

Tariff structure statement

Explanatory document
2021-2026

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Abbreviations

AER	Australian Energy Regulator
AEST	Australian Eastern Standard Time
EV	Electric Vehicle
Explanatory Document	Tariff Structure Statement Explanatory Document
Rules	The National Electricity Rules
ToU	Time of Use
TSS	Tariff Structure Statement
Victorian distributors	Victorian electricity distributors

1 Overview

1.1 Overview

As one of five Victorian electricity distributors (**Victorian distributors**), Powercor provides our customers with distribution network services, residential and small business metering, public lighting and other related services. For these services, we generally charge retailers, not customers. But ultimately, our customers pay for our services within the bill they receive from their retailer.

Each year, we publish a network tariff schedule which sets out our network tariffs for the year. Before we set prices, we must determine how to structure our tariffs, and how we will assign customers to those tariff structures, which we set out in our Tariff Structure Statement (**TSS**). The TSS will apply from 1 July 2021 to 30 June 2026.

This TSS Explanatory document provides the reasoning underlying our proposed the tariff structures and assignment and reassignment policy, including how we relied on the feedback we received from our customers and stakeholders.

For our household and small business customers consuming less than 40MWh per year, we took a collaborative approach to engagement with the four other Victorian electricity distribution businesses and have proposed an aligned position. We heard both support for change but also calls for restraint in terms of the pace of change and to also look out for vulnerable customers. Our position is, therefore:

- For household customers, we will create a new two-rate time of use tariff (**new ToU tariff**) for households with a 3 pm to 9 pm every-day peak period. From 1 July 2021:
 - any household can choose this network tariff via their retailer
 - new connections, customers who upgrade to three-phase power supply and customers who install solar PV will be assigned to this network tariff by default
 - any customer who has chosen or been assigned to this network tariff can choose to move to a single rate or demand network tariff.
- For our small business customers consuming less than 40MWh per year, from 1 July 2021, we will amend our current ToU tariff as follows:
 - have a shorter peak window of 9 am to 9 pm workdays
 - new connections, customers who upgrade to three-phase power supply and customers who install solar PV will be assigned to this network tariff by default
 - we will also move customers from our legacy ToU tariffs onto the new default ToU tariff.
- For our small business customers consuming over 40MWh per year and less than 160 MWh per year, who are all already on a demand tariff, we are not proposing any changes to our tariff structures or assignment criteria.
- For our large business customers using over 160MWh per year, we are changing the time we measure demand from all hours of the day to 8am to 8 pm workdays.

For simplicity, pricing is in local time.

1.2 Document structure

The document is structured as follows:

- Chapter 2 provides background information

- Chapter 3 sets out and explains how our proposed tariff classes meet our pricing objectives and therefore the requirements in the National Electricity Rules (**Rules**).
- Chapter 4 sets out and explains our proposed tariff structures for households and how this meets our pricing objectives – this proposal is largely common across all Victorian distributors.
- Chapter 5 sets out and explains our proposed tariff structures for small businesses and how this meets our pricing objectives. For small business customers consuming under 40MWh per annum this proposal is largely common across all Victorian distributors. For small business customers consuming over 40MWh per annum, each distributor’s proposal is unique to that electricity distribution businesses.
- Chapter 6 sets out our proposed tariff structures for large businesses and how this meets our pricing objectives – each proposal is unique to that electricity distribution business.

2 Background

As one of five Victorian electricity distributors (**Victorian distributors**), we provide our customers with distribution network services, residential and small business metering, public lighting and other related services that they might request.

For these services, we charge retailers, not customers. But ultimately, our customers pay for our services within the bill they receive from their retailer.

2.1 What is the tariff structure statement?

A 'tariff' is how we charge a retailer for the services we provide to our customers. The tariff can be made up of different components such as fixed charges, usage charges or demand charges. These tariff components, the charging parameters,¹ and the applicable prices constitute the tariff structure.² The total network charges for any particular customer will depend on their assigned network tariff and their network usage.

The Tariff Structure Statement (**TSS**) sets out each distributor's applicable tariffs and their policies and procedures for assigning or reassigning customers to particular tariffs. The TSS must ensure that the proposed tariffs conform with pricing principles specified in the National Electricity Rules (**the Rules**). The Rules also require that each distributor submits its TSS to the AER for approval alongside its Regulatory Proposal.

Our TSS explains our proposed tariff structures for the 2021-26 period. It is published concurrently with this Tariff Structure Statement Explanatory Document (**Explanatory Document**), which provides detailed information and analysis to support the TSS.

2.2 Purpose of this Explanatory Document

In this Explanatory Document we aim to provide consumers and stakeholders with an understanding of the reasons for our proposed changes to tariff structures and tariff assignment and reassignment in the 2021-26 period by providing the underlying context for these decision including:

- describing the changing way our household and business customers use the network
- explaining how we engaged with customers and how their feedback has informed our proposal
- detailing our pricing objectives and explaining how these have changed based on customer feedback

2.3 Our network

Along with AusNet Services, Jemena Electricity Networks, CitiPower and United Energy, we are the five electricity distribution businesses that transport electricity to homes and businesses across Victoria. We charge electricity retailers for providing network services. But ultimately, customers pay for our services within the electricity bill they receive from their retailer.

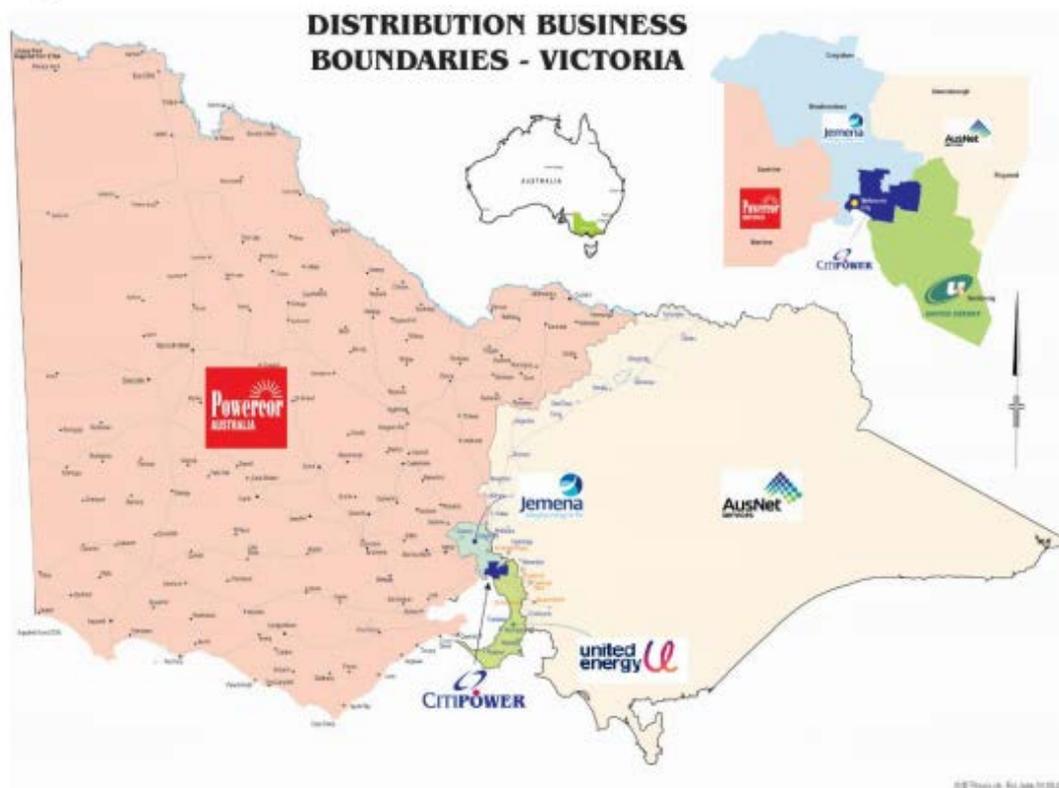
We are responsible for maintaining distribution network safety and reliability, along with planning and designing network extensions and upgrades to meet our customers' current and future electricity needs. We also operate the network on a day-to-day basis, connect new customers (large and small) to our network, and provide metering services. The service territory for each Victorian distributor is shown in figure 1 below.

¹ Charging parameters help to explain key information such as peak periods and minimum chargeable demand levels.

² In this document we use the term tariff structure to be consistent with the terminology in the National Electricity Rules, but we have often used the term "price structure" to mean the same thing within our engagement materials.

We are one of the most efficient and reliable electricity distribution networks in Australia. Within our network, we own and manage assets that deliver electricity to more than 840,000 homes and businesses across Melbourne's outer western suburbs and central and western Victoria. Our electricity distribution network is vast and complex, covering more than 150,000 square kilometres and traversing some of the most difficult and remote terrain.

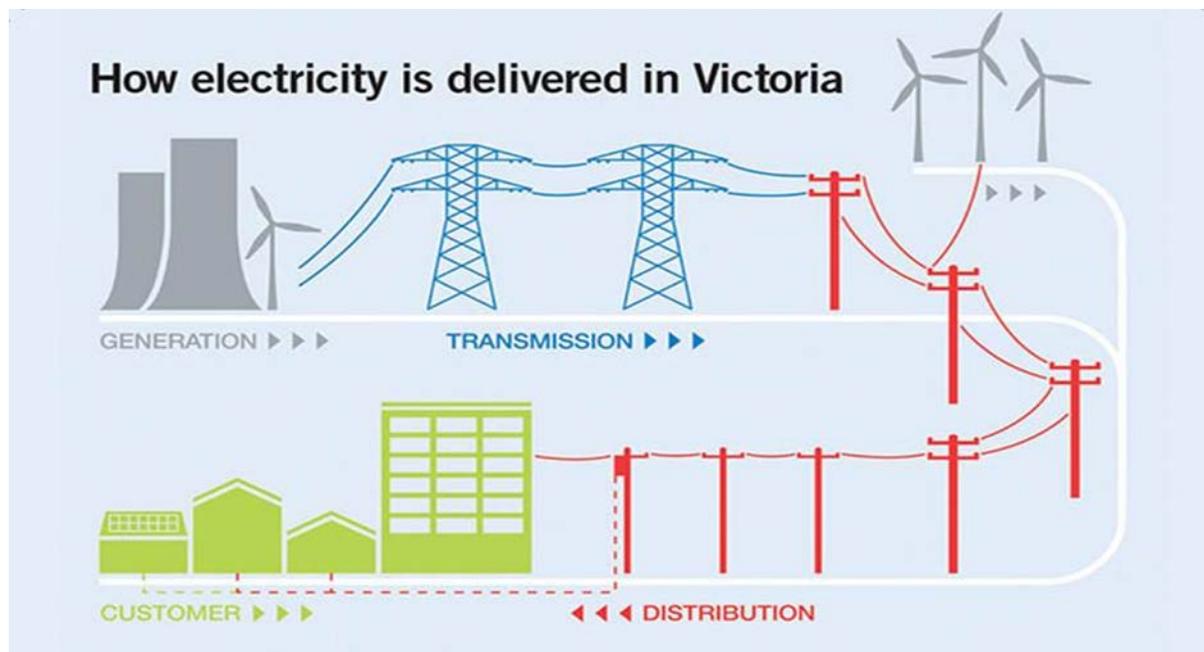
Figure 1 Victorian Electricity Networks



Source: Victorian distributors

As shown by figure 2, traditionally energy is delivered from generators, via the transmission and distribution networks to customers (although this is changing as solar PV penetration increases for example). The cost of distributing energy across our network is paid for through your electricity bill, and typically amount to around one-third of a customer's total bill.

Figure 2 Electricity supply chain



Source: Powercor

As a regulated business, the distribution revenue we can recover from our customers is determined by the Australian Energy Regulator (AER) on a five-yearly basis to ensure this reflects efficient costs of providing network services. The process for the 2021–2026 regulatory reset period is currently underway, with changes coming into effect on 1 July 2021.

Each year we submit an annual pricing proposal to the AER. The purpose of these pricing proposals is to obtain approval for how we recover our distribution revenue allowance, transmission costs and other government policy charges in any given year. The way we set our prices does not impact the total amount of revenue we collect, but does influence how individual customers pay for their energy services.

We recover our network and metering charges from electricity retailers, who recover these costs from customers through their retail tariffs. Our customers currently pay some of the lowest network charges in Australia, and Victorians pay the lowest network charges in the country.

2.4 Collaborative designing tariffs with our customers

We are mindful of the impact tariff structures have on our customers, as any change will make some customers better off and others worse off. Over the last two years, we have taken a customer-led approach to ensure we understand and reflect our customers' priorities as we developed our tariff structures for the 2021-2026 regulatory period. In developing our proposal, we embarked on an extensive consultation process with a wide range of stakeholders who had an interest in, or might be impacted by, network pricing reform in Victoria. We recognised that successful reform depends on effective engagement with our customers and stakeholders.

Our engagement approach ensured that we involved all our customer segments, customer advocates, retailers, the Victorian Government and the AER in our pricing forums. We understood that bringing people together would lead to decisions that fairly balance the views of a wide array of stakeholders.

We focused on opening up two-way conversations with our stakeholders to understand our customers' needs and priorities and facilitate joint decision making. Only after listening to our customers did we begin developing ideas and testing them through further consultation.

We have also striven to ensure a common approach to pricing in response to the feedback on our previous TSS process for the 2016-2020 regulatory period. Common small customer tariff structures across the State are preferred by all stakeholders to make pricing simpler and fairer for all Victorians. As a result, a key component of our engagement in this period has involved working closely with other Victorian distributors. An important outcome from this collaborative work has been a high degree of standardisation of this Explanatory Document across all the Victorian distributors.

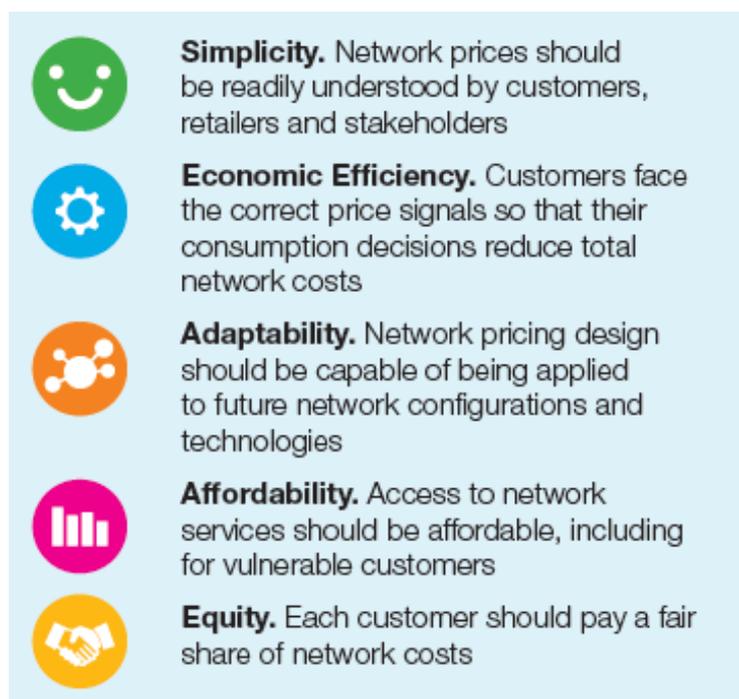
This engagement will continue following submission of the proposed Tariff Structure Statement. We will seek to understand stakeholder views on any developments that may occur throughout the assessment process. In addition, we will engage with retailers to ensure smooth and effective implementation of the final tariff structures.

In subsequent chapters of this Explanatory Document, we provide more detail on what our different customer groups and stakeholders told us, and how we have responded.

2.5 Pricing objectives

At an initial household and small business public forum in November 2017, the Victorian distributors heard how customers and stakeholders prioritised the objectives we should consider when developing tariff structures. We distilled this feedback into five key pricing objectives, which are set out in figure 3 (see Section 4.2.2). We also engaged separately with our industrial customers through surveys and on a one-on-one basis. We outline what we heard from our large customers through this process in Chapter 6.

Figure 3 The five stakeholder objectives for pricing design



Source: Victorian distributors

The five objectives provide a framework to determine how we design our proposed household and small business tariff structures, assignment and transition by assessing options against these objectives.

