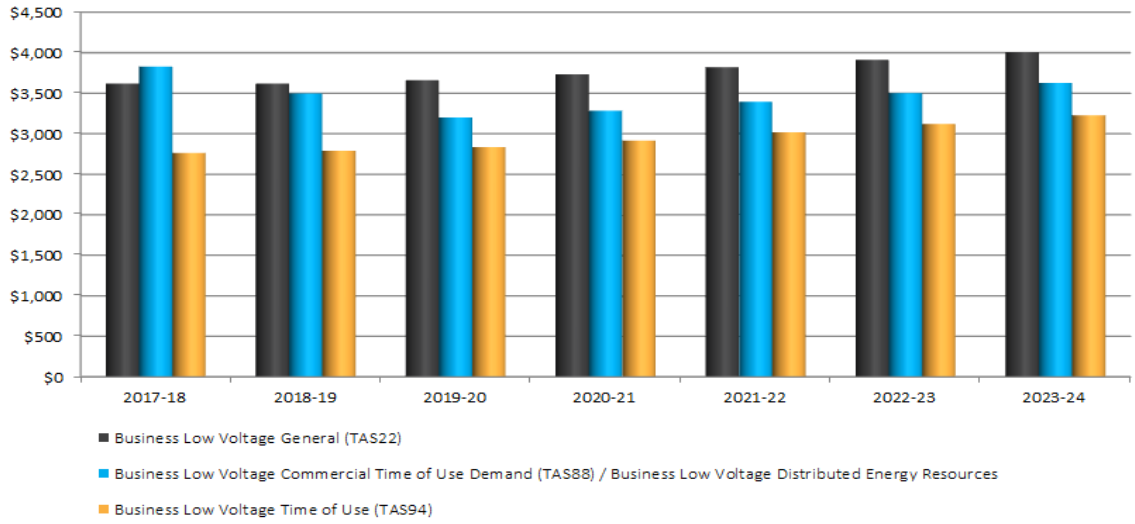
Figure 33 shows that for a high usage small business like this, even without any change in their use of electricity to take advantage of the cheaper network charges applying in off-peak times, TAS94 potentially leads to lower network charges than the current flat consumption based tariffs.

Demand tariff small business customers

On 1 July 2017, we introduced a new demand based time of use tariff as an opt-in choice for small businesses, via their retailer. That tariff features a daily service charge and two demand charges that reflect the business' maximum demand for electricity recorded during each monthly billing period. One demand charge applies to the maximum demand recorded during peak periods on weekdays, the other to off-peak periods (including weekends). So, instead of paying a flat rate for the delivery of their electricity all day, businesses on the new tariff are charged different rates depending on when and how they use electricity.

The following chart shows the forecast changes in network charges over the coming TSS period for a small business customer on the TAS88 network tariff using around 34,300 kWh per annum. Estimated network charges for the same customer under TAS22 and TAS94 are shown for comparison. It shows that, for a high usage small business like this, even without any reduction in their level of demand during peak times of the day when higher network charges apply, TAS88 or TAS94 potentially represent lower network charge options than the current flat consumption based TAS22 tariff. However, as there is a wide range of usage profiles within this customer class, customers should consider their energy usage and discuss their tariff options with their retailer.

Figure 34 Annual network charges for a high usage small business on TAS88 ($nominal)



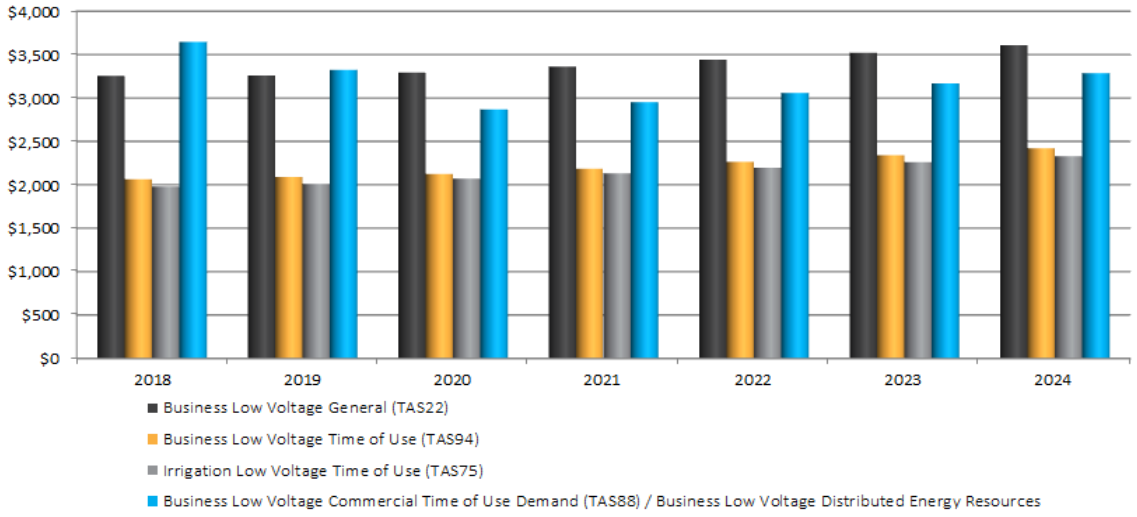
Irrigators

For some time, primary producers have had access to a dedicated irrigation tariff (TAS75), which is a consumption based time of use tariff consisting of a daily service charge and a charge for each unit of energy consumed (kWh). The consumption charge varies depending on whether energy is consumed during pre-defined peak, off-peak or shoulder periods of the day, which are defined differently in summer and winter (refer Table A1 of this document).

As well as the dedicated irrigation tariff, irrigation customers can also access a number of network tariffs that are available to any customer who takes a low voltage supply (where that supply is not being used to provide power to premises that are wholly or primarily used as a residence). Those options include the general business low voltage network tariff (TAS22), the consumption based low voltage time of use tariff for businesses (TAS94) and a low voltage time of use demand tariff (TAS88), which features a demand charge that doesn't vary during the course of the year.