These objectives were a key foundation for engaging on our proposed tariff structures. It provided a framework for exploring options on pricing designs with customers and stakeholders. It was recognised that no single tariff option can address all of these objectives, which means that we needed to consider trade-offs or compromises between objectives.

Table 1 shows how these objectives are consistent with the pricing principles specified in the Rules.

Table 1 How our pricing objectives relate to the Rule requirements

Pricing objectives	Explanation	Alignment to pricing principle in the Rules
Simplicity	Customers, retailers and stakeholders should readily understand information about network prices.	Rule 6.18.5(i) – customers must be reasonably capable of understanding the tariff structures
Economic efficiency	Customers face the correct price signals so that their consumption decisions reduce total network costs	Rule 6.18.5(a) - The network pricing objective ³ Rule 6.18.5(e)-(g) – General efficiency principles
Adaptability	Network pricing design should be capable of being applied to future network configurations and technologies	This pricing objective is not specifically linked to the principles in the Rules but is consistent with promoting efficient outcomes.
Affordability	Access to network services should be affordable, including for vulnerable customers	Rule 6.18.5(h) – requires us to consider the impact on customers of changes in tariffs
Equity	Each customer should pay a fair share of network costs	Rule 6.18.5(h)&(i) require us to consider customer impact. Rule 6.18.3 requires us to set tariff classes together on an efficient basis, but also with regard to avoiding unnecessary transaction costs

Source: Powercor

2.6 Trends influencing tariff development

In addition to directly engaging with stakeholders, another part of developing effective tariffs for the upcoming period is to understand the changing needs of our customers and the impact this has on the network. A number of these trends impact peak demand although voltage issues also drive some network expenditure.

Below we discuss:

- our obligation to meet customers’ peak demand levels and the factors affecting future growth
- the importance community places on managing the impact of tariff changes on vulnerable customers.

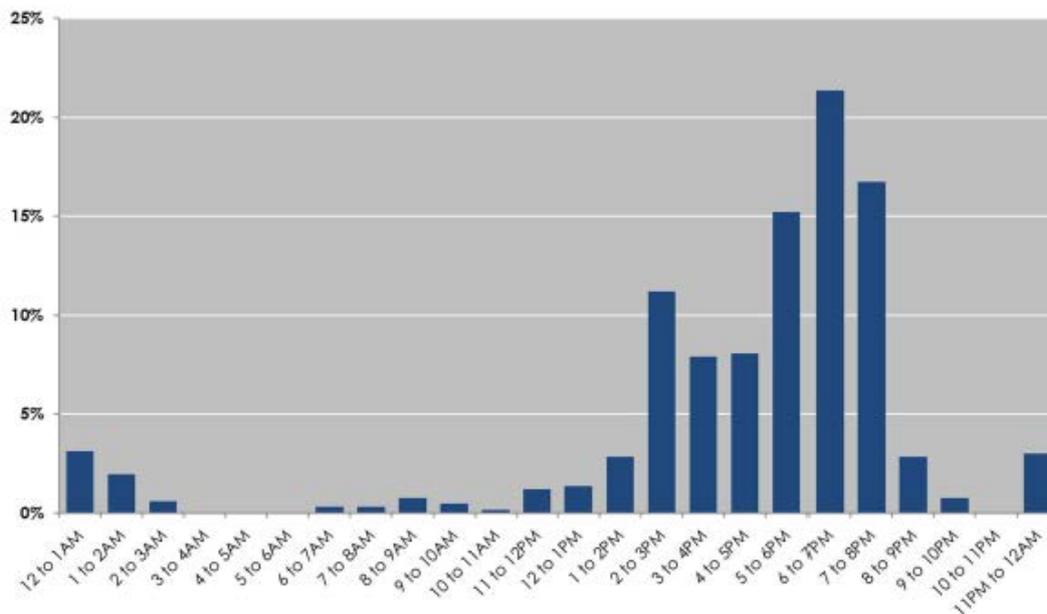
³ The network pricing objective is ‘that the tariffs that a Distribution Network Service Provider charges in respect of its provision of direct control services to a retail customer should reflect the Distribution Network Service Provider’s efficient costs of providing those services to the retail customer. See Rule 6.18.5(a).

2.6.1 Meeting customers' peak demand

Our costs, and therefore customers' bills, are influenced by the need to meet peak demand on the electricity network. Naturally, peak demand will increase as new customers connect to the network, driven primarily by population growth in Victoria.⁴ Peak demand will also be affected by how customers use the network.

In most parts of Victoria peak demand occurs on a very hot day when customers are using air-conditioners (see figure 4). Most zone substations peak between 2 pm and 8 pm (local time). There are also "tails" to this period, with several substations peaking between 11 am and 9 pm local time. However, CitiPower, which covers the Melbourne CBD peaks between 10 am to 5 pm, which must be taken into account when designing uniform tariffs across the State.

Figure 4 Victorian zone substation peaks by hour of day (2015-17), local time



Source: Victorian distributors

While single-rate tariff structures incentivise customers to decrease total usage, they do not specifically encourage customers to decrease usage at peak times. When our costs are driven by meeting peak demand but the majority of customers are on single-rate tariff structures, customers with higher usage during peak times will be cross-subsidised by other customers with flatter usage profiles, creating inequities and inefficiencies.

Historically customers had relatively similar load profiles, so this wasn't as much of an issue. However, existing and emerging market developments mean that customers' usage profiles are diverging over time. In future, peak demand will be affected by changes in the way that customers use the network, including:

⁴ New customers connecting to the network in the 2021-26 regulatory period is a large driver of network capacity investment, with the Victorian residential customer base growing by about 2.4 per cent per annum (around 52,000 new homes each year). New customers pay a capital contribution when connecting to the network. This is calculated so that any costs not estimated to be recovered through long-term tariffs are collected from the newly connecting customers.

- continued growth in air-conditioner load, exacerbating the early evening peak
- emergence of electric vehicles (EVs) which could exacerbate the early evening peak
- future take-up of home batteries with solar PV effectively allowing photo-voltaic generation to be shifted to any time period.

We discuss each of these further below. By reducing growth in peak usage, we can reduce future network capacity requirements and put downward pressure on customer bills in the long-term. Tariff structures that reflect the real costs of using the network also ensure cost fairness between customers.

Growth in air conditioners and other appliances

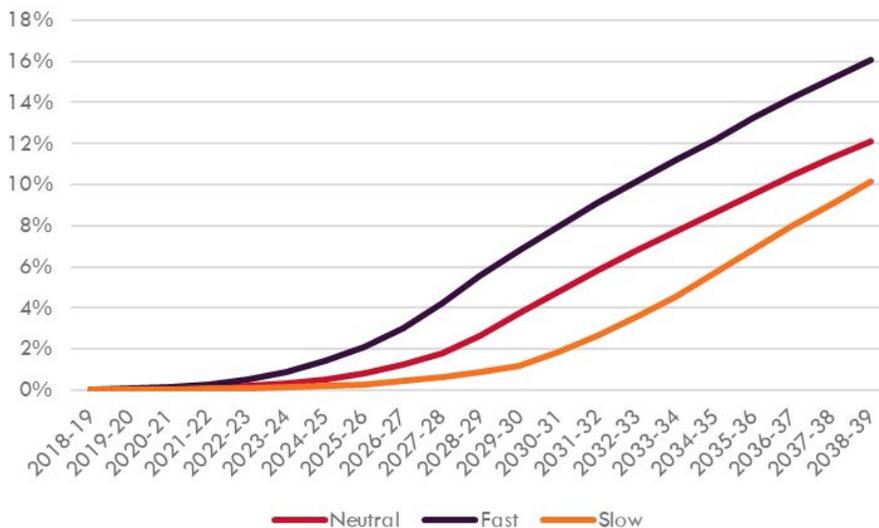
In the early to mid-2000s, we were required to invest significantly in new capacity to meet growing demand at peak times while ensuring network stability. This was a result of more customers installing and running air conditioners, with Energy Networks Australia estimating that more than 70% of households use an air conditioner on hot days.⁵ Since that time, peak demand growth has subsided due to energy efficiency initiatives for example, although investment is still required in areas of high population growth.

In future we want to have tariff structures in place so that customers are encouraged to make efficient investment decisions and appropriately contributing to the costs incurred.

Electric vehicles

EV uptake is expected to increase significantly over the long term. For example, AEMO's latest forecasts suggests that EVs consumption share of operational demand in Victoria will be about 13% by 2040 under a neutral scenario and 15% under a faster uptake scenario.⁶

Figure 5 AEMO modelling assumptions for EV consumption share of operational demand



Source: AEMO 2019, Assumptions and Inputs workbook

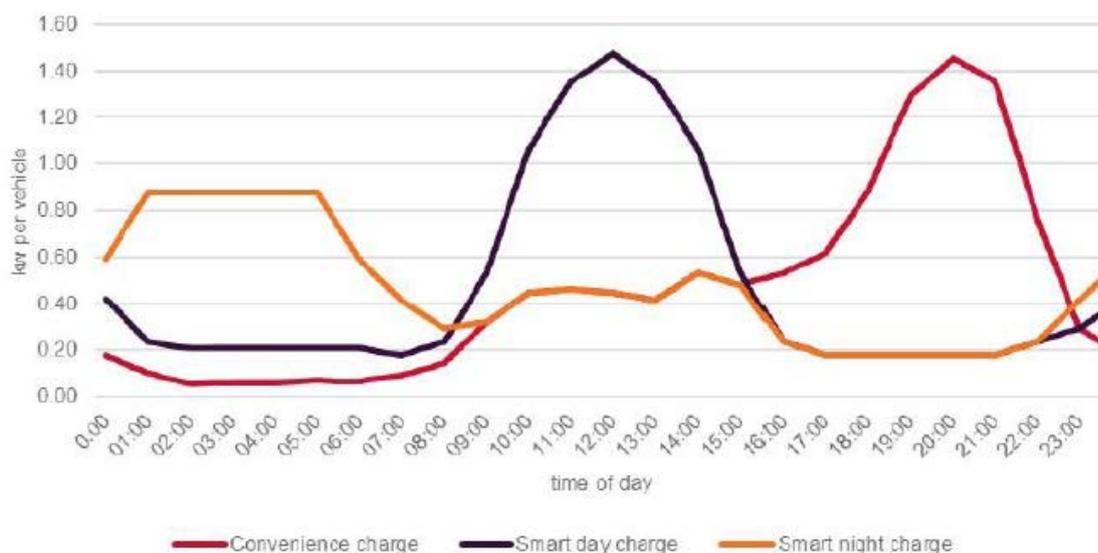
⁵ Energy Networks Australia, Staying warm this winter – and keeping bills down (26 April 2018), www.energynetworks.com.au/news/energy-insider/staying-warm-this-winter-and-keeping-bills-down/.

⁶ See AEMO ISP 2019 (August 2019) Input and Assumptions workbook.

Given that EVs can have a significant impact on maximum demand, our stakeholders have generally understood the role network tariffs can play to ensure efficient outcomes. They want a future where the demand growth associated with the expected increased penetration of EVs is no more than necessary and the costs of resulting network augmentation are appropriately targeted.

Tariff design is an important element in managing the impact of EVs by providing pricing signals that reward customers for charging EVs outside peak times. In particular, as seen in figure 6, cost reflective tariff structures such as Time of Use (ToU) can be used to incentivise customers to charge their EVs during the day or overnight instead of during peak time. These tariffs will also encourage uptake of new technologies such as automated smart night charging.

Figure 6 Electric vehicle daily charge profile, residential user (weekday in February)



Source: AEMO 2018, Electricity Statement of Opportunities, August 2018

As discussed further down, our Digital Network project proposed in the upcoming 2021-2026 regulatory period can enhance the effectiveness of tariff design to support new innovations such as EVs.

Solar PV and home batteries

The capacity of installed solar PV across Victoria is forecast to continue to increase over the 2021-26 period.

Cost reflective tariff structures can efficiently reduce the need for future network investment by encouraging customers to invest in energy solutions and behave in ways that minimise network demand peaks or solar export peaks.

New solar customers already have an incentive to use their solar generation, rather than export it, since the avoided cost of grid energy is usually higher than the standard solar feed-in-tariff. Currently a customer receives a minimum of 12 c/kWh for their solar exports and pays around 25 c/kWh on a single-rate retail tariff. This means new solar customers generally have an incentive to defer solar output from midday to the early evening, for instance by installing west-facing solar panels or to use a batteries to charge from their solar panels and discharge when electricity is needed.

Network tariffs can strengthen this incentive by setting rates higher in the early evening compared to around midday.

New connections growth

New customers connecting to the network in the 2021-26 regulatory period is a large driver of network capacity investment with the Victorian residential customer base growing by about 2.4% per annum (around 52,000 new homes each year).

However, new customers pay a capital contribution when connecting to the network. This is calculated so that any costs not estimated to be recovered through long-term tariffs are collected from the newly connecting customers.

2.6.2 How vulnerable customers are identified and treated

We observed from our stakeholder engagement that the level of support for change depends materially on the outcomes for vulnerable customers. Some customer advocate groups voiced concerns that we would be unable to identify all vulnerable customers in any solution that sought to exclude vulnerable customers from tariff reassignment. In particular, concern has not only been voiced for vulnerable customers as a single, but difficult to identify, cohort (our analysis in section 4.2.4 shows that on average vulnerable customers would be better off on a new ToU tariff), but also in relation to outcomes for individual vulnerable customers.

For example, a solution that identifies and excludes reassignment of customers on life support and with a medical cooling concession only amounts to around 1.5% of households. This would mean some customers on retailer payment assistant schemes or claiming the mains electricity concession who we can't individually identify could still be negatively impacted by being reassigned to a new tariff structure. Similarly, stakeholders indicated that that mortgage-stress customers or some pensioners—who as a group are increasingly installing solar panels—may also be considered vulnerable.

We've helped 68 customers in Melbourne's western suburbs save a combined \$22,000 in savings as part of a program run with Australian Energy Foundation and the Western Bulldogs. We did so through a bill literacy program developed specifically for financially vulnerable, culturally and linguistically diverse, and new migrants. The program will continue in 2020 and become part of our community outreach.

While there was support for complementary measures (such as retailer communications, literacy programs, technology rebates, energy efficiency programs and peak time rebates), there was also concern that these initiatives may not penetrate a significant part of the household customer base who do not, or cannot, engage in the energy market.

In light of the difficulty of identifying vulnerable customers, we decided to adopt a more conservative assignment and reassignment policy for the 2021-26 period. The objective of this approach was to ensure that vulnerable customers would not be adversely affected by the proposed changes.

2.7 Tariff reform in future

Any change to tariff structures will mean that some customers are better off and some worse off.⁷ As noted above, our stakeholders have been clear that any changes must be managed in a way that ensures customers are not unfairly disadvantaged. These concerns led us to consider more conservative transitional arrangements and the potential impact on the total costs to customers, as explained below.

⁷ This is particularly the case under our revenue cap form of price control.

Peak demand growth is not expected to rise much over the 2021-26 period, meaning that additional capacity investment will be a relatively low part of our cost base in the short term. As a result, deferring these investments over this time would have a modest impact on customer bills. Table 2 shows that even under the extreme case where we deferred all capacity investment, the impact on household bills would be less than 1% for all Victorian networks.

Table 2 Contribution to 2026 retail bill when assuming all of 2021-26 capacity investment caused by average coincident peak demand growth is deferred

Distribution area	Demand-driven augmentation expenditure	Contribution to 2026 retail bill	
	2021-26 (\$2021, \$m)	Dollars (\$2021)	% of total bill
CitiPower	18	1	0.1
Powercor	124	3	0.2
United Energy	75	2	0.2
Jemena	102	6	0.4
AusNet Services	92	4	0.2

Source: Victorian distributors

Given the minimal impact on customers in the short term, there is less pressing need to mandate cost-reflective tariffs across our household and small business tariff classes in this period. A more gradual transition that focuses on readying customers for ToU over time and making incremental changes to peak periods was considered more palatable by a number of stakeholders (see section 4.2). This approach would also make moves toward cost-reflective tariffs in future, which are key to ensuring long-term peak demand is as efficient as possible.

We have also considered the potential medium to longer-term benefits of moves toward more cost reflective network pricing more broadly. Some of these broader benefits include:

- reducing network investment to support future electrification and rapid population growth which over time, should lead to lower network costs for all consumers
- keeping pace with the unprecedented changes in the energy landscape to adapt to new and emerging energy technologies, and reflect changes in the way customers use electricity and interact with the grid
- move demand away from peak generation periods to help reduce wholesale prices.

2.8 Complimentary measures to tariff design

Our stakeholders have told us that tariff reform needs to be accompanied by a strong communication and education program for customers. They considered that a successful communication plan requires cross-industry cooperation and that working effectively with retailers is important.

The complementary measures that we intend to further investigate and support over 2021-26 includes:

- **Literacy programs**—we are planning to support energy literacy programs within the communities we serve.
- **Technology rebates**—in our view, home automation is a key enabler of more complex tariff structures. While a simple peak/off-peak ToU tariff structure is relatively straight-forward for customers to understand

and recall, in the future there may be a business case to provide rebates for home energy management services and technologies that will automate customers' responses to network tariffs.

- **Energy efficiency programs**—sensible, cost-effective energy efficiency programs can help lower energy usage overall, and those that target air-conditioners can help mitigate peak demand.
- **Peak time rebates**—in areas where there are network constraints, networks can reward customers for reducing their consumption during nominated critical peak periods, or reward customers for allowing the network to control certain devices during critical peak periods.

As we learn more about how our customers want to engage in Demand Response, greater numbers of customers are participating and consistently using less energy during critical periods. Over the 2021–2026 regulatory period we will also continue to learn more about how our customers want to engage with us through:

- implementing consumer segmentation research to **increase customer engagement** and **drive better network outcomes**
- **understanding customer motivations** and drivers so that existing and future programs incorporate their needs and expectations
- working with network planners to ensure we **target the right customers** in those areas of most need
- identifying the partners to help us **build scale and develop programs** that provide meaningful value to customers and the network.

2.8.1 Enhancing tariff design through technology

Our Digital Network project,⁸ proposed in the upcoming 2021-2026 regulatory period will also enhance the effectiveness of tariff design and demand management, and support new innovations such as EVs. Digital Network technology, such as data platforms and algorithms, will allow us to manage the network more efficiently in near real time through better forecasting, monitoring, diagnosis and eventually through automation. These capabilities will allow us to:

- **Adapt network tariffs** - we will monitor the impact of increasing EV penetration on demand and discern EV charging patterns in order to develop more effective network tariffs specifically for EVs that encourage usage away from peak periods. This could also be applicable to other innovations such as solar-batteries.
- **Enhance the effectiveness of load control** - we will optimise existing customer hot water load control and rolling out new customer load control programs e.g. air conditioners, pool pumps, EVs.

⁸ See business case PAL BUS 7.08 - Digital Network - Jan2020 - Public for more information.

3 Tariff classes

This section explains the tariff classes we propose for the 2021-26 regulatory period, and how they reflect our pricing objectives and requirements under the Rules.

Tariff classes are described for our direct control services. Direct control services are those that are regulated by the AER. They are categorised into standard control services, and ancillary services—which include AMI metering services as well as specific services requested by a user. Here we describe how we divide our customers for each service into tariff classes.

3.1 Standard control services – what have we done?

The standard control services tariff classes we are proposing to include in our tariff schedule in the 2021-26 regulatory period are shown in figure 7. These are the same tariff classes that we had in place for the 2016-20 regulatory period.

Figure 7 Tariff classes - standard control services

	Tariff class	Supply voltage	Annual consumption
	Residential	< 1,000 V	N/A
	Small and medium business	< 1,000 V	< 160 MWh pa < 120 kVA max demand
	Large low voltage	< 1,000 V	> 160 MWh pa > 120 kVA max demand
	High voltage	1 kV – 66 kV	N/A
	Sub-transmission	≥ 66 kV	N/A

Source: Powercor

3.2 Standard control services – why have we done it?

Having five tariff classes enables us to achieve an optimal balance between differentiated price signalling—taking into account customer load and connection characteristics—and the transaction costs of providing more customised tariffs.

In other words, the five tariff classes:

- correspond to our five major customer segments which have materially different costs to connect and serve
- ensure we can avoid unnecessary costs to ourselves, retailers (for example around IT and billing systems and processes changes) and customers.

We can also assess our approach against our pricing objectives:

- Equity – As we have approximately 840,000 residential and business customers with a range of different load and connection characteristics, we group customers with shared characteristics together. This ensures that similar customers pay similar prices.
- Efficiency – Our set of tariff classes enables us to design tariffs that encourage efficient usage decisions by ensuring that our charges reflect the extent to which customers use the network. For example, large business customers who connect at high voltage levels do not use the low voltage network. Also, limiting the number of tariff classes reduces complexity.

3.3 Alternative control services tariff class – what have we done?

In addition to our standard control services, we provide user-requested services and metering services (alternative control services).⁹ The full cost of these services is attributed to the customer who receives the service.

There is only a single tariff class for these services—the ‘alternative control services tariff class’.

Within this tariff class, there are multiple user-requested services, each with their own associated price or unit rates that are proposed by us but approved by the AER. The method for determining prices for these services takes two different forms as described in table 3.

⁹ Our metering services include the provision of smart and accumulation meters for small customers and the associated data services. These have not changed for those that applied during the 2016-20 regulatory control period.

Table 3 Alternative control services

Service	Tariff class definition
Fee-based services	<p>Includes:</p> <p>Alternative control services for which the AER has applied a cap on prices, for example, services such as basic connections, de-energisations, re-energisations</p> <p>Metering for ‘small customers’ (Type 5, 6 and AMI meters), Type 7 metering¹⁰ and other auxiliary metering services provided on a customer-requested basis.</p> <p>The operation, maintenance and replacement services for public lighting, which the AER has applied a cap on the price per lighting type.</p>
Quoted services	Services for which the AER has placed a cap on the applicable labour rates (inclusive of labour on-costs and overheads). Prices for quoted services are based on quantities of labour plus materials and contractor services.

Source: Powercor

3.4 Alternative control services – why have we done it?

We assess our approach against our pricing objectives:

- **Simplicity and Economic efficiency** – only one tariff class is necessary for these services because the price applies to a service and does not change according to the type of customer using the service. There is no advantage in dividing customers into further groups.
- **Equity** – we allocate the costs of providing user requested services to those who request them, and set our prices to recover these costs. This ensures that only those customers who benefit from a service pay for it.

¹⁰ Definitions of the different types of meters can be found here: AER, Final Framework and approach AusNet Services, CitiPower, Jemena, Powercor and United Energy, Regulatory control period commencing 1 January 2021, January 2019.

4 Households

The purpose of this chapter is to set out:

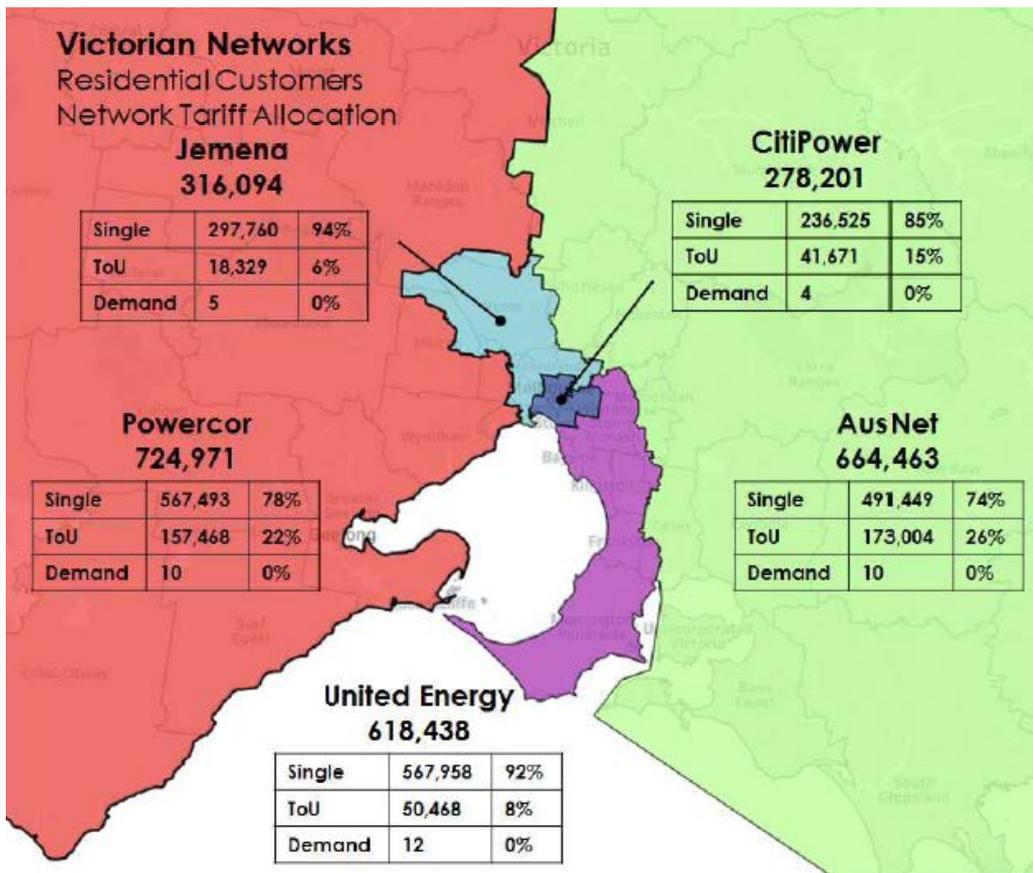
- who are our household customers and what are their existing network tariffs
- our customer and stakeholder engagement that informed our proposed changes
- our proposed changes for household network tariff structures and assignment policy, as set out in our TSS
- why we consider our proposed changes best meets the needs of our customers and stakeholders, taking account of our consultation process, our pricing objectives and the Rules requirements
- how customers can save on our new ToU tariff.

4.1 Our household customers

The households in our network area are diverse. For example, our customers differ in terms of rural or regional centre location, people in the household, age, medical needs, financial means, and whether they have solar PV.

Figure 8 shows the number of households in each Victorian network on single-rate, ToU and demand tariff structures.

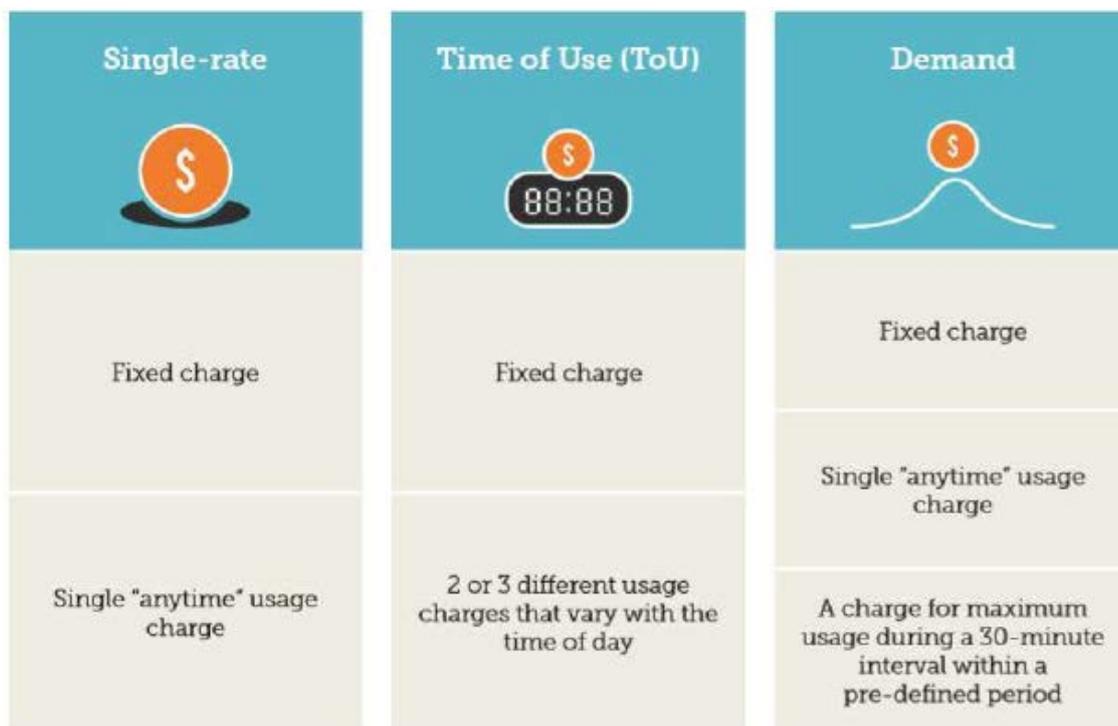
Figure 8 Victorian residential customers on each tariff structure



Source: Victorian distributors

Currently, we have three main types of residential electricity network tariff structures, as can be seen in figure 9.

Figure 9 Simplified view of different network tariff structures



Source: Powercor

The makeup of household tariffs is described below:

- More than 80% of Victorian residential customers are currently on a **single-rate** tariff structure where usage charges are not dependent on time of day.
- In 2013, the Victorian Government introduced an optional three-part time-of-use tariff structure called the '**flexible**' tariff where the price of electricity changes depending on the time at which energy is used. The peak period is 3 pm to 9 pm weekdays. Some, but not many, customers chose to opt in to the flexible tariff.
- In 2017 the Victorian distributors introduced a **demand** tariff on an opt-in basis. Very few customers have opted into this tariff.
- The remaining residential customers are currently assigned to existing ToU tariff structures mostly with a peak-period of 7 am to 11 pm typically on weekdays only. These **legacy** tariffs are currently closed.
- Customers may also have a dedicated circuit that supplies hot water or slab heating, which is on a secondary **controlled load** tariff. These customers are charged a low network price in exchange for us being able to control their load.

4.2 Our household customer and stakeholder engagement

In developing our TSSs for the 2021-26 period, the Victorian distributors have collectively listened and responded to the views of our stakeholders. As individual businesses we have also undertaken our own customer and stakeholder engagement as part of our normal engagement processes, including for our wider regulatory reviews.

In this section we provide details of:

- the collaborative Victorian distributors engagement
- our business-specific engagement, independent of the other Victorian distributors.

4.2.1 Collaborative Victorian distributors engagement

Over the past two years the Victorian distributors have adopted a multifaceted engagement approach to jointly develop our tariff structure and assignment policy for small customers (both households and small businesses consuming under 40MWh per annum).

Jointly, we have:

- held three pricing forums with informed stakeholders and customer groups
- published two consultation documents on tariff design, and implementation options
- engaged a study of the impact of our ToU tariffs on a sample of vulnerable customers
- researched community perceptions toward preparing for EV
- collated what we have individually heard from small customer and retailer interactions.

We sought to actively involve our customers and stakeholders in decision making on tariff structures for the 2021-26 period. Our role has been to frame discussion and provide analysis to explore tariff structure options that meet our customers' preferences and expectations. Our proposal reflects many of the learnings from engagement with our stakeholders.

4.2.2 Pricing forums

In late 2017, the Victorian distributors embarked on an extensive consultation process in which we engaged a wide range of stakeholders who had an interest in, or might be impacted by, network pricing reform in Victoria. The participants in the forums included consumer representatives, regulators, Victorian government representatives and retailers. We actively sought out people who have an interest or influence on pricing reform. By bringing all the Victorian networks and interested stakeholders together, we could strive for unity of vision and a common approach to tariffs.

We held three in-depth forums. The third forum report is attached and also provides a summary of the first and second forums.¹¹

We learned that customers have strong views on what our pricing objectives should be and the design of our tariff structures. Prior to each forum, we published a discussion paper or fact sheet to help participants understand the context of the sessions, and what we were consulting on. We designed the forums to draw out a diversity of perspectives. Many of our participants delivered presentations based on the themes of the engagement session. We also wanted participants to have conversations with each other, and report back their views to the group. Our approach reflected our goal of moving from a one-way conversation to meaningful consultation.

¹¹ See PAL ATT031 - Seed - Household Network Pricing - Apr2019 - Public.