The chart below shows forecasts of the forecast network charges for the coming TSS period for an average usage irrigator using around 30,700 kWh per annum, across a selection of the network tariffs available to irrigators. It should be noted that the network charges forecast in the chart don't reflect differences in electricity usage that might occur in response to the different pricing signals in each of the tariffs, in terms of time of use and/or peaks in demand, and are based on a limited sample of customers. This analysis however shows that for the average usage irrigation customer TAS75 remains an attractive network tariff option, however depending on usage patterns the consumption based low voltage time of use tariff for businesses (TAS94) is also an option which may be considered by our irrigation customers.

Figure 35 Annual network charges for an average usage irrigator ($nominal)

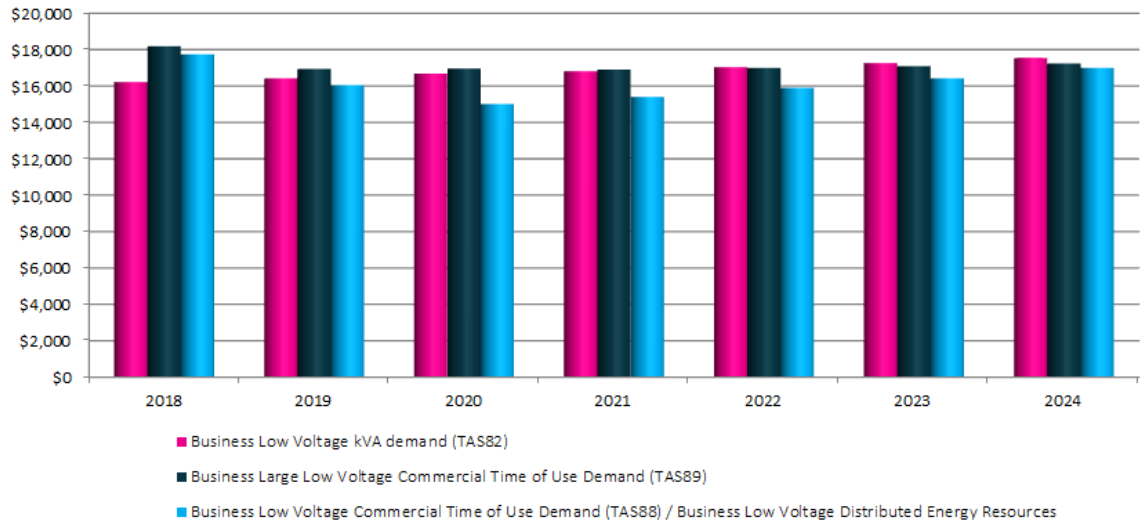


Large businesses

Large low voltage businesses

Figure 36 (below) shows a comparison of the annual network charges likely to be incurred under three different tariffs by large businesses with a low voltage multi-phase supply. The example business uses approximately 268,500 kWh of electricity per annum and has an Anytime Maximum Demand of around 67 kVA, making it a 'medium' sized customer amongst large businesses in Tasmania.

Figure 36 Annual network charges for low voltage large businesses ($nominal)



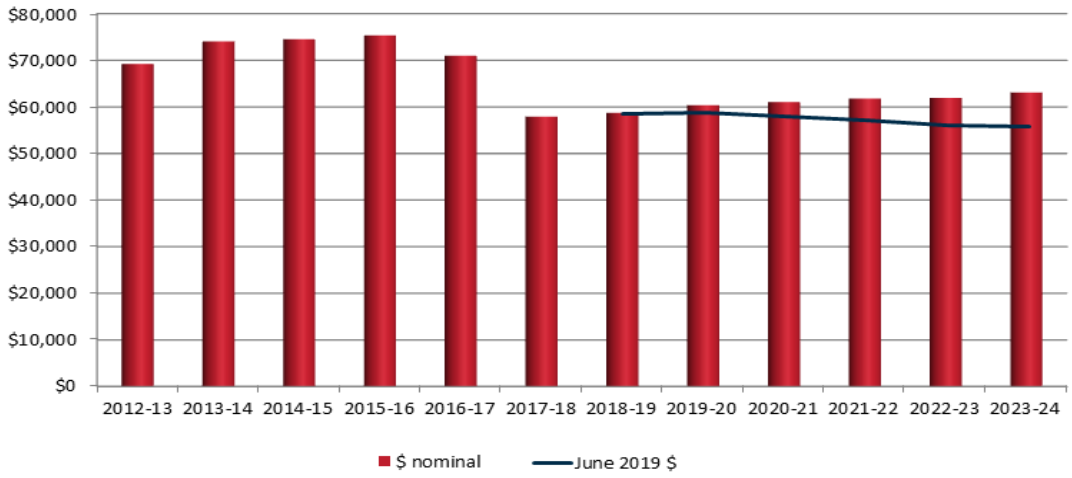
Large high voltage businesses

For large businesses taking supply at high voltage, we can only provide indicative network charges for businesses using the TASSDM tariff (Business high voltage kVA specified demand).

The TAS15 tariff (Business high voltage kVA specified demand) is also available to businesses connecting to the distribution network at high voltages. However, the tariff applies to a very small number of customers and incorporates site specific Transmission Use of System charges that depend on the characteristics of the connection, meaning that there isn't really an indicative customer that can be used as a basis for comparing network charges over time.

The following chart (Figure 37) outlines the forecast network charges of a customer assigned to the TASSDM network tariff that uses around 1,990 MWh per annum with a specified maximum demand of around 550 kVA.

Figure 37 Annual network charges for high voltage large businesses



Appendix F: Setting time of use time windows

In addition to deciding on the components which make up our various network tariffs, for some tariffs we also need to set the time periods that apply to any components of those tariffs which take time of use into account. These periods typically reflect the level of demand collectively being placed on the electricity network by all customers because, in the long term, the cost of providing the network is driven by having to build the network to handle peaks in demand.

We set the time periods applying to tariff components with a time of use element by looking at our system load profiles to work out when in the day and week our system typically experiences peak loads or capacity constraints. Time can then be divided into peak, shoulder or off-peak periods, and different prices applied to use of the network during those periods.

The chart below shows a typical 24 hour demand profile for the entire distribution network, recorded on a cold winter's day.

Figure 38 Network demand profile – all customers

Choosing the time of use periods

Prior to lodging our TSS submission with the AER for the 2017 – 2019 regulatory period, we consulted with our customers and stakeholders on the time of use periods that should apply to the new network demand based tariffs which we were planning to introduce. 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.