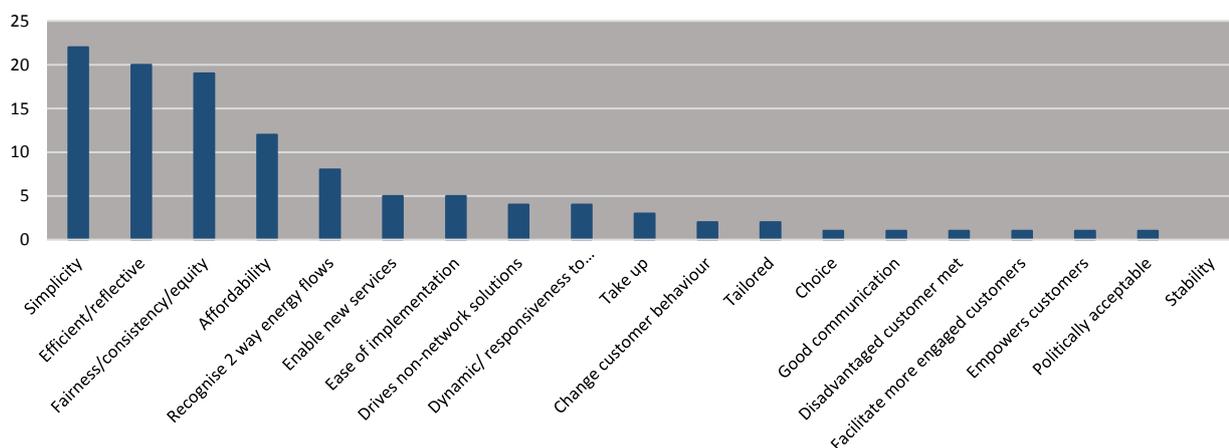
Forum 1 – Key outcome: Pricing objectives

In the first forum in November 2017, our aim was for attendees to collaborate, share and listen to stakeholder views on the challenges and opportunities that can arise from household electricity network pricing changes. We sought to:

- identify key objectives to guide network pricing changes
- discuss how these objectives are best progressed
- identify any research gaps that need to be filled, and the complementary measures that need to be considered in our pricing design.

In this session, we heard that network pricing reform is desirable. Through the forum exercises, participants provided a range of potential pricing objectives (see figure 10).

Figure 10 Stakeholder voting on important objectives for pricing design



Source: Victorian distributors

Participants then narrowed the objectives down by voting on ones they preferred. The top 5 objectives of simplicity, economic efficiency, adaptability, affordability and equity were adopted in our consultation process, as discussed in section 2.5.

Building on the simplicity objective, our customers, retailers and other stakeholders told us that tariff structures should be able to be understood and managed by both retailers and customers as retailers often mirror network tariff structures. Uniform tariff structures across Victoria go a long way to achieving this.

Stakeholders also told us that in the face of an increasingly complex energy market, there is a need for pricing reform. Stakeholders wanted us to empower households to reduce bills by encouraging the efficient use of energy. They also wanted us to address cross-subsidy issues and reward consumer behaviours which reduce network costs. Our stakeholders also wanted to make sure that vulnerable customers are not worse off as a result of tariff reform.

Forum 2 – Key outcome: Who responds to network prices?

In the second forum in April 2018, we asked participants whether tariff structures should be targeted towards the retailer or the end customer. The preference of forum members was that end customers' wishes should be kept in mind even if tariff structures are directed towards retailers. This recognised that it is the retailer's choice

as to whether the network tariff structure is passed onto the end customer, but ultimately some end customer impact is likely.

We also sought the views of our stakeholders on broad pricing design options and how these relate to the objectives agreed to in the first forum. We heard:

- support for cost-reflective tariff structures, but a mixture of views on the most appropriate design
- some support for reassigning customers to a cost-reflective tariff structure after a period of transition, but also support for opt-in only
- a desire for analysis to support customer impacts.

At the end of the second forum, the Victorian distributors committed to providing a shortlist of tariff structures that would meet the objectives established in the first forum. In September 2018, we published a consultation paper which shortlisted four tariff structure options and implementation options. This included single rate, ToU, peak usage subscription and demand charges.

Forum 3 – Key outcome: Majority support for a two rate TOU tariff with a fast pace of change

The third forum was held in March 2019. The Victorian distributors presented three “strawmen” positions for consultation.

The first strawman was a new ToU tariff structure. The structure would have a higher rate for energy use between 3 pm and 9 pm that would apply for all days of the year. About 80% of participants were ok with or supported a ToU structure. The simplicity of a two-rate, year-round structure and its coverage across Victoria were the key reasons why participants supported the proposal. A key reason why some participants did not support the proposed tariff structure was uncertainty on how it would impact vulnerable customers.

The second strawman related to transitioning customers to the proposed new ToU pricing structure. In the lead up to the session, the Victorian distributors' consultant ACIL Allen (discussed in more detail below) made a presentation on the impacts of ToU structures on vulnerable customers. Our proposed strawman was that life support customers and medical cooling concession customers would not be re-assigned to a ToU tariff structure, and all other households could 'opt-out' from the new tariff structure for five years. About 79% of participants were ok with or supported the transition strategy. A key message we heard was that stakeholders wanted more information on the impacts to particular household segments including small vulnerable customers and those on existing ToU tariffs. In section 4.5, we discuss how the feedback from our participants has influenced our transition strategy.

4.2.3 Joint Victorian distributors consultation documents

The Victorian distributors provided two opportunities outside of the forums for stakeholders to provide formal written feedback.

- In September 2018, we published an options paper where we asked stakeholders for their views on tariff design, implementation and transition (pace of change), which informed the strawman we provided at our third forum.
- In October 2019, we sought stakeholders' views on an amended position to that provided at our third forum.

4.2.4 ACIL Allen study of vulnerable customer impacts

As noted above, our stakeholders were generally supportive of pricing options with but wanted more information about how proposed changes would impact vulnerable customers. In response to these customers

and stakeholders views, we commissioned ACIL Allen Consulting (**ACIL Allen**) to undertake further analysis. See attachment PAL ATT029 - ACIL Allen - Vulnerable customer impact - Mar2019 - Public for more information.

ACIL Allen surveyed around 2,000 Victorian electricity customers to identify various demographic data that might indicate vulnerability and matched it to their electricity consumption profiles over a year. ACIL Allen then determined whether the customer would be better off on a single rate or equivalent ToU tariff.¹²

The analysis showed that vulnerable customers collectively would be better off if everyone was on a ToU tariff, with the average vulnerable customers’ bill impact being an \$11.93 decrease. This indicates that vulnerable customers generally use relatively less electricity during peak periods. However, the diversity of consumption profiles occurs both within vulnerable customers as it does for non-vulnerable customers. The analysis showed that, while on average vulnerable customers would be better off, there would still be around 27% of vulnerable customers who would be negatively impacted by more than \$10 per annum (see figure 11 and table 4). Across the population of Victorian vulnerable customers, this would be a significant number of households.

Figure 11 Customer impacts of moving everyone to our new ToU tariff



Source: ACIL Allen PAL ATT029

Table 4 Customer impacts of moving everyone to a ToU tariff

	Vulnerable	Other
Proportion of customers with bill decrease	32%	19%
Proportion of customers with no change (within +/- \$10)	41%	41%
Proportion of customers with bill increase	27%	40%
Sample size	293	1658

Source: ACIL Allen PAL ATT029

These results showed that while most vulnerable customers would have little change to their bill, around 27% of vulnerable customers would have a price increase.

¹² An equivalent ToU tariff means one that is priced to ensure that the distributors receive the same total revenue as if all customers were on the current single-rate tariff.

4.2.5 JWS research on community perceptions toward preparing for EVs

The Victorian distributors engaged JWS Research to undertake qualitative research to uncover consumer responses (initial reactions, thoughts, concerns, questions) to investment in infrastructure to prepare for EVs, and the role network tariffs could play in EV take-up. See PAL ATT030 - JWS - Community perceptions electric vehicles - Sep2019 - Public for more information.

Figure 12 provides a summary of the key findings. In particular, we heard:

- support for ToU tariffs
- anecdotal evidence of customer perceptions of EVs that supports AEMO’s forecast of minimal demand impact in the current period.

Figure 12 Summary of JWS Research key findings



Source: JWS Research PAL ATT030

What we have heard from customers and stakeholders

Table 5 provides the key themes from these consultation activities as well as from a number of one-on-one and small group meetings and individual distributor engagements with our customers. We also provide key themes on how we have responded to these.

Table 5 What we heard and our response

What we have heard	Our response to what we have heard
Households	
<p>Electricity pricing is complex and not well understood.</p> <p>It is fair for households to pay in line with the cost they each impose on shared community infrastructure like an electricity network.</p> <p>Some customers may need to be supported if any changes to tariff structures are imposed.</p> <p>Mixed support for single-rate, ToU, and demand tariff structures.</p> <p>ToU pricing is more readily understood than demand pricing.</p> <p>There is little support for a subscription pricing¹³ because of its relative complexity.</p> <p>Peak time rebates are supported if cost-effective.¹⁴</p>	<p>The status of electricity as an essential service drives most households to want us to price our services in a way that carefully considers those least able to respond to any changes we might implement.</p> <p>Customers prefer pricing mechanisms that reward rather than mechanisms that penalise (a preference for “carrots” over “sticks”).</p> <p>Many customers, even when they have access to personalised information, time, and experts, have difficulty understanding demand pricing. Meanwhile, ToU pricing is well understood and “part of life” – customers readily cite examples such as public transport fares as examples of ToU pricing. We have therefore proposed a new ToU tariff as the new default tariff (see section 4.3).</p>
Customer and Stakeholder representatives	
<p>Tariff structures should be able to be understood and managed by both retailers and customers.</p> <p>Pricing objectives should be: affordability, simplicity, equity, economic efficiency and adaptability. Recognition that trade-offs are required when meeting these.</p> <p>Peak time rebates are supported if cost-effective.</p> <p>Transition and complementary measures are important to consider but the level of support for change depends materially on the outcomes for vulnerable customers. Any reassignment should seek to minimise the number of negatively impacted vulnerable customers.</p>	<p>We agree that moving to more cost-reflective tariff structures should be our aim (see our proposed changes, section 4.3).</p> <p>Given retailers often mirror network pricing structures, it is important that customers understand, and can therefore respond to, network tariff structures. When there is a trade-off between benefits related to complex solutions and benefits of simple solutions, we have therefore erred on the side of simplicity. For example, in our choice of a two-rate tariff and selecting when our peak period applies.</p> <p>We will continue to explore demand management options as a potentially powerful tool to manage peak demand.</p> <p>To minimise the potential to inadvertently and negatively impact vulnerable customers, we only assign or reassign customers when there is a customer-led trigger that is less likely to be associated with vulnerable customers. i.e. new connections, installing solar, upgrading to a three-phase power supply and potentially EVs.</p>
Retailers	

¹³ This option applies a fixed charge for each customer based on pre-defined peak period usage band.

¹⁴ Peak time rebates involve paying customers in a particular local area (depending on the local of a constraint) a rebate for using less electricity than they were intending to at the time we called an electricity network peak event.

Network tariff structures should be focussed on retailers rather than customers.

Customers need to be informed of any changes that could result in their bills from a change in tariff structures.

Generally, prefer mandatory reassignment onto a new ToU tariff.

Some query whether peak periods should apply on weekends and public holidays.

Customers would find extended transitions where prices move slowly toward cost-reflective tariffs difficult to communicate

Generally, retail tariff structures have tended to closely align to network tariff structures – as a result, stakeholders have asked us to have one-eye to customer outcomes if this pattern continues into the future.

We agree that customers should be made aware of material changes to their retail tariff structures.

Only the retailer itself is aware of when and how it may change a customers’ retail tariff structure, so we consider it makes sense for retailers to lead communication and education efforts.

We consider that because peaks can occur on weekends and public holidays combined with the general preference for simplicity means we should apply our peak period to weekends and public holidays.

We will set our available tariffs at price levels we consider cost-reflective. We will not seek to slowly move price levels toward cost-reflective levels over time (see our TSS).

Source: Victorian distributors

4.2.6 Powercor specific customer engagement

We recognise the importance of undertaking a collaborative engagement process with our own end-customers to take into account network-specific issues. As a result, we have engaged extensively with customers through our Energised 2021-2026 program to support the development of our tariffs and our proposal for the 2021-2026 regulatory period. See Appendix PAL APP01 - Stakeholder engagement - Jan2020 - Public for a detailed summary of our engagement activities.

In May 2017, we released our Stakeholder Engagement Framework to guide how we would work with stakeholders to deliver on our promise to Victorians across our three networks, CitiPower, Powercor and United Energy. The Framework demonstrates our commitment to engagement at all levels. It ensures stakeholder insights are considered by decision makers at the highest level and how we report back on how insights are used.

Figure 13 Our commitment to engagement as outlined in our Stakeholder Engagement Framework



Source: Powercor

Our engagement strategy drew on proven and effective methodologies, taking into consideration the complexity of topics to be discussed and the wide range of interests among customer and stakeholder groups, which ranged from individual households to major industries, as well as our Energy Futures Customer Advisory Panel and Customer Consultative Committee.

Between 2017 and 2019, we engaged with our customers through four key phases, as shown in the table below.

Table 6 Four phases of customer engagement

Phases	Objectives	Residents	SME's	C&I's
I & 2 (2017)	Explored customers' initial views on regulatory issues	Surveys Mini groups	Surveys	In-depth interviews
3 (2018)	Feedback on initial proposals and investment options	Surveys Forums	Surveys	In-depth interviews
4 (2019)	Deep-dive into key issues and fine-tuned Draft Proposal	Surveys Forums	Surveys	In-depth interviews
Participants		1,409	414	10

Note: in addition to the above-stated activities, we have had over 700 interactions with stakeholders in one-on-one meetings, workshops, deep dives and correspondence.

Source: Powercor

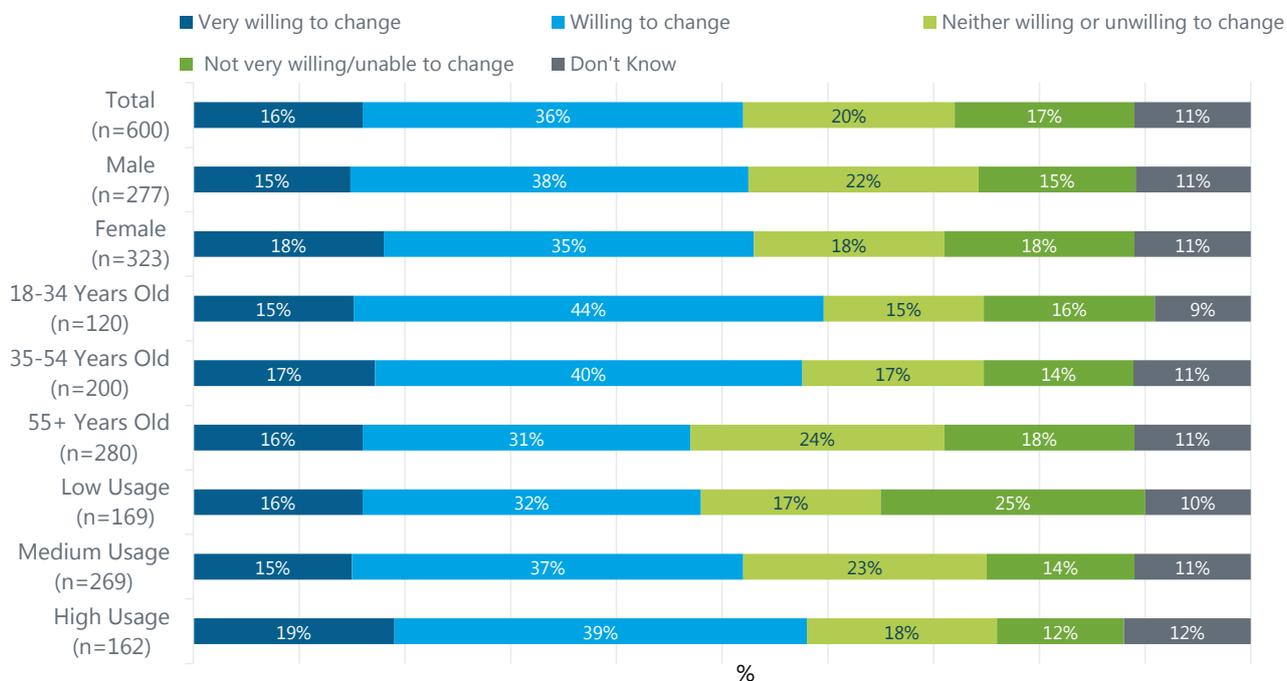
Our Energised 2021-2026 program covered many topics, one of which was pricing. We sought our customers' views on how tariffs should be structures. In particular participants told us that they:

- liked the idea of considering different tariff options, with the majority agreeing that customers needed choice to select the plan that best suited them
- believed that the options needed to be simple and easy to understand
- preferred to opt-in rather than opt-out of a new tariff.