Following is a 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.

Maximum demand

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 demand based network tariffs was guided by our knowledge about when the network is most heavily loaded. While the load profile in local areas of the network may differ slightly, 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. In part, the decision was driven by the requirement to use postage stamp pricing, which means that setting prices that recognise local network constraints isn't possible. This was done partly for reasons of simplicity and partly because we are required to charge the same network tariffs for all customers within a particular tariff class that use less than 150 Megawatt hours per annum, regardless of their location.

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.

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.

Some customer advocates have argued that the time of use periods that have been chosen do not align with their constituents requirements for energy, and that the timing of their business activities and, therefore, their consumption of energy, is unable to be moved in response to network pricing signals. TasNetworks acknowledges that it is not possible for our time of use periods to align perfectly with the commercial activities or lifestyles of all customers. However, it is the collective use of energy by all of our customers that shapes the largely consistent and predictable peaks in demand at a whole of network level, and it is catering for this level of demand that ultimately drives the cost of providing the network. Therefore, it is appropriate that the time windows applying to tariff components which reflect time of use be set and applied consistently across small business and residential customers.

Seasonality

Unlike most interstate electricity markets, Tasmania's demand for electricity peaks in winter, largely due to the demand for space heating. In other markets within Australia, peak demand is driven by the use of air-conditioning on hot summer days.

The AER has encouraged all networks to consider refining their approach to setting time of use windows. As part of this feedback, the AER asked TasNetworks to consider time of use pricing windows that include the element of seasonality.

Although the use of seasonality as part of demand pricing does have the potential to provide a greater degree of cost reflectivity to address particular network constraints, our approach is informed by feedback received from our customers. Our customers have told us they do not support seasonal variations for new tariffs, due to the potential impact of increased charges during the winter period, and that they prefer the simplicity of having no seasonal variation.

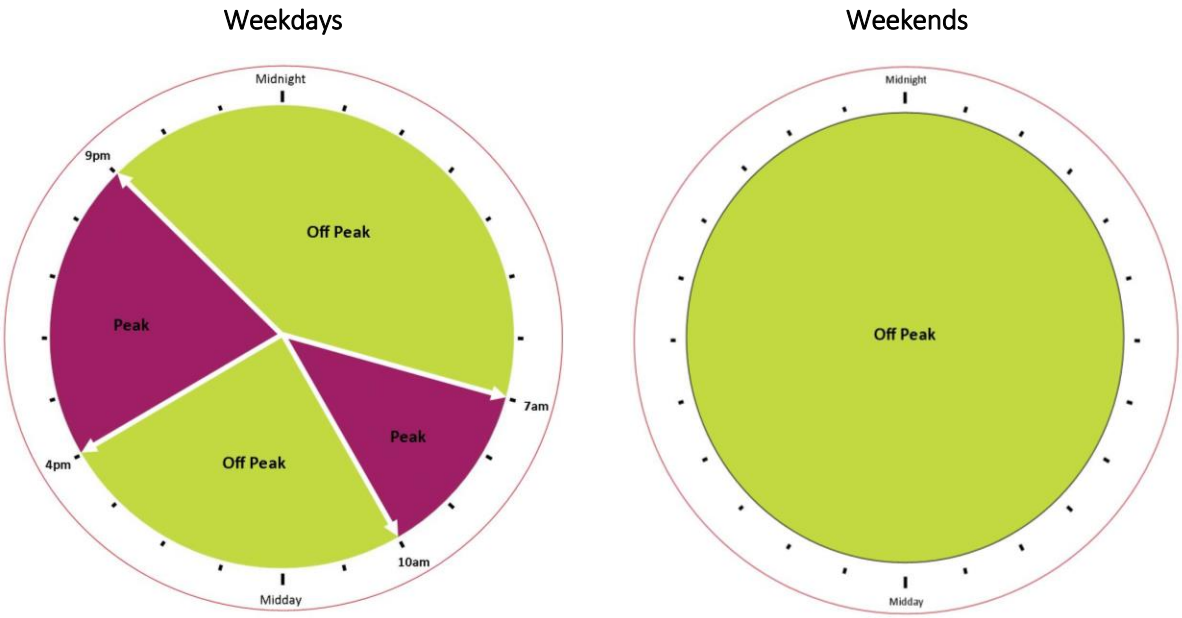
Peak period duration

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 previously 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 our new demand based network tariffs strike a balance between a range of competing tensions. The figure below shows the peak and off-peak time of use periods that apply to the demand based network tariffs introduced for retail and small business customers in the 2017 – 2019 TSS period.

Figure 39 Demand based network tariffs time of use periods



Appendix G: Pricing related feedback from stakeholders

The following table summarises the pricing related feedback raised by stakeholders in response to questions posed in TasNetworks' *Draft Directions and Priorities Consultation Paper*, which was released for public comment in August 2017. It also includes limited documentation of views expressed by members of the PRWG during the group's meetings held as part of the development of this TSS.

The following table does not include the stakeholder feedback collected from submissions received during the consultative process that informed development of the TSS for the 2017-19 regulatory period, although the key questions raised by or on behalf of customers during that process are discussed in Table 3 (*Issues raised by our customers and our responses*).

Overwhelmingly, people have told us that they want about the same reliability for about the same price. Is this consistent with what you think?		
Stakeholder	**Comments**	**Tariff Structure Statement content / actions**
Consumer Challenge Panel (CCP)	• The CCP submitted that customer expectations are also for *lower* costs. The CCP contended that consumers expect real price reductions and that any increase in overall network charges is not consistent with this. Any price increases above CPI need to be rigorously explained and justified. • The CCP linked the funding of improvements in reliability outcomes to the use of cost savings and efficiency gains.	Like any business, we face upward pressure on our costs. Many of the factors which drive increases in our costs are external to the business and, therefore, largely beyond our control. Technological advances, regulatory changes and market forces have all played a part in increasing our costs. For example, the uptake of solar panels in recent years has required us to augment many parts of our distribution network to address the power quality issues posed by the intermittent nature of photovoltaic power generation. Even though the rate of growth in customer numbers in Tasmania trails other markets in Australia, we have to cater for the addition of three to four thousand new connections to our distribution network each year. In our Revenue Proposal for the 2019-24 regulatory period we have taken a number of measures to minimise price impacts on our customers, including the use of efficiency savings to offset anticipated increases in the cost of labour and cost increases driven by customer growth. As stated in our regulatory proposal for the 2019-24 regulatory period, we are also committed to only achieving efficiencies and savings where doing so does not compromise the safety and reliability of the network, now or into the future.

John Marrone	• Mr Marrone indicated a preference for "better reliability at a lesser price" otherwise "we will always be at the same level and unable to improve."	Our distribution customers have generally told as that they are comfortable with the level of network reliability they receive but, as intimated by Mr Marrone, are concerned about the affordability of our services. While our customers may consider current reliability levels satisfactory, our regulatory proposal for the forthcoming regulatory period does propose improvements in reliability, with a focus on select areas of the distribution network with historically lower levels of reliability. TasNetworks agrees that any reduction in cost that can be achieved without compromising reliability is of benefit to our customers. As stated in our regulatory proposal for the 2019-24 regulatory period, we are committed to only achieving efficiencies and savings where doing so does not compromise the safety and reliability of the network, now or into the future.
Tasmanian Farmers & Graziers Association (**TFGA**)	• The TFGA advocated the importance of consistent and predictable pricing.	Sending consistent and predictable price signals to customers about the value of their network connection (and the impact that their use of the network has on the cost of providing the network) is one of the key drivers of our pricing reforms, in particular the introduction of our new demand based time of use network tariffs. The importance of predictable pricing can also be seen in the gradual transition of some of our existing network tariffs towards full cost reflectivity, which we will be doing over multiple regulatory periods in order to avoid price shocks for our customers. Indicative prices for tariffs for the period 2019 to 2024 are set out in the *Indicative Pricing Schedule* provided in Appendix B of this TSS to guide customers' expectations about any changes in network charges over the forthcoming regulatory period.
Tasmanian Small Business Council (**TSBC**)	• The proposition of maintaining current levels of network reliability along with similar prices is consistent with the longstanding	Consistent with the TSBC's position, our regulatory proposal for the forthcoming regulatory period proposes maintaining current overall levels of reliability, with improvements in reliability limited to select areas of the network with historically lower levels of reliability. Our Regulatory Proposal provides further information on our future expenditure plans.

	views of TSBC members. • TSBC noted that despite this view (which it noted is not unique to Tasmanian small businesses) networks have, for many years, been spending progressively more on reliability and charging their customers more.	
Tasmanian Council of Social Services Inc (**TasCOSS**)	• TasCOSS submitted that there should be no reduction in reliability or increase in cost, but that any reduction in cost which can be achieved without compromising reliability would assist people who are now struggling to pay for the energy they need.	TasNetworks agrees that any reduction in cost which can be achieved without compromising reliability is of benefit to our customers. As stated in our regulatory proposal for the 2019-24 regulatory period, we are committed to only achieving efficiencies and savings where doing so does not compromise the safety and reliability of the network, now or into the future.

Do you agree with our direction and priorities for 2019-24? If not, how should they be amended and why?		
Stakeholder	**Comments**	**Tariff Structure Statement content / actions**
COTA	• "COTA is pleased that TasNetworks aims to reduce network charges from July 2017 and that costs will aim to be kept as low as sustainably possible. This is very important for low energy use households whose	Our service charges for each tariff are primarily designed to recover the fixed costs that arise from the connection and management of each customer to our network. This sends a consistent and predictable price signal to customers about the value of their network connection. Our volume based charges are designed to recover the residual or shared network costs on a basis which reflects how our customers use the distribution network.

	energy bills are largely made up of fixed costs. Reducing fixed charges will also incentivise people to change their energy behaviour with demand based tariffs as they are more likely to see reductions in their energy bills."	Over time we will be reducing our reliance on consumption based network charges and moving towards a greater reliance on demand based time of use network charges. Our new demand based time of use network tariffs for residential and small business customers are designed to recover our costs in a way that reflects how our customers use the distribution network at the peak times which is what drives our future variable costs. A feature of these new network tariffs is that they have no charge that reflects how much power the customer uses over the course of the billing period. This offers customers the scope to shift their electricity usage to off-peak times (including weekends) to minimise their network charges, without adversely affecting their lifestyle.
TasCOSS	• TasCOSS called for greater consideration to keeping energy affordable, especially for low income and disadvantaged Tasmanians, and that making electricity affordable for all Tasmanians should be stated explicitly as part of TasNetworks' vision.	TasNetworks recognises that with Tasmania's colder climate and Tasmanians' greater reliance on electricity, for some households electricity bills can represent a greater contributor to the cost of living than might be the case in other states and territories. Reflecting ongoing efficiencies in the operation of our network, from 1 July 2017 electricity distribution network costs in Tasmania fell by around 20 per cent. As noted by the AER in announcing its approval of our revenue proposal and Tariff Structure Statement for the 2017-19 regulatory period, this reduction in network costs will help to offset the impact of rising wholesale electricity costs in Tasmania for all customers, including low and income and disadvantaged Tasmanians. The AER has estimated that if these savings are passed on they will result in a saving of $133 for an average Tasmanian household electricity bill in 2017-19. 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.
Tasmanian Renewable Energy Alliance (**TREA**)	• TREA highlighted the importance of	Sending price signals to customers about the value of their network connection is one of the key drivers of our network tariff reforms, including the introduction of

	providing customers with pricing signals that reflect the value that access to the network provides to customers with, or contemplating an investment in DER, even to the extent that some may consider "paying more for access to the network if it provides additional value to them". • In supporting the aim of providing improved customer information, TREA highlighted the need to provide information to consumers about locations in which potential network constraints may either limit the ability to install DER or provide an opportunity for DER to add value to the network.	new demand based time of use network tariffs designed for households and small businesses which invest in DER.
Tasmanian Small Business Council (**TSBC**)	• TSBC questioned the assumption that the electricity market – including prices – will remain stable, citing the potentially significant impact that the loss of one or more major industrial customers or a rapid migration to embedded and off grid generation could have on network prices and	The loss of major industrial load in Tasmania would be likely to have some impact on the transmission network costs recovered from users of the distribution network through our network tariffs, but is a hypothetical prospect and not a matter which has been addressed in this TSS. The installation of micro embedded generation by Tasmanian households and small businesses, largely in the form of photovoltaic solar panels, has been gathering momentum for a number of years. This has already caused TasNetworks to spend significant amounts on upgrades to the distribution network, notably in the form of larger capacity transformers, to enable customers with solar arrays to connect to the network and to help negate the power quality issues that can arise due the

	service outcomes.	intermittent nature of solar generation. Those costs have been borne by the wider customer base, including those without solar panels, meaning that the uptake of solar panels is already having an impact on network prices. Under the Rules, retail customers with micro-generation facilities must be treated no less favourably than retail customers without such facilities but with a similar load profile. One of the challenges for pricing reform is to comply with the requirements of the Rules in this regard, without perpetuating subsidisation of customers with micro generation by customers without embedded generation.