When asked specifically about our tariff structures, a flat rate was considered easiest to understand. However more than half (54%) thought that a time of use tariff would suit them best, while 38% of participants opted for a flat rate.

Following from this, 52% of customers indicated they were willing to change when they use electricity to save money as seen by figure 14.

Figure 14 Residential customer segments' willingness to change electricity usage timing



Source: Powercor

These views align with our proposed new ToU changes and pricing objectives as discussed in section 4.4 below both in terms of the way we have designed the tariff, for example to meet the simplicity objective, and the proposed gradual transition path.

4.3 Proposed changes

Our proposed changes to household tariff structures seek to accelerate the pace of change without jeopardising the stakeholder support that is crucial to enable change.

The main change we propose to make for the 2021-26 period is to introduce a new two-rate tariff structure (**new ToU tariff**). This is set out in section 4.4 and is also presented in our TSS.

From 1 July 2021, the new ToU tariff will become our default tariff for household customers. We will assign the following customers onto the new ToU tariff:

- New connections (i.e. new homes connecting to the network for the first time, not re-energisations).
- Customers who choose to upgrade from single-phase to three-phase supply.¹⁵
- Customers who choose to install solar or batteries.

¹⁵ Three-phase supply upgrades can occur when customers are installing large air-conditioning systems, kilns, significant power tools (sometimes used in workshops or for home renovations), under floor heating, large pool pumps, solar panel array above 10kVA or electric vehicle chargers. The Victorian networks provide around 3,000 supply upgrades per annum.

We would also like to include owners of EVs although currently lack a credible means to identify EV customers. Should a register of customers who purchase EVs or other robust means of identifying an EV customer over the 2021-26 period, we would also seek assign these customers to the new ToU tariff. In the absence of this information, we will work with other stakeholders to encourage EV owners to opt in to the new ToU tariff.

The Victorian distributors will:

- retain our respective single-rate, demand charge, and controlled load (dedicated circuit) tariff structures from the 2016-20 period.
- close our suite of legacy ToU tariff structures to new entrants.¹⁶

Table 7 summarises our proposed tariff assignment and reassignment for households.

Table 7 Household assignment and tariff options from 1 July 2021

Proposed tariffs	Proposed assignment	Tariff options (upon request from retailer)
New ToU	New connections Supply upgrades to three-phase Households installing solar or battery Existing flexible tariff customers	Single-rate or demand
Single-rate	All existing customers remain	New ToU or demand
Legacy ToU	All existing customers remain	Single-rate, new ToU or demand
Demand	All existing customers remain	Single-rate or new ToU
Dedicated circuit	All existing customers remain	Single-rate, new ToU or demand

Source: Victorian distributors

The remainder of this chapter provides the reasons for our proposal.

4.4 Our default tariff structure and how it meets the pricing objectives

In the 2021-26 period, we propose that the default tariff structure for households be a new ToU tariff structure. The key design features of the new ToU tariff structure are:

- a two-rate tariff structure
- peak period occurring between 3 pm to 9 pm local time, all days of the week including public holidays and regardless of season
- off-peak applying at all other times.

The underlying reasoning for this tariff structure is explained below.

¹⁶ Seventeen per cent of Victorian customers are on variations of legacy network ToU pricing structures with higher charges generally from 7 am to 11 pm. All these legacy ToU tariff structures will be closed to new entrants. This will ultimately promote simplicity and cost-reflectivity in both network and retail pricing structures, in the long-term interests of consumers.

4.4.1 Why two-rate is preferred to three-rate

Feedback at our third forum strongly preferred the simplicity of a two-rate tariff (see section 4.2.2). Customers only have to remember two times within the day – when the peak period starts and ends. The alternative is a shoulder period where rates are between the peak and off-peak rates. In conversations with us, customers showed an awareness of peak and off-peak pricing, but rarely mentioned a shoulder-period. Our view is that a shoulder period may dilute the effectiveness of the signals, and therefore not be particularly effective.

We therefore propose to only apply a two-rate tariff structure (peak and off-peak).

4.4.2 Why we chose 3 pm to 9 pm peak period

The objective of a ToU tariff structure is to provide customers with an incentive to move discretionary load into off-peak periods, when the network is under less stress.

Stakeholder feedback indicated that we should select a peak-time that reflects when households are using a large amount of electricity at the same time the local electricity network is under stress.

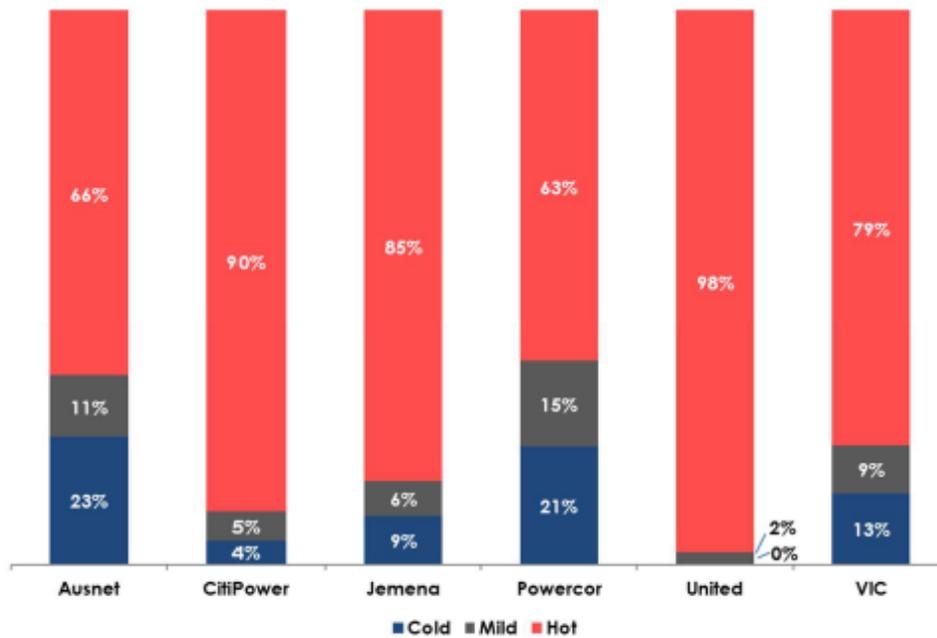
Figure 4 shows when our (approximately) 230 zone substations are under most stress. Most zone substations are peaking between 2 pm and 8 pm (local time).¹⁷ There are also “tails” to this period, with about 10% of substations peaking between 11 am and 2 pm, and 8 pm and 10 pm, local time.

We also need to assess when households are using the most electricity. To do this, we ranked each 30 minute interval between 1 January 2016 and 31 December 2018 by total household consumption across Victoria. We observed that the top 100 household consumption intervals all occurred in December, January, February or March.

We also looked at the temperature when substations peak. As can be seen in figure 15, most occur when it is hot (although there are some that occur in colder months).

¹⁷ Zone substations peaking between 11 pm and 2 am reflect zone substations supplying customers with controlled load.

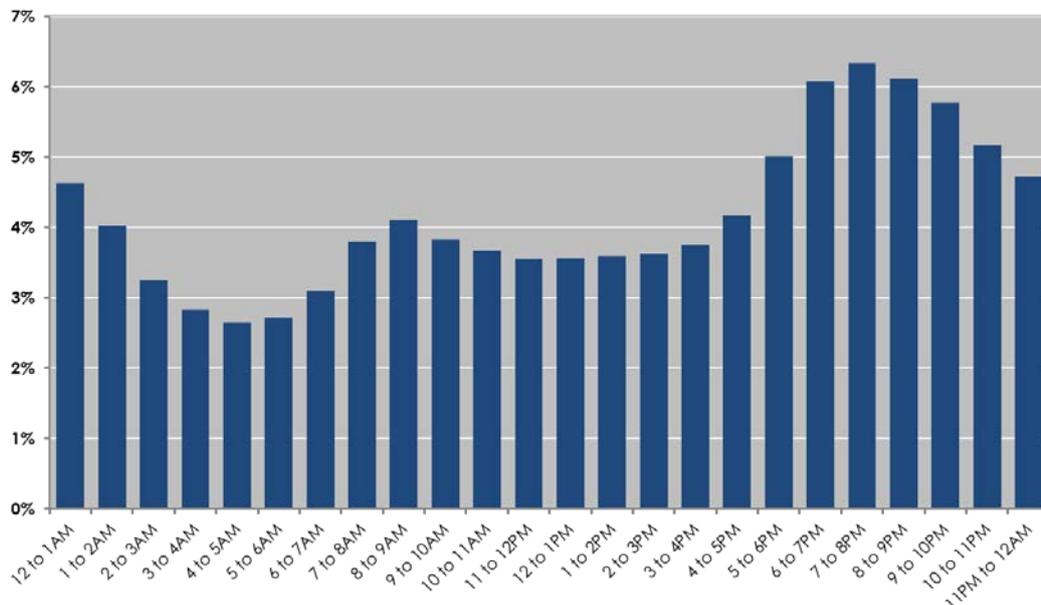
Figure 15 Substation peak by temperature, 2015-17



Source: Victorian distributors

Therefore, while we cannot ignore winter months, our analysis suggests we should focus on household consumption over December to March, which are generally the hottest months of the year. Figure 16 shows that between December and March, households tend to ramp up consumption from 4 pm and continue to use large volumes of electricity to 1am (most controlled hot water heating), peaking between 6 pm and 9 pm during the evening.

Figure 16 Proportion of 2016-18 household consumption by hour of day, local time summer plus March



Source: Victorian distributors

Taking figure 4 and figure 16 together (i.e. when households are using the most electricity and the same time as the network is under most stress), we consider 3 pm to 9 pm, local time, as the optimal peak-time period for our new ToU tariff structure.

One of the key questions we needed to consider in choosing this period is whether this might simply “move” the peak to just before or after this 3 pm to 9 pm time period, or for some networks exacerbate peak demand if that tended to occur on the fringes of 3 pm to 9 pm.

Over the 2021-26 period we don’t expect that peak demand will shift outside 3 pm to 9 pm because:

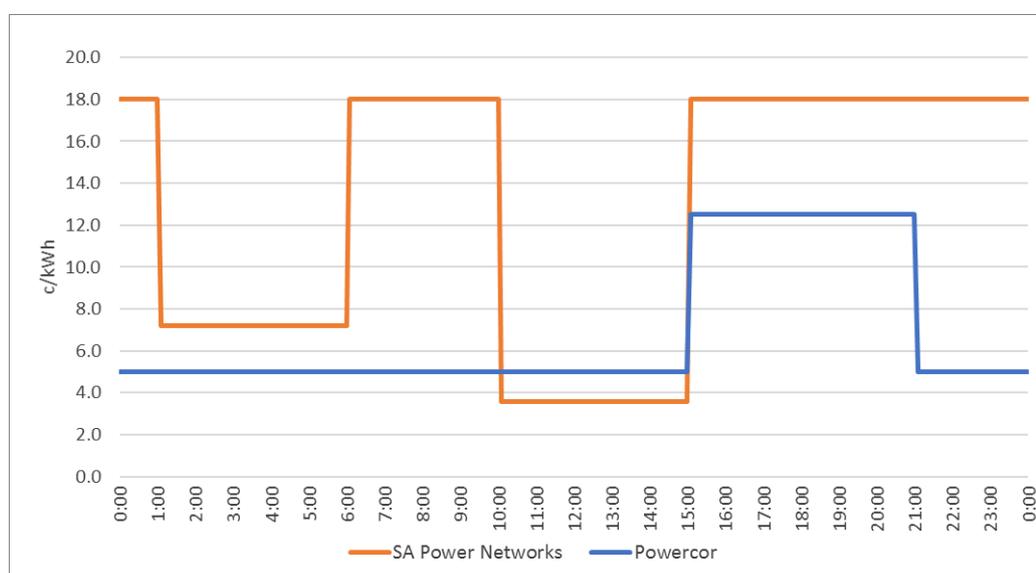
- customers will continue to use air-conditioners on hot afternoons
- EV take-up is not expected to grow to the extent that they will have a material impact on the load shape over this period
- to the extent that EV load grows faster than expected, we expect home convenience-charging to be the predominant charging option in the near-term, and this would likely occur as household arrive home from work from 5 pm
- home battery installations are not expected grow to the extent that they will have a material impact on the load shape over this period
- while solar PV installation penetration is expected to increase, and price signals may encourage more solar panels to be oriented westwards, this is not expected to materially affect demand from 6 pm
- minimal impact is expected from customers moving discretionary load.

We have optimised our new ToU tariff based on demand at the zone substation level of the network, which is the aggregate demand on the low voltage and high voltage network. Whilst we don't expect the aggregate peak to shift from 3pm to 9 pm, in the future localised high solar exports are expected to occur on the low voltage network. If we are to enable these exports, future network investments will be required. Our new ToU tariff with

off-peak rates before 3pm and peak rates after 3pm provides incentives to reduce midday solar exports, for instance by installing west-facing solar panels or to use a batteries to charge from their solar panels and discharge when electricity is needed. Therefore our proposed new ToU tariff serves the dual purpose of providing incentives to reduce network demand and to reduce midday solar exports.

SA Power Networks specifically proposed a 'solar sponge' period when network charges are very low. Our new proposed ToU tariff will provide a similar incentive, but with a simpler ToU tariff. Figure 17 indicates that our proposed ToU rate around midday is within 1 c/kWh of SAPN's proposed 'solar sponge' rate, but our proposed tariff structure is simpler for customers to understand.

Figure 17 Comparison of SA Power Networks and Powercor proposed ToU tariffs



Source: Powercor

4.4.3 Why we are including weekends

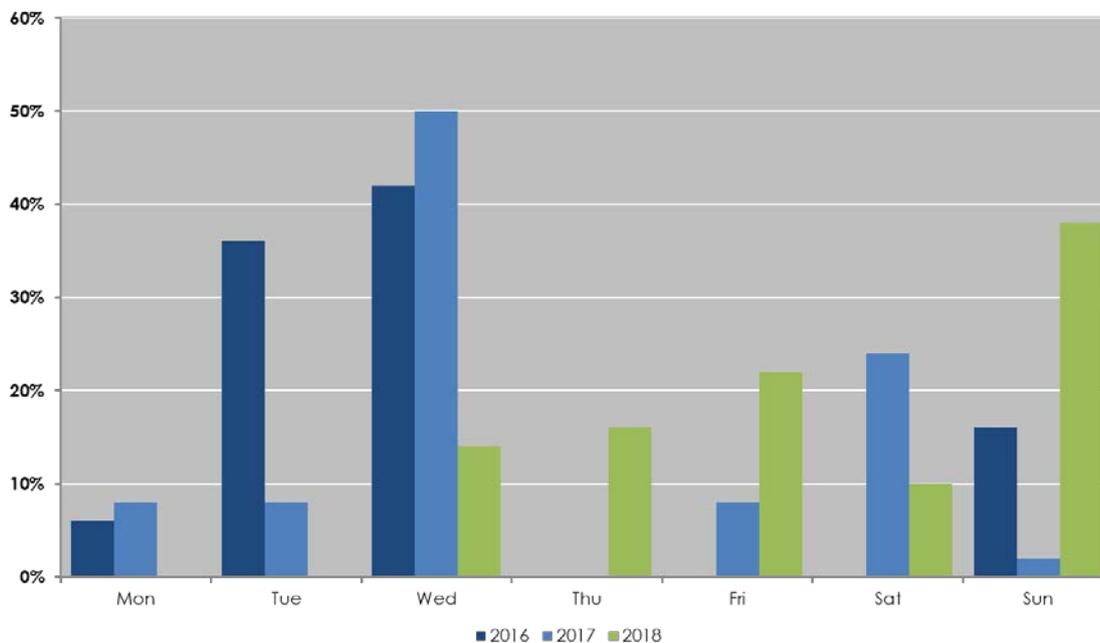
To determine which days to apply the ToU tariff structure for our residential customers we looked at when residential peak loads occur across Victoria, and whether there is any clear pattern to justify including or excluding weekends (104 days of the year) and/or public holidays (13 days of the year).

Residential peaks can and do occur on any day of the week (see figure 18). This is primarily driven by domestic air-conditioning load on hot summer days. We are therefore proposing to apply the ToU tariff structure on all days of the week, including weekends.

The second question is whether we include public holidays. Most substations peak on a very hot day, and very hot days can logically occur on public holidays (most likely those in summer). We heard a mix of views from stakeholders. Some stakeholders preferred the simplicity provided by having the peak period apply every day of the year-customers can easily understand, remember and behave accordingly. Other stakeholders did not agree that peaks should apply on weekends, which, apart from very hot days, generally have much lower demand.

On balance, and considering the potential for a peak to occur on a summer public holiday, we are therefore proposing to include public holidays.

Figure 18 Days on which the top 50 Victorian residential half-hour peaks fell (2016 to 2018)



Source: Victorian distributors

4.4.4 Should the peak period only apply at certain times of the year?

At most zone substations in Victoria, residential peak load occurs in summer. This has led us to consider whether we just apply the new ToU price during summer, or perhaps the period of daylight savings, or year-round.

Stakeholders did not provide strong views on the time of year to apply the peak period. We therefore propose to apply the same ToU pricing all year around because of its simplicity as it:

- avoids customers having to remember when the pricing period starts and ends
- may assist customers understand ToU pricing if the tariff structure is seen on every bill received by the customer during the year, rather than just some bills
- would result in less confusing retail bills as it will avoid potentially two tariff structures appearing on the bills that cover time-periods when the ToU tariff structure does and does not apply
- recognises that some zone substations do peak in winter due to electric-heating load.

4.5 Assignment policy and transition

This section outlines:

- our proposed assignment policy
- our reasons for proposing this assignment policy by reference to our pricing objectives, including:
 - the transition options we considered
 - our customer impact analysis
 - applying what we heard from customers and stakeholders

- our opt-out arrangements for households.

4.5.1 Assignment policy

Table 7 summarises our proposed assignment and tariff options for customers. That is, from 1 July 2021, new connections, upgrades to three phase metering and new solar or battery installations will be assigned to the new ToU tariff structure. From the point of a register becoming available, EV customers would also be assigned to the new ToU tariff structure.

Importantly:

- New residential customer connections and three-phase upgrade customers that are assigned to the new ToU tariff structure may request to be transferred to the single-rate tariff structure or monthly maximum demand tariff.
- AusNet Services will retain their current practice of only allowing solar customers to opt out to ToU or demand tariff structures—this feature supports maintaining appropriate incentives for these customers.
- Jemena, CitiPower, Powercor and United Energy, who currently allow solar customers on single rate, ToU or demand tariff structures, will retain this current practice to support customer choice.

Our full assignment policies are detailed within our individual TSSs.

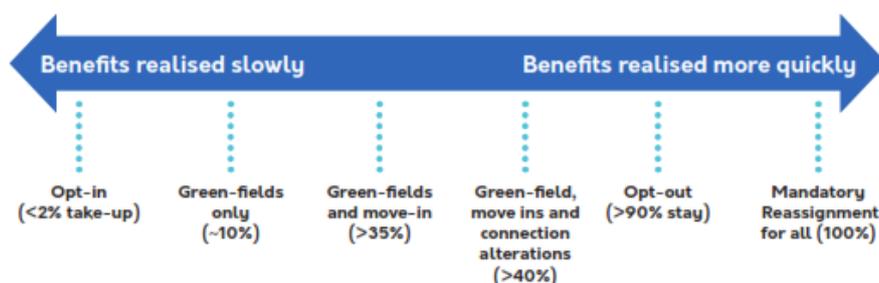
4.5.2 The transition options we considered

There are a range of transition options to assign customers to the default new ToU tariff structure.

In our September 2018 options paper, we consulted on transition options (which we referred to as “pace of change”) as shown in figure 19. At one extreme all customers are assigned immediately onto a new network tariff structure. At the other extreme customers get to self-select by opting into the new network price when they see fit. We acknowledged that the choice might be influenced by whether stakeholders provide greater weight to:

- the collective long term interests of the electricity community - in which case the preference would be to introduce mandatory pricing structure reassignments
- minimising short term individual customer impacts - in which case a slower pace of change might be preferable.

Figure 19 Pace of change options



Source: Victorian distributors

Having received some support in submissions for mandatory assignment, we developed a strawman to test further at our third forum. This included reassigning all customers other than specifically identifiable vulnerable

customers on life support or with medical cooling concessions to the new ToU tariff, but allowing all customers to opt out to a single-rate tariff (or opt into a demand tariff).

The strawman was supported as “Okay [with]”, “Supported” or “Strongly supported” by 79% of forum participants. Four individuals opposed the transition strategy, while three were in the “Uncertain/need more information” category.¹⁸

4.5.3 Customer impact analysis

Victoria’s completed roll out of advanced metering infrastructure (smart meters) allows detailed customer impact assessment. It allows us to assess how each individual customers’ historical bill would be impacted based on their historical behaviour were we to change our tariff structures and/or tariffs.

The strawman presented at our third form involved moving most customers from a single-rate pricing structure onto a ToU pricing structure.¹⁹

We modelled how the move would impact every Victorian Household customer and provided the distribution of household bill impacts across Victoria shown in the figures below.²⁰ To undertake this analysis, we priced our ToU tariff to ensure that the distributors receive the same total revenue as if all customers were on the current single-rate tariff.²¹ These distributional impacts were relatively similar across each distribution network.

Every dot is one household customer. This shows the impacts if we moved all household customers onto the new ToU tariff (including those on legacy ToU tariffs). It shows that there are a significant number of customers with bill increases over 25% and some with much higher increases.

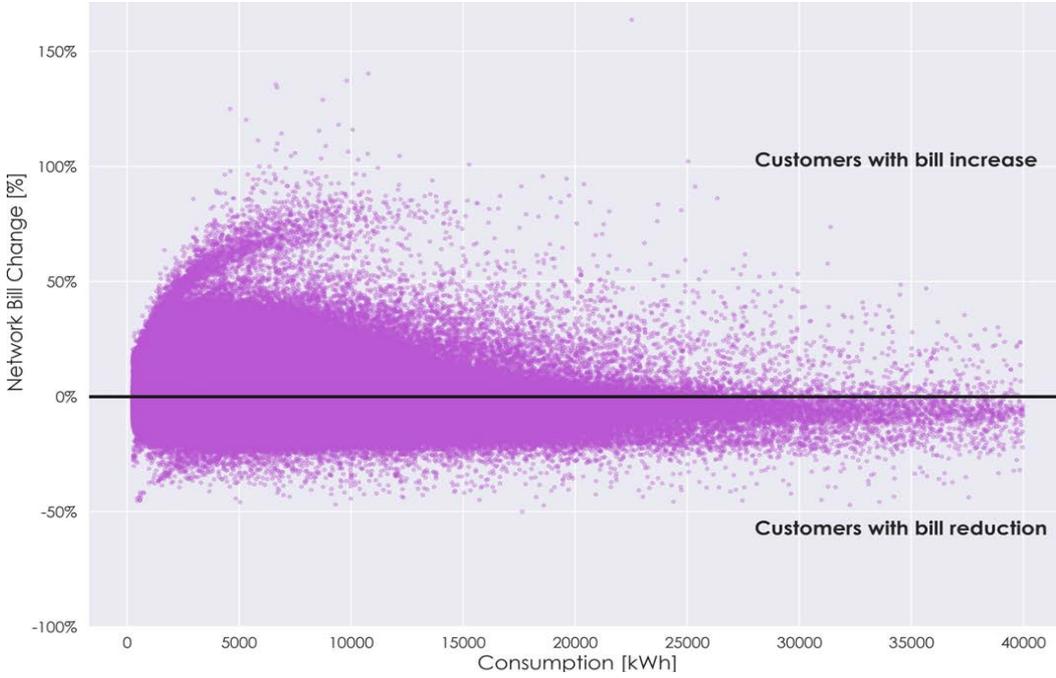
¹⁸ There was discussion on the merits of not allowing customers to opt-out at all, with varying views presented. Participants generally did not support glide path transitions due to the complexity this creates for communicating change to customers.

¹⁹ Includes all customers other than those registered as life support customers or those with medical cooling concessions.

²⁰ We used 2018 consumption profiles with 2019 single-rate tariffs. No behaviour change is assumed. We excluded customers consuming under 250kWh per year as they are likely to have been vacant and those over 40MWh per year as they are more likely to be incorrectly assigned to residential tariffs.

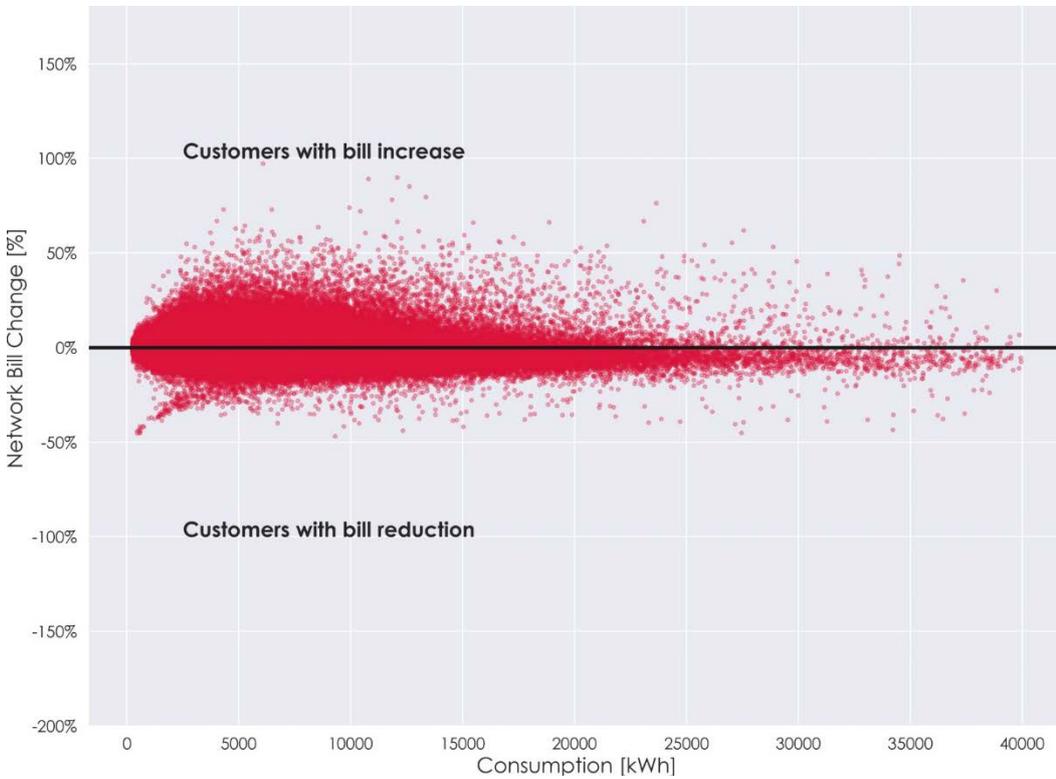
²¹ This is to ensure revenue neutrality, which is essential to assess customer impacts under the revenue cap form of price control that the Victorian distributors are currently regulated under.

Figure 20 Victorian bill impacts of a move of all customers to our new ToU tariff



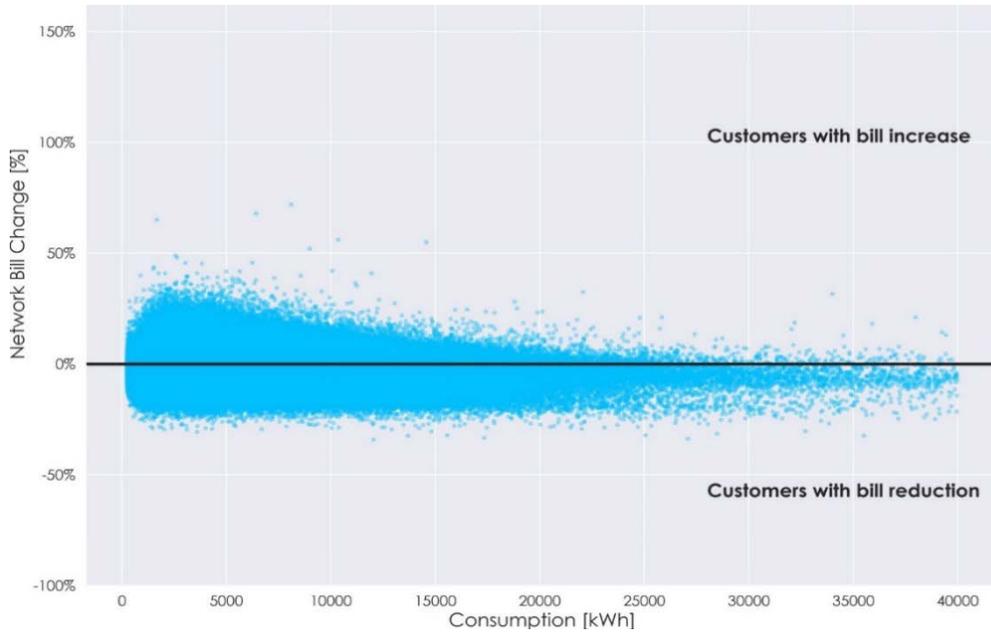
Source: Victorian distributors

Figure 21 Powercor bill impacts of a move of all customers to our new ToU tariff



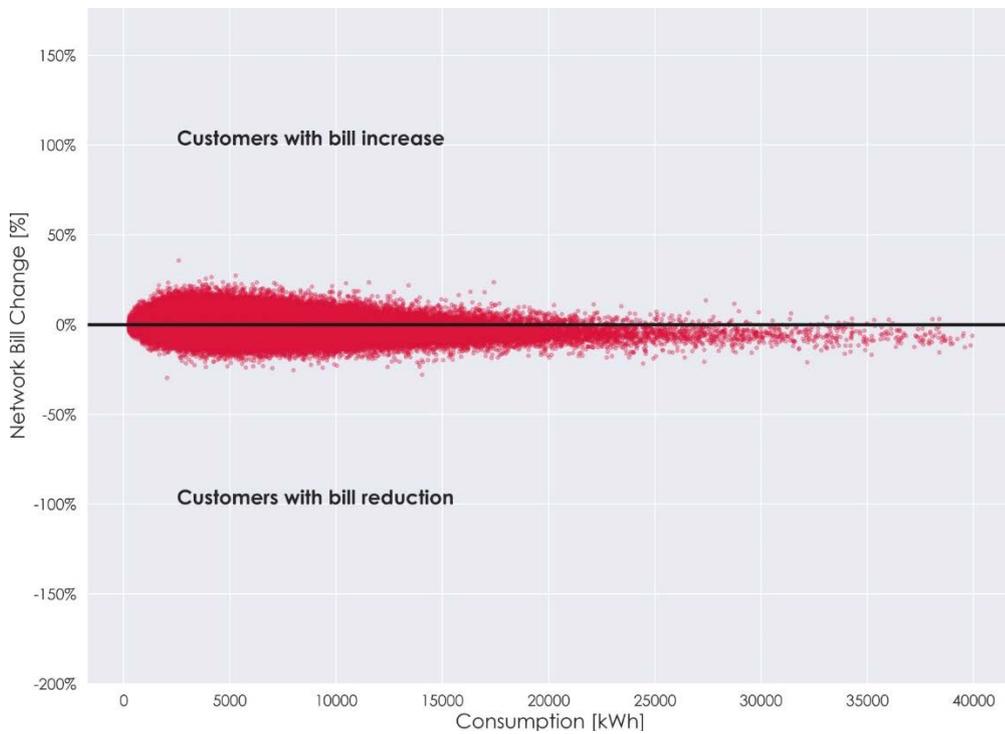
Source: Powercor

Figure 22 Victorian bill impacts of a move of all single-rate customers to our new ToU tariff (%)