Do you have any feedback on our preliminary revenue requirements and indicative pricing outcomes?		
Stakeholder	**Comments**	**Tariff Structure Statement content / actions**
Aurora Energy	• Through our PRWG consultation Aurora Energy have discussed the importance of limiting price increases to the rate of inflation, and needing to be clear of the customer benefit should prices exceed that level.	TasNetworks notes that from 1 July 2017, electricity distribution network costs in Tasmania fell by around 20 per cent. As noted by the AER in announcing its approval of our revenue proposal and Tariff Structure Statement for the 2017-19 regulatory period, this reduction in network costs will help to offset the impact of rising wholesale electricity costs in Tasmania. The AER has estimated that if these savings are passed on they will result in a saving of $133 for an average Tasmanian household electricity bill in 2017-19. The reduction in network charges was made possible by savings in the operation of our distribution network, with the AER accepting virtually all of TasNetworks' regulatory proposal, including its capital and operating expenditure forecasts. TasNetworks will continue to work with Aurora Energy to ensure that our network prices are accurately reflected in the retail electricity prices and standing offers available to all customers in Tasmania.
COTA	• COTA requested that more information be provided about how consumers will be educated about	As noted in this TSS, TasNetworks is currently undertaking the emPOWERing You Trial, one of the aims of which is to test customer communication and education processes, in order to help us establish the most effective methods to support customers and retailers during this transition. The results of that trial will inform

	new tariffs.	how we explain demand based time of use tariffs to customers and guide the development of tools to help our customers compare network tariffs and understand what a change to a demand based tariff might mean for them.
Tasmanian Small Business Council (**TSBC**)	• The TSBC claimed that a gap between the prices paid by small business compared to domestic customers, and the inherent cross subsidy, will be maintained over the next six years, or maybe even widened. The TSBC did not support such an outcome.	In 2016-17, the daily service charges and per kilowatt hour network charges applying to the general power and light network tariffs that apply to most residential and small business customers (TAS31 and TAS22 respectively) were the same. However, this changed in 2017-18 and will continue to be the case as we progressively remove cross subsidies from our tariff suite. TasNetworks has inherited a number of legacy tariffs which do result in cost shifting between tariffs and different types of customers. TasNetworks acknowledges the TSBC's view that the rate at which any subsidies affecting small businesses are unwound should be accelerated. However, as noted in Table 3 in Section 3 of this TSS (*Network tariff setting process*), we are mindful of the impact of pricing reform on all customers and we will continue to take the customer impact principle into account when making changes to our existing network tariffs. Our shareholders have also expressed a preference for a slower pace of network tariff reform. Consequently, we will continue implementing the changes approved for our 2017-19 TSS during the forthcoming TSS periods, to achieve full cost reflectivity by July 2029 in a manner that avoids material customer impacts.
TasCOSS	• With reference to information provided by TasNetworks which showed above inflation growth in revenue from distribution network customers, TasCOSS argued that such an increase would present difficulties for people on low incomes who are already struggling with energy prices and cost of living	TasNetworks recognises that with Tasmania's colder climate and Tasmanians' greater reliance on electricity, for some households electricity bills can represent a greater contributor to the cost of living than might be the case in other states and territories. That's why TasNetworks is transitioning gradually to cost reflective pricing and seeking to run an efficient business, in order to avoid price shocks for customers, particularly vulnerable customers, and minimise upward pressure on the delivered cost of electricity. Energy prices and the provision of support for low income and vulnerable customers are, however, separate areas of public policy, with the support provided to customers in relation to their electricity costs being a product of Government

	pressures.	social policy, rather than one economic regulation. In Tasmania, the distribution network tariffs for all small customers of a particular class are also required to be uniform, meaning that there is no mechanism available to TasNetworks to delivery discounts or concessions to customers identified as being vulnerable. Further, any growth in our revenue, to the extent that it places upward pressure on customer's charges, is also approved by the AER. TasNetworks has already achieved significant inroads into easing the upward pressure on electricity prices in Tasmania. From 1 July 2017, electricity distribution network costs in Tasmania fell by around 20 per cent. As noted by the AER in announcing its approval of our revenue proposal and Tariff Structure Statement for the 2017-19 regulatory period, this reduction in network costs will help to offset the impact of rising wholesale electricity costs in Tasmania. The AER has estimated that if these savings are passed on they will result in a saving of $133 for an average Tasmanian household electricity bill in 2017-19.

What information would you like to better understand in our tariff reform plan?		
Stakeholder	**Comments**	**Tariff Structure Statement content / actions**
Aurora Energy	• Throughout our consultation process Aurora Energy have remained supportive of a slow transition to cost reflective pricing. Based on concerns about: affordability for customers and lack of understanding of the change to cost reflective pricing, the impact of change to retail market systems and billing processes and lack of	TasNetworks welcomes Aurora Energy's support of the pace of network tariff reform in Tasmania and will continue to work closely with Aurora energy on the subject of tariff reform. TasNetworks is committed to applying cost reflective network prices for all customers by 2029 and appreciative of Aurora Energy's support regarding the pace of network tariff reform. The process of pricing reform is challenging and, to be successful, we will need to gain customers' understanding and acceptance of any new or modified tariffs. Through our emPOWERing You Trial we are gathering data about customers' electricity use and their responses to the type of demand based time of use network tariffs we are proposing, which will help us gauge customers' willingness