Source: Victorian distributors

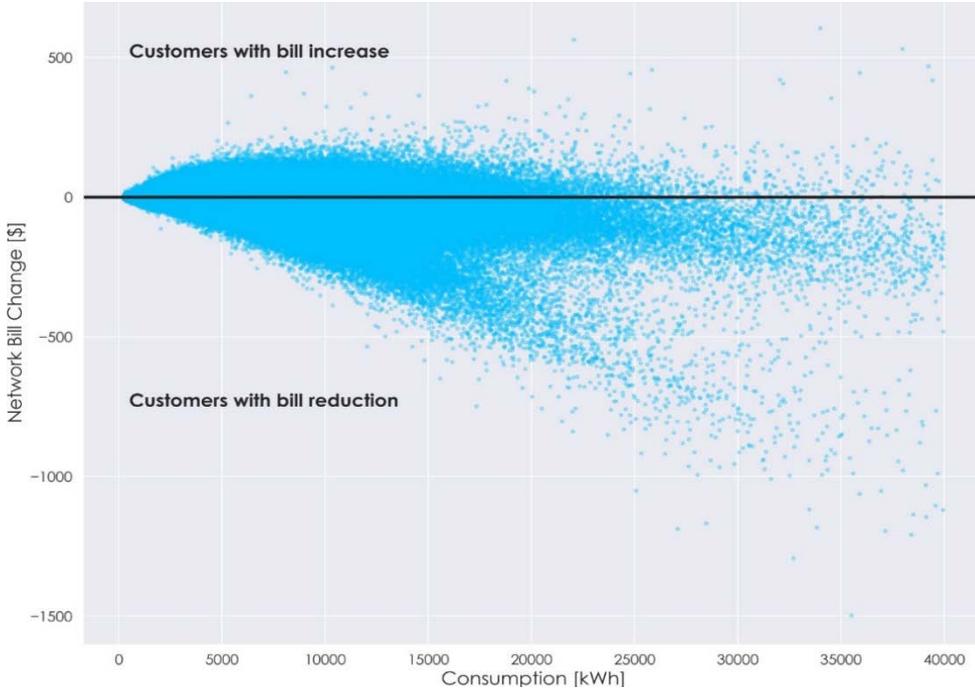
Figure 23 Powercor bill impacts of a move of all single-rate customers to our new ToU tariff (%)



Source: Powercor

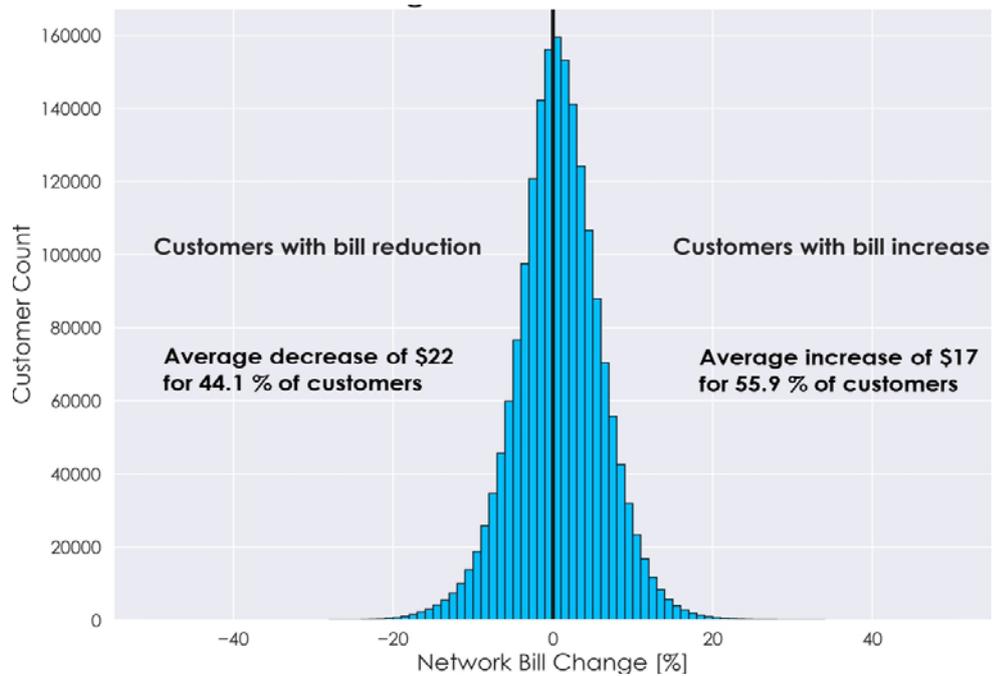
Figure 24 shows the same scenario, but the dollar impacts and Figure 25 shows the count of customers that fall within a range of percentages. The result is that 44% of customers would be better off and 56% of customers would be worse off. Of those better off, they would on average be \$22 better off and of those with bill increases they would on average see a \$17 bill increase. While there are fewer extreme impacts than if we moved all household customers, there remain a number of customers with bill increases of more than 25%. Around 3% of customers would have a bill increase of \$50 or more if they did not change their behaviour.

Figure 24 Victorian bill impacts of a move of all single-rate customers to our new ToU tariff (\$)



Source: Victorian distributors

Figure 25 Victorian bill impacts of a move of all single-rate customers to our new ToU tariff (#)



Source: Victorian distributors

4.5.4 Applying what we heard from customers and stakeholders to our proposal

Following the presentation of customer impact analysis at our third forum, some participants noted that there were likely to be vulnerable customers with bill increases not captured by the proposed carve-outs for life support and medical cooling concessions. For example, while we would capture those on life support and with a medical cooling concession, this only amounts to around 1.5% of households. This meant some customers on retailer payment assistant schemes or claiming the mains electricity concession, who we can't identify, could still be negatively impacted by being moved to the new ToU tariff structure. These participants were concerned that vulnerable customers could be made worse off and may have little understanding of why or how to respond. It was therefore difficult for them to support the transition without understanding the impact on these other vulnerable customer groups.

Following the forum, we sought further views on transition and heard that to support change, some stakeholders would need to understand what complementary measures (such as retailer communications, literacy programs, technology rebates, energy efficiency programs and peak time rebates) would be provided to vulnerable customers, both before and after the change occurs. They indicated that without such measures—acknowledging some of which are outside the control of the distribution businesses—they would find it easier to support transition options that only applied the new ToU pricing structure to new connections, solar, EV and residential customers with large usage profiles. Additionally, even with complementary measures, there was also concern that that they prove ineffective in reaching those households who do not, or cannot, engage in the energy market.

We therefore amended our transition position from the strawman presented at forum three to better target non-vulnerable household cohorts. Based on the feedback we received, we consider that the following customer groups are materially less likely to include vulnerable customers:

- new connections—the Victorian residential customer base grows by about 2.4% per annum (around 52,000 new homes each year)
 - this only includes new homes connecting to the network for the first time, and does not include re-energisations following a de-energisation (e.g. move-in customers, or after a disconnection for debt)
- customers who, from 1 July 2021, choose to upgrade from single-phase to three-phase supply²²
- customers who, from 1 July 2021, choose to install solar or batteries²³
- EV owners.

By the nature of their new requirements, these customers would also have an interaction with their retailer, which provides them an opportunity to discuss and understand the tariff options available to them. We have therefore included the first three as the triggers for reassignment as described in table 7, section 4.5.1 and within our TSSs. From the point of a register becoming available, we would also seek to assign customers who

²² Large electric motors can need three-phase power and require customers to upgrade their electricity supply. This can occur when customers are installing large air-conditioning systems, kilns, significant power tools (sometimes used in workshops or for home renovations), under floor heating, large pool pumps or a solar panel array above 10kVA. The Victorian networks provide around 3,000 supply upgrades per annum.

²³ Under its moderate scenario, CSIRO estimate that rooftop solar capacity will increase by about 50 per cent by 2030. CSIRO, *Projections for small-scale embedded technologies*, June 2018, pp35-36. A customer (or their solar installer) installing solar for the first time, or upgrading their solar system is required to inform their distribution network.

purchase EVs to the new ToU tariff structure. We have also retained the option for customers to choose a single-rate or demand tariff, which was widely supported at our third forum.

While this assignment would result in a slower transition, we consider that it still provides much needed progress with the least risk of losing stakeholder and customers support, which is critical to make any progress at all. While benefits might take longer to materialise, we also consider those benefits are more likely to occur in the medium to longer term given the modest impact on customers in the 2021-26 regulatory period (see table 2). It is essential that we can enter that medium to long term with some momentum and support for change.

In the 2021-26 period we will instead focus on improving the complimentary measures (including communications, literacy programs and energy efficiency programs, the use of technology and peak time rebates). This will allow us to put in place effective mitigation strategies for those customers that may experience bill shock from a move from a single-rate to ToU tariff in future.

4.5.5 Our opt-out arrangements for households

Stakeholders have told us that it is important for customers to have the choice to opt-out, particularly those that may have difficulty shifting their load.

We have thought carefully about this. Customers that are more likely to opt-out from the new ToU tariff structure expect (or will have experienced) a material increase in their bill as a result of the change. These customers are consuming relatively more electricity during the peak period relative to the off-peak period. From one perspective, this is exactly the consumption that ToU pricing is targeting. ToU pricing is providing these customers with a better signal of the cost impacts of consuming load during the peak period compared to the off-peak period.

However, taking into account stakeholder and customer feedback, we need to be particularly mindful of the impacts on customers who may not have a choice about when to consume electricity for reasons beyond their control. Indeed, some customers may be incentivised to shift load or reduce electricity consumption that, for health reasons, should ideally not be moved.

As a result, we have provided the option for households or their retailer to opt-out from the new ToU tariff structure until 30 June 2026.²⁴

4.6 How customers can save

A consistent message we have heard during our engagement is that customers want to know how they can reduce their electricity bills. Under a single-rate tariff structure, the only way to reduce an electricity bill is to use less energy in aggregate. Customers are not rewarded for shifting energy to off peak periods.

As indicated by figure 25, 44.1% of household customers would realise an average saving of \$22 per year under the new ToU structure with no change to existing householders' consumption behaviour.

Household customers will be able to reduce their electricity bills more if they move the time that they use appliances to non-peak periods. For example:

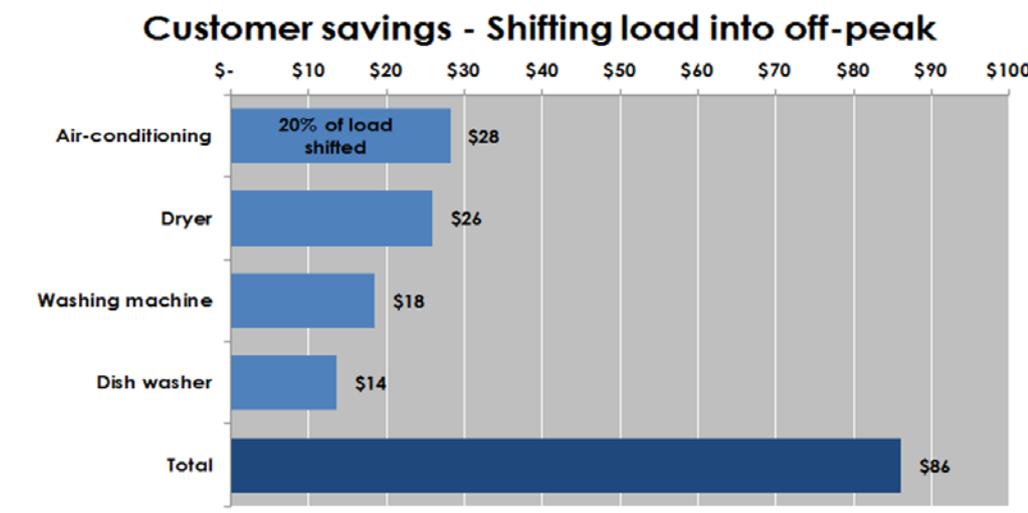
- putting washers, driers and dishwashers on a delayed cycle outside of the 3 pm to 9 pm peak
- changing the scheduled time for pool pumps

²⁴ Excluding Ausnet Services' household solar PV customers.

- setting EVs and batteries to charge later at night
- pre-cooling the house on warm days to take advantage of the cheaper off-peak rates.

In our engagement sessions, our stakeholders asked us to provide an indication of how much a customer can save by changing the times they use electricity. Figure 26 shows an example of how much a typical customer can save in their annual network charges by switching the time they turn on appliances such as dryers and washing machines. This shows how ToU empowers customers to meaningfully save on their electricity bill by using everyday appliances in non-peak times.

Figure 26 Savings in network bill from using electricity in non-congestion periods



Based on typical consumption – sourced from <http://www.energyrating.gov.au>

Total air-conditioning load 1,745 kWh (Powercor Climate Saver customer average)

Source: Powercor

4.7 Our network-specific changes to existing residential customer tariffs

Consistent with and in addition to the joint Victorian position above, we propose the following improvements for residential customers:

- We propose to reassign all flexible tariff customers to the new ToU tariff on 1 July 2022. We propose this reassignment for the same reasons that we selected a two-rate rather than a three-rate ToU tariff. Additionally, the current shoulder period in the three-part tariff is not suited to the introduction of a third low-priced solar sponge period, should this become desirable in the future.
- We propose to combine customers on legacy ToU tariffs onto a single legacy ToU tariff on 1 July 2022, with the peak period being 7am to 11pm weekdays, and all other times being off-peak.
- We propose to merge our Docklands and non-Docklands on 1 July 2022 to simplify our tariffs. We propose to continue to move those tariffs that we are planning to merge closer together in order to minimise impact on customer bill.

4.8 Assessment against our pricing objectives and the principles in the Rules

Table 8 summarises why we consider the new two-rate ToU tariff for residential customers best meets the objectives established by stakeholders.

Table 8: Assessment of ToU tariff structure against objectives designed by key stakeholders

Objective	How a ToU tariff structure is consistent with this objective
Simplicity	A two rate ToU tariff structure with peaks occurring every day is simple to communicate and is easy for customers to understand. It provides a clear message that consumption between certain times is more costly than consumption during other periods.
Economic efficiency	Prices are more reflective of network costs than the status quo, reflecting a move towards more cost-reflective pricing. By applying our new ToU tariff structure to new connections and new installations of solar/distributed generation, and potentially batteries and EVs, we would ensure that any existing cross subsidies are not exacerbated going forward.
Equity	Compared to the status quo, customers using the network relatively more at peak times will pay more than customers using the network during off-peak periods, moving towards paying a fair share of network costs.
Affordability	Opt-in and opt-out arrangements will support more retail tariff choice so that customers can choose the tariff structure that is most affordable for their circumstances. By allocating network costs to those who incur them, consumers could change their consumption patterns, network investment could be avoided and costs reduced. Over time, this should lead to lower network costs for all consumers.
Adaptability	<p>Introducing a ToU tariff structure as the default tariff structure provides a solid foundation for any potential new tariff structures that may be introduced after 2026. It is uncertain what the network will look like by 2026, and even more uncertain beyond this date. Against this uncertainty, it is unclear what tariff structure will be preferable in the future. The two-rate ToU pricing with fixed pricing periods could evolve into one, or a combination, of the following:</p> <ul style="list-style-type: none"> • a demand tariff structure with a similar peak window • a ToU tariff structure with an additional critical peak price (or rebate) window nominated by the distributor on a few occasions a year • a dynamic ToU tariff structure • a locational ToU (or demand) tariff structure or rebate where the peak/rebate ratio varies depending on the cost/benefit to the network at certain location. <p>Monitoring developments and considering the effectiveness of network pricing with greater cost reflectivity (e.g. demand-based prices) will be a key focus for 2021-26.</p>

Source: Victorian distributors

Table 9 provides an assessment against the pricing principles in the Rules.