	available data to better understand implications for customers.	to embrace change. While the new demand based time of use tariffs will initially only be available to households and small businesses on an opt-in basis via their retailer, subject to the level of advanced meter take-up in Tasmania, TasNetworks plans to begin billing retailers serving residential and small business customers on a cost reflective basis during the 2029-34 regulatory period. Whether those prices are passed on to the customer will then become a matter for the retailer to decide. However, the AER has indicated its support for this phased approach to network tariff reform, involving an initial customer-led transition to cost reflective network tariffs followed by assignment principles which support a faster pace of reform.
CCP	• The CCP expressed concern that the progress towards tariff reform outlined in TasNetworks' Directions and Priorities consultation paper might not be sufficient to fulfil the 2025 Roadmap's vision. • The CCP suggested that it would be of value to consumers for TasNetworks to outline how they are collaborating with other DNSPs on the AER's view of the current and future TSS.	We recognise that there are some stakeholders with an appetite for a faster rate of reform than we have proposed (for example the TSBC). However, there are divergent views about the pace of pricing reform. Our shareholders have, for example, expressed a preference for a slower pace of pricing reform. We are mindful of the impact of pricing reform on all customers when making changes to our existing network tariffs. Our overarching pricing strategy remains, therefore, to continue a gradual transition to cost reflective pricing in a way that avoids material customer impacts, particularly for vulnerable customers. We will continue implementing the changes approved for our 2017-19 TSS over the next two TSS periods, to achieve full cost reflectivity by July 2029. TasNetworks has sought to engage with all retailers on the subject of network tariff reform and Aurora Energy has been a key retail contributor to the development of our pricing reform plans (as a member of our PRWG) since we began engaging with stakeholders on the subject in late 2014. We will continue to work with all electricity retailers, including Aurora Energy, to progress our pricing strategy and ensure that our new and adjusted network charges are incorporated into the retail tariffs offered to customers in the future. TasNetworks is a member of the Energy Networks Australia Pricing Group, which includes representatives from DNSPs and TNSPs from around the country. The Pricing Group met with the AER in the lead up to the submission of this TSS to

		discuss are proposal and also to understand the proposals of others submitting in January 2018.
COTA	• COTA highlighted the need for TasNetworks to provide information and instruction to older Tasmanians (particularly those with low levels of digital literacy) to enable them to benefit from TasNetworks' new network tariffs and advanced metering, particularly in such a way as to reduce their energy bill without reducing energy use or adversely affecting their lifestyle.	As part of our emPOWERing You Trial, we have been engaging with some 600 households, representing a broad cross section of the Tasmanian community, including a number of older customers. Through the emPOWERing You Trial we are learning how best to explain demand based tariffs to all customers. The trial will help us share informative customer stories with the community about their electricity usage which explain how customers can take advantage of network tariff reform to reduce their energy bill without adversely affecting their lifestyle.
Tasmanian Renewable Energy Alliance (**TREA**)	• TREA requested that more consideration be given, or information provided, regarding tariffs which apply to or support local energy trading, the provision of network support services and the integration of EVs into the grid. • TREA requested advice on whether TasNetworks intends providing restrictions or incentives to discourage or encourage the installation of DER in particular localities, to the benefit of the	In Tasmania, the distribution network tariffs for all small customers of a particular tariff class are required to be uniform, regardless of where in mainland Tasmania the customer is supplied with electricity. Only larger, usually high voltage customers like energy intensive businesses, might pay network charges that to some degree reflect their location. Nonetheless, we are undertaking a trial of solar panels and batteries in 40 homes on Bruny Island – which is supplied with electricity via an undersea cable that is facing capacity constraints. The trial is being conducted to provide us with insights into the potential for customers to manage their electricity usage and control their electricity costs using DER – while also using these resources to benefit our electricity network and other customers. For more information about this trial see *Distributed Energy Resource case study* on page 13 of this TSS. TasNetworks has already introduced a consumption based time of use network tariff for residential customers (**TAS93**) which became available as part of a retail standing offer from 1 July 2016. This new tariff offers customers with DER

	network. • TREA also enquired about: – what, if any, incentives might be offered by TasNetworks to the owners of storage capacity to provide services to the network. – whether TasNetworks proposes to introduce tariff or other arrangements to encourage the charging of electric vehicles in ways which minimise negative impacts on the network – what tariffs might be used to encourage/enable electric vehicle (EV) owners to provide services to the network	(including EVs) the scope to be rewarded with lower network charges for using electricity in off-peak periods, which also benefits the network. And like the new demand based time of use network tariffs which we will introduce in the coming TSS period, one of which is specifically designed for customers with DER, TAS93 offers customers with photovoltaic solar panels, batteries and/or an EV to use the electricity they generate or store for home heating and/or hot water, or charging EVs, not just for the purposes of general power and light.
Tasmanian Small Business Council (TSBC)	• The TSBC requested to see the information that will be provided to small businesses about tariff reform, and find out how the information will be communicated. • The TSBC identified the need for small business operators to be able to understand: – any difference between what their	We realise that time of use demand charges are a new concept for many small businesses and that a lot of businesses will not be aware of what their typical demand is. We also realise that many small business operators won't know which appliances to switch off or turn down in order to reduce demand. That's why we are offering demand based time of use tariffs as a choice for small businesses, via retailers, on an opt-in basis. And if a small business switches to a retail tariff that incorporates one of our new demand based time of use network tariffs, we'll provide an opportunity for that business to revert to its previous tariff arrangements, should the business decide that the new tariff isn't working for them. Throughout the development of our new network tariffs for small businesses, we

	business is currently being charged and what they will be charged in future as a result of tariff changes (assuming no change in tariff assignment or consumption behaviour); and – what they might be charged if they switch tariffs or change their consumption behaviour. • The TSBC contends that small businesses are unlikely to (and should not be expected to) modify their electricity consumption behaviour unless the rewards for doing so are sufficiently large and measurable.	have engaged with advocates for small business, like the TSBC. The insights provided by businesses and their advocates will assist us in helping small businesses to transition to demand based time of use network tariffs, by teaching us how best to explain demand based tariffs and aiding the development of tools that small businesses can use to compare network tariffs and understand what a switch to a demand based time of use network tariff might mean for them.
TasCOSS	• TasCOSS submitted that it would be beneficial for TasNetworks to provide more information about social impacts of losing the Tariff 41 network tariff for hot water and heating, including the public health benefits of the essential services of heating and hot water, and the costs incurred by the whole community when people cannot afford the energy they need.	Many Tasmanians rely on electricity to provide home heating and hot water in a way not seen anywhere else in Australia. The TAS41 network tariff for uncontrolled low voltage heating currently provides customers with significantly discounted network charges for hard-wired space heating and hot water systems, despite the demands that home and hot-water heating place on our network – often at peak times of the day. In the lead-up to our TSS for the 2017-19 regulatory period, one of the options we canvassed with stakeholders 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 reducing 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.

		We have instead gone down the path of gradually rebalancing the price of the TAS41 network tariff with the Residential Low Voltage General (TAS31) tariff. Over time the charges under both tariffs will become the same but, for most customers, the transition should involve only small changes that avoid material customer impacts from year to year. There will be no sudden abolition of these discounted tariffs. Rebalancing the two tariffs will occur over the course of multiple regulatory periods in order to allow customers time to adjust to the changes being made. Our aim is to promote a customer led shift to demand based time of use tariffs, while transitioning the remaining tariffs, like TAS41, to reflect total efficient costs, thereby removing cross-subsidies between existing tariffs.

Do you support our approach to tariff reform?		
Stakeholder	**Comments**	**Tariff Structure Statement content / actions**
CCP	• The CCP submitted that a central objective of tariff reform needs to be transparency of the drivers of costs and their allocation to different customers. An important aspect of this is for customer representatives to be able to engage with TasNetworks and Aurora Energy at the same time. CCP noted that this had occurred at a recent Pricing Reform Working Group and that further opportunities for engagement are	We established the TasNetworks PRWG (formerly the *Tariff* Reform Working Group) in late 2014 to provide us with advice about our customers' needs and act as an advisory group on pricing issues. The Group is made up of around twenty stakeholders comprising representatives of the community sector, businesses, consumer advocates and members of the electricity supply industry. Aurora Energy is a member of the PRWG and has been a contributor to the development of our pricing reform plans since we began engaging with stakeholders on the subject in late 2014. We also engage with Aurora Energy outside of the PRWG forum and, along with Aurora Energy, participate in joint pricing meetings convened by OTTER.We will continue to work closely with Aurora Energy and other electricity retailers, to ensure that the price signals in our increasingly cost reflective network tariffs are visible to customers through the retail tariffs on offer from the electricity retailer. TasNetworks notes the feedback from the CCP regarding the extent to which

	being identified, which the CCP supported. • The CCP indicated that the Directions and Priorities Consultation Paper could have dealt more comprehensively with the issues involved with tariff reform in Tasmania (including political and customer issues).	network tariff reform was covered in the Directions and Priorities Consultation Paper. Our regulatory proposal for the 2019-24 regulatory period sets out our tariff reform plans at a high level, while this TSS provides customers and other interested stakeholders with insights into the key issues raised by stakeholders in relation to pricing reform, as well as our responses to those representations.
COTA	• COTA noted that fixed [service] charges can represent a higher proportion of the delivered cost of energy for low energy use customers, with the result that minimising energy use may have very little impact on how much they pay for their electricity. With older Tasmanians characterised as being low energy use consumers, COTA contends that fixed charges should be kept to a minimum, in the interests of enabling the consumers it represents to maintain control over their electricity costs. • COTA advocated that the population samples in upcoming	The traditional flat consumption based network tariffs which have been in use for decades only offer older Tasmanians the scope to reduce their electricity bills by reducing the amount of electricity used during the course of a billing cycle. However, a reduction in electricity use can often be accompanied by a loss of amenity through, for example, using heating less during cold weather. Over time we intend reducing our reliance on consumption based network charges and moving towards a greater reliance on demand based time of use network charges. The new demand based time of use network tariffs for residential customers are designed to recover the costs of the shared network in a way that reflects how our customers use the distribution network at the peak times that drive our future variable costs. Customers with the flexibility to shift their electricity use into off-peak times of the day (which include weekends) will potentially be rewarded with lower network charges, without necessarily reducing their consumption of electricity or adversely affecting their lifestyle. Older Tasmanians are potentially amongst those residential customers with the greatest scope to exercise control over the timing of their energy use and take advantage of off-peak network tariffs. Our emPOWERing You Trial involves around 600 households, representing a broad cross section of the Tasmanian community, including a number of older customers.

	trials and pilots need to reflect the diversity of the Tasmanian community, the implication being that older Tasmanians should be represented in those sample groups. • COTA has indicated that it is supportive of TasNetworks approach to tariff reform, but noted the importance of ensuring that consumers are able to use the new tariffs effectively. • "COTA recognises the effort that TasNetworks have made to consult with their community and address issues to support Tasmanians with their energy use."	Through the emPOWERing You Trial we will learn how best to explain to customers how they can take advantage of network tariff reform to reduce their energy bill without adversely affecting their lifestyle.
Tasmanian Farmers & Graziers Association (**TFGA**)	• The TFGA is supportive of cost-reflective network tariffs for primary producers. • TFGA contended that TasNetworks thinking in relation to the application of differential pricing to time of use periods, as they relate to irrigation at least, may not be consistent with contemporary agricultural practices, which can	The power lines servicing remote and rural areas often span large areas and serve customers located a long way from the network's nearest connection point with the transmission network. As distances from transmission substations increase, the strength of the network decreases. As a result, even small changes in demand can place greater localised stress on the network than similar loads might in other parts of our network. And transformers in rural settings often have to be over sized in order to cope with the start-up currents associated with irrigation pumps. So, although the peak demand on our wider network occurs in winter, many of the network assets used to connect irrigation customers experience their peak during the summer months, largely as a result of an increased need for irrigation in warmer weather.

	see crops needing to be irrigated throughout the day.	As a result, the irrigation tariff is unique amongst our time of use network tariffs in that it is priced based on a summer peak. In this sense, the current irrigation tariff is highly cost reflective, in that its time of use periods recognise the impact that the use of electricity by irrigators has at different times of the day, and the year, on our network costs.
Tasmanian Irrigation (**TI**)	• TI contends that TasNetworks' current ToU tariff structures are not aligned with optimal crop irrigation timing and that a move to cost reflective pricing will overly burden the irrigated agriculture sector. • TI was critical of the network tariffs currently available to irrigators, which it claimed don't provide end users with the right incentives to adopt optimal energy use behaviours. • TI contends that for an irrigator supplied under the TAS75 Irrigation TOU Tariff, their network charges will 39% over a 6-year period from 2017-18 to 2022-23, representing an average of increase of 5.70% each year, well in excess of recent rates of inflation. • TI has proposed a number of	TasNetworks acknowledges that agriculture has long been a key part of Tasmania's economy. The continuing growth in the economic contribution of agriculture has been driven by the expansion of irrigation across the State, which in turn has been powered by electricity, delivered to primary producers and irrigation schemes by TasNetworks. The introduction of two new commercial time of use demand tariffs for commercial customers in the next regulatory period mean that irrigators will potentially have up to six network tariffs to choose from, including the existing dedicated irrigation tariff, TAS75. This is a wider range of network tariffs than is available to any other category of customer and encompasses a flat consumption based tariff, a time of use consumption tariff, a tariff that combines consumption and demand charges, and demand based time of use tariffs. TasNetworks considers that the network tariffs available to irrigators are sufficient, and sufficiently diverse, to enable irrigators to choose network tariffs which suit their circumstances. That said, we welcome further consultation with the agricultural sector including the exploration of trials and data gathering to support an improved understanding of customers electricity usage. This will in turn support the exploration of alternative pricing structures for the future.

	alternative tariff reform measures. - introduce tariff relief for irrigation customers to minimise exposure to TOU peak pricing; - introduce a flat tariff structure for irrigation customers at or below the equivalent overall cost structure of TAS75; - introduce incentives to irrigation customers that encourage optimal energy consumption behaviours; - only apply TOU tariff structures where load constraints exist on a particular feeder; - any future TOU tariff options need to align with both crop requirements and address load constraints; - irrigation tariff prices should be capped and indexed at CPI; and - existing cross subsidies into irrigation tariffs should be maintained.	
Tasmanian Renewable Energy Alliance (**TREA**)	• TREA is supportive of the introduction of demand based time	TasNetworks welcomes the support of TREA and other stakeholders for the introduction of our new demand based network tariffs for residential and small

	of use tariffs on an opt-in basis for residential and small business customers. • TREA expressed concern that increases in service or fixed charges and reductions in variable charges may discourage energy efficiency. • TREA expressed reservations about the social impact of closing the pricing differential gap between the TAS31 and TAS41 network tariffs. • TREA advocated the use of trials to identify the appropriate tariffs to support greater integration of DER into the network.	business customers on an opt-in basis. About 76 per cent of residential customers are currently supplied under a combination of the *Residential Low Voltage General* (TAS31) tariff and the *Uncontrolled Low Voltage Heating* tariff (TAS41). TAS41 currently provides customers with significantly discounted network charges for hard-wired space heating and hot water, despite the fact that the load associated with home and hot water heating frequently coincides with periods of peak demand on the network. Our plan is gradually rebalance the price of TAS41 with TAS31, in recognition of the demands that heating loads place on our network, with the two network tariffs to be aligned by the end of the 2024-2029 TSS period. We recognise that many customers have made significant investments in electric space heating on the basis of the current charging arrangements, which have been in place for several decades. However, we believe that the transitional period being proposed is long enough to give customers the chance to understand and respond to changing price signals and reduce the potential impacts of reform on their electricity bills – potentially through migrating to an alternative network tariff. Noting the planned introduction of a demand based time of use network tariffs specifically intended for residential and small business customers with DER, TasNetworks is also conducting a trial on Bruny Island involving customers using solar panels and battery storage in conjunction with energy management software. The trial aims to research how customers can use DER in ways that not only reduce customers' network charges, but also reduce the amount of electricity being drawn from the network at peak times. The lessons learned from the trial are already influencing the design of our network tariffs and future pricing strategy, and in the longer term will potentially inform our network planning.
Tasmanian Small Business Council (TSBC)	• The TSBC continues to be broadly supportive of TasNetworks' approach to tariff reform, in particular:	TasNetworks notes the views expressed by the TSBC in relation to the pace of tariff reform. For more information on TasNetworks response in regard to the time taken to transition to cost reflective network pricing, see *Stakeholder engagement* in Section 3. Electricity retailers have an important role to play in supporting network pricing

	– moving to cost reflective network tariffs and eliminating existing cross subsidies – the move to demand based tariffs • However, TSBC consider that the proposed timeframe for the phase out of existing cross subsidies is too long. • The TSBC also consider that any increase in fixed charges is contrary to the objective of using pricing signals to bring about changes in consumption. • The TSBC noted that the benefits of network tariff reform would be undermined if retail prices do not reflect network pricing signals, and urged TasNetworks to engage with Aurora Energy, the Tasmanian Economic Regulator and other stakeholders to achieve that end as quickly as possible. • "We welcome and support the consumer engagement activities that TasNetworks has undertaken to date in developing both its	reform, by ensuring that cost reflective network pricing signals are preserved in the electricity prices seen by all customers, rather than being bundled up as part of the delivered cost of electricity. We will continue to work with all electricity retailers, to progress our pricing strategy and work to ensure that our new and adjusted network charges are incorporated into the retail tariffs offered to customers in the future. We will also continue to participate in the regular joint pricing meetings convened by the OTTER. While our new demand based time of use network tariffs will initially only be available to households and small businesses on an opt-in basis via a retailer, depending on the level of advanced meter take-up in Tasmania, we plan to begin billing retailers serving residential and small business customers on a cost reflective basis during the subsequent regulatory periods. Whether those prices are passed on to the customer will then be a matter for the retailer to decide. The AER has indicated its support for this phased approach to network tariff reform, involving an initial customer-led transition to cost reflective network tariffs followed by assignment principles which support a faster pace of reform.

	regulatory Proposal and its Directions and Priorities, including its involvement with the TSBC. The TSBC also notes that TasNetworks has continued to evolve and improve its consumer engagement. As part of our input to TasNetworks' last distribution determination, we suggested a need to engage more with rural and regional small businesses in Tasmania in order to better understand their needs. We understand that TasNetworks has moved further in this direction as part of developing its 2019 to 2024 Revenue Proposal…"	