Table 9: Assessment of ToU tariff structure against principles designed by key stakeholders

Principle	How a ToU tariff structure is consistent with this principle
Tariff class revenue must lie between stand alone and avoidable cost (6.18.5(e))	We demonstrate this in our TSS.
Tariff based on long run marginal cost and the method for calculating this cost (6.18.5(f))	We explain this in our TSS.
Recovering efficient costs (6.18.5(g))	<p>Our TSS describes how we meet the stand alone and avoidable cost tests. This demonstrates how the revenue for each tariff reflects the total efficient costs of serving the customers in that tariff (Rule 6.18.5(g)(1)).</p> <p>We set our tariff levels to ensure we recover our allowed revenue in each year. This relies on our demand forecasts as we need to know demand and prices to obtain our allowed revenue. We demonstrate we only recover our efficient costs in our annual pricing proposals. These must demonstrate our total forecast revenue for each year is equal to our allowed revenue (plus any allowed adjustments).</p>
Customer impact principle relating to transition, choice and ability to mitigate impact (6.18.5(h)), and understandability of the tariff structure (6.18.5(i))	<p>The customer impact principle has driven much of the work and outcomes described in this chapter.</p> <p>In particular, the simple new default ToU tariff design and assignment approach (including ability to choose tariffs other than the default) are a result of the significant customer and stakeholder engagement we have undertaken and is targeted at ensuring we make progress on reform in a way that is acceptable to stakeholders.</p>
Jurisdictional principle (6.18.5(j))	Legislation made by the Victorian Government—by way of an ‘order in council’—sets out certain requirements for network tariffs that expire on 31 December 2020. Our TSS has been developed on the basis that this will expire. We understand that the Victorian Government will be reviewing the order in council during 2020 and we will update our TSS to comply with those requirements as part of our revised proposal.

4.8.1 Consideration of other tariff structures

In our September 2018 consultation, we sought stakeholder views of four different pricing options, including single-rate, ToU, peak usage subscription,²⁵ and demand. We also sought views on peak time rebates.²⁶

In addition, we outline in our assessment of adaptability some of the other costs reflective tariff structures we could consider (for example, a critical peak tariff). These are more complex for customers to understand. For the success of tariff reform, it is critical that cost-reflective tariffs are capable of garnering and retaining customer support. We have heard customer and stakeholder preference for simple tariffs, which indicates there would be

²⁵ This option applies a fixed charge for each customer based on pre-defined peak period usage band.

²⁶ Peak time rebates involve paying customers in a particular local area a rebate for using less electricity than they were intending to at the time we called an electricity network peak event.

an advantage in further embedding ToU tariffs to increase understanding and acceptance before contemplating more complex structures.

We continue to offer our monthly maximum demand tariffs, which were the preference of some of our stakeholders. However, this preference was not unanimous for a number of reasons including:

- the higher level of complexity
- wariness of tariffs where single consumption decisions can adversely impact customer bills, and especially how this might impact vulnerable customers.
- we consider that there is more work for us and the industry as a whole to develop understandable and acceptable tariffs that are more cost-reflective. This remains the case even if such tariffs were to be targeted to retailers rather than customers.
- our current view is that a transition to even more cost-reflective tariffs (than ToU) should only be contemplated after a period of bedding down ToU tariffs. Future developments may include making the monthly maximum demand tariff the default tariff for new connections and other reassignments.

4.8.2 Consideration of locational tariffs

Locational tariffs may potentially improve cost-reflectivity by enabling sharper signals to be provided in areas where capacity is scarce. At this stage, however, we are not considering the introduction of locational network tariffs. We recognise in the current environment that the added complexity this would introduce is undesirable for customers and may risk undermining current levels of support for reform.

However, locational signals do occur via:

- different prices for each Victorian network that reflect our individual costs to provide network services
- how we can seek localised demand management solutions.

4.9 Trials

4.9.1 Newstead trial

Powercor is currently trialling an opt-in residential network tariff in the Newstead postcode which has about 650 residential connections. The opt-in Newstead residential trial tariff was introduced on 1 July 2018. Due to its location within an unconstrained area of the network, the tariff has a high fixed charge to encourage greater utilisation of the network.

When the trial tariff was introduced, it was proposed that the trial tariff remains until 31 December 2020 with a review proposed based on tariff uptake. If more than half of residential customers have opted in to the Newstead residential trial tariff by September 2020, Powercor would keep the tariff open until at least 30 June 2023. Currently four customers have opted into the trial tariff.

During the course of next year, Powercor plans to discuss the trial with Newstead community leaders with the aim of closing the trial.

4.9.2 Electric vehicle charging trial

We expect that a network tariff trial will be conducted involving electric vehicle charging although no trial is yet designed. Such a trial may involve testing a different network tariff structure for homes that have electric vehicle charging installed or testing an electric vehicle dedicated circuit network tariff.

5 Small business

The purpose of this chapter is to explain:

- who are our small business customers and our existing network tariffs
- our customer and stakeholder engagement
- our proposed changes for small business network tariff structures and assignment policy, as set out in our TSS
- why we consider our proposed changes best meets the needs of our customers and stakeholders, taking account of our consultation process, our pricing objectives and the Rules requirements.

For small business customers consuming greater than 40MWh per year, the Victorian electricity distributors have different tariffs. For small business customers consuming less than 40MWh per year, we have taken a common Victorian approach. This is because:

- a key stakeholder view is to drive simplicity by increasing the level of State-wide tariff commonality
- the Victorian definition of a 'small customer' includes both all residential customers and those businesses who consume under 40MWh per year
- our collaborative engagement also covered business customers consuming under 40MWh per annum.

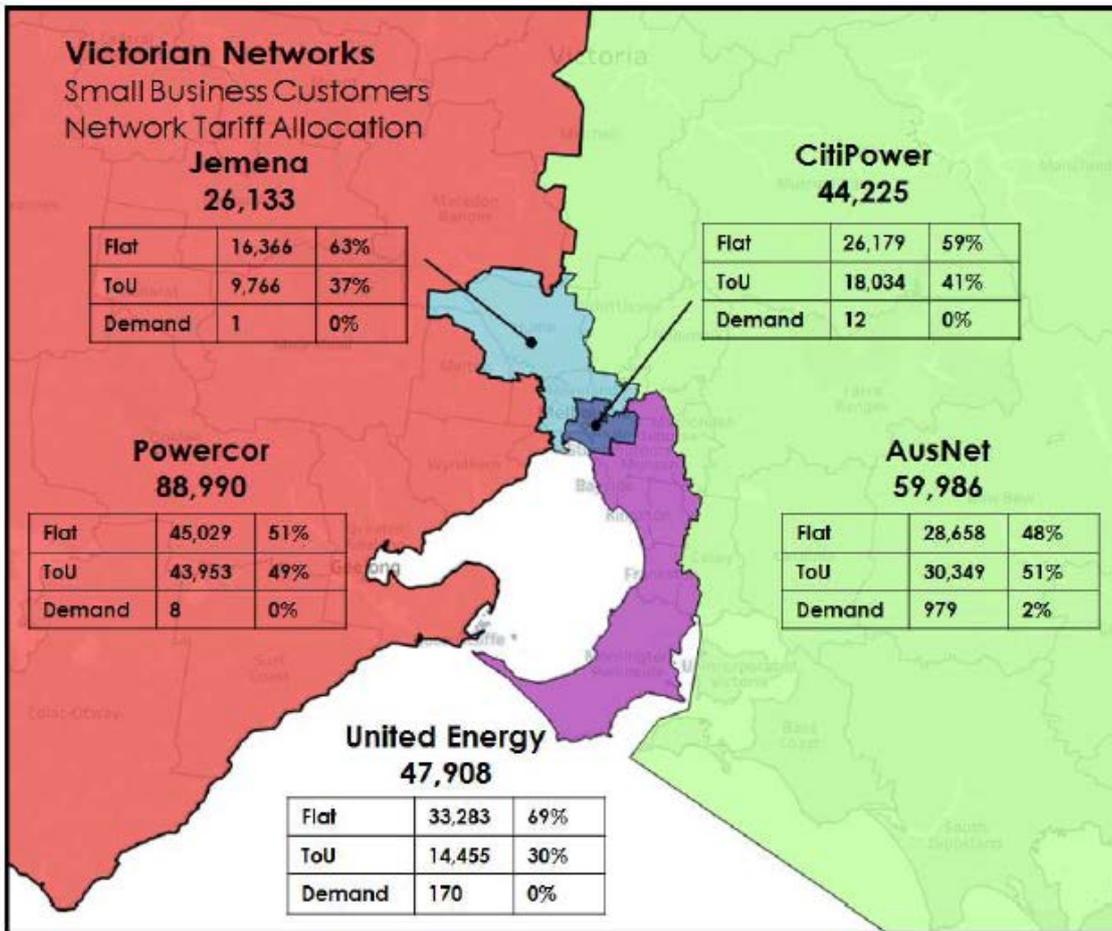
As each distributor's approach differs, we have separated out the proposed changes and reasons for:

- the common Victorian approach for customers consuming under 40MWh per year
- our approach for customers consuming over 40MWh per year.

5.1 Our small business customers

We have a diverse range of businesses on our network, including retail, real estate, construction, health, professional services and transport. Figure 27 shows the number of small businesses in each Victorian network on single rate, ToU and demand pricing structures.

Figure 27 Number of Victorian small business customers on various network tariff structures



Source: Victorian distributors

There are three main types of small business network pricing structures in Victoria, which are the same as for households as seen in figure 27.

Almost all small business customers are either on single rate or ToU tariffs. There are 31 different small business ToU tariffs across Victoria, which can make tariffs more time consuming and complicated than they need to be for customers, although most have a peak pricing period of 7 am to 11 pm weekdays.

To what extent can small businesses change when they use electricity?

We recognise that energy bills are a large operating cost component for many small businesses in Victoria. We also acknowledge that while some small businesses may have the ability to shift their consumption, others will have limited flexibility (for example, shops open during business hours or restaurants that open during meal times). When considering what network tariff and tariff structure to apply to small business, we need to take

into account and balance a number of different objectives. Of particular relevance, we need to consider the extent small businesses can mitigate their bill impact of a change in tariff through their usage decisions.²⁷

Of particular relevance is the extent to which small businesses can change their electricity usage in response to a new tariff structure.²⁸ We need to be mindful of the impacts on small businesses who may have limited choice about when to consume electricity in order to carry out their business and serve their customers. If we consider these customers' ability to respond to price incentives, it's hard to envisage some small businesses being able to materially respond to reduce their bill impact.

There may be other small businesses with greater ability to move their electricity use—for example pre-heating or cooling. However, this will depend on:

- the length of the peak period
- whether the peak period applies only on certain days, months or year round.

The longer the peak period and the greater extent of the year it applies, the harder it becomes for a small business to effectively shift usage to off-peak times. Given the above issues, the starting point for our proposed changes to tariffs was to listen to the concerns and feedback of small businesses.

5.2 Our small business customer and stakeholder engagement

Our small business engagement mirrors that our engagement activities for our household customers. Our first two pricing forums and September 2018 consultation paper covered our approach to small businesses under 40MWh. What we heard is therefore predominantly captured in section 4.2.

In addition, we published a small business options paper for consultation over October 2019, where we set out what we had heard to date and our preferred approach. We did not receive formal submissions to this paper but consider that our preferred approach, which is consistent with our proposed approach in section 5.3, represents the views we have heard to that point in other engagements.

This includes a number of one-on-one and small group meetings undertaken through our Energised 2021-2026 program as part of our individual engagement with stakeholders (as summarised in section 4.2.6 above).

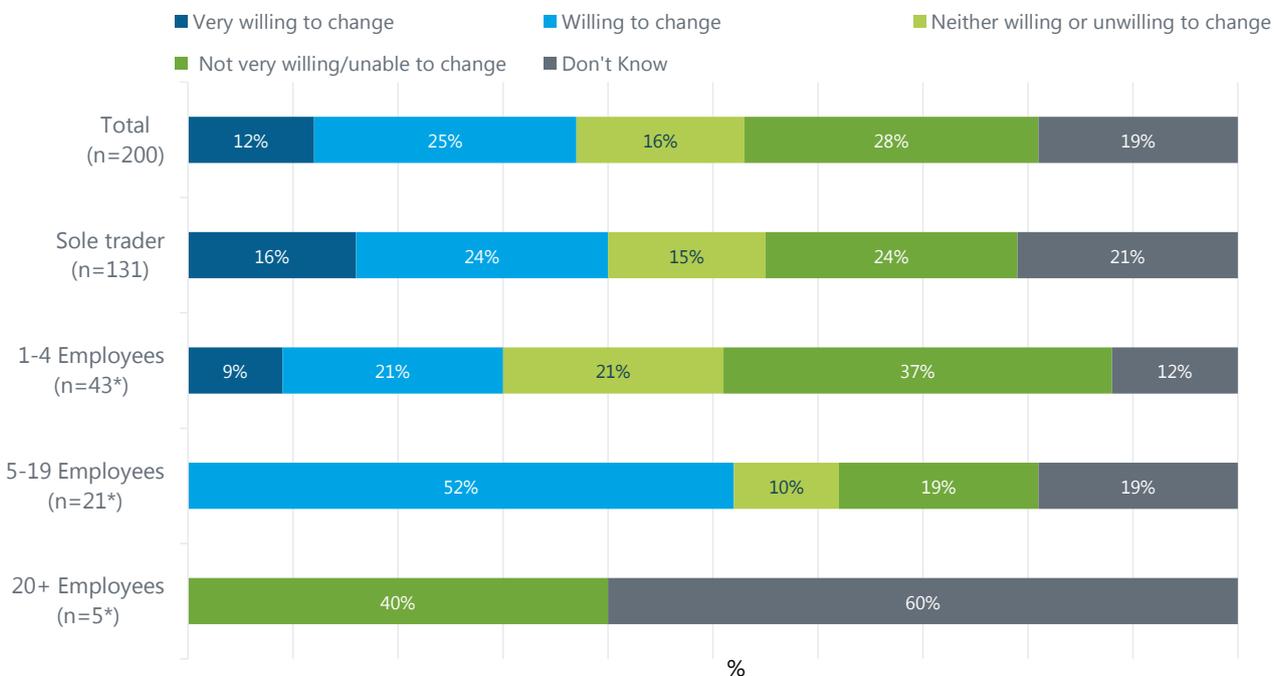
Like our residential customers, our small business customers supported different tariff options that are simple and easy to understand. In addition, more than half (55%) of our small business customers felt they would be best off under a ToU tariff, while 38% saw a flat rate as suitable.

However, only 37% of small business respondents said they are willing to change their electricity usage times 47% indicating they are not very willing or unable to change.

²⁷ National Electricity Rules, Rule 6.18.5(h).

²⁸ National Electricity Rules, Rule 6.18.5(h).

Figure 28 Small business customer segments' willingness to change electricity usage timing



Source: Powercor

5.3 Proposed changes for customers consuming under 40MWh per year

In the 2021-26 period, in response to stakeholder feedback for simple and uniform pricing across Victoria, for small business customers consuming under 40MWh per year, we propose to:

- change the default tariff from the current single-rate tariff to a two-rate ToU tariff with a peak period of 9 am-9 pm local time on workdays
- move all legacy ToU tariff customers (consuming under 40MWh per year) onto the new default ToU tariff on 1 July 2021
- remove all legacy ToU tariffs (for customers consuming under 40MWh per year) from our tariff schedule.

Table 10 summarises our proposed tariff assignment and reassignment, including those customers who would trigger reassignment to the default ToU tariff.

Table 10 Small business consuming under 40MWh per annum assignment and tariff options from 1 July 2021

Proposed tariffs	Proposed assignment	Tariff options (upon request from retailer)
Default ToU	New connections Supply upgrades to three-phase Businesses installing solar or battery Existing legacy ToU customers	Single-rate ²⁹ or demand
Single-rate	All existing customers remain	Default ToU or demand
Demand	All existing customers remain	Single-rate or default ToU
Dedicated circuit	All existing customers remain	Any new eligible load

Source: Victorian distributors

5.4 How the default tariff structure meets our pricing objectives

Given stakeholder preference to having consistent and simple pricing structures across Victoria, the key areas we considered to develop our small business tariffs were:

- two-rate or three-rate tariffs?
- what hours to set the peak window?
- should the peak apply to weekends?
- should the peak apply year round?

5.4.1 Two-rate or three-rate?

We propose a single two-rate tariff (peak and off-peak) for the same reasons provided for household customers (see section 4.4.1).

5.4.2 What hours to set the peak window?

We have proposed that the peak period for small businesses consuming under 40MWh per year should occur between 9 am to 9 pm workdays local time. We have proposed to make this tariff in local time rather than AEST (which is common for many of our legacy ToU tariffs) to make tariff calculation simpler for customers.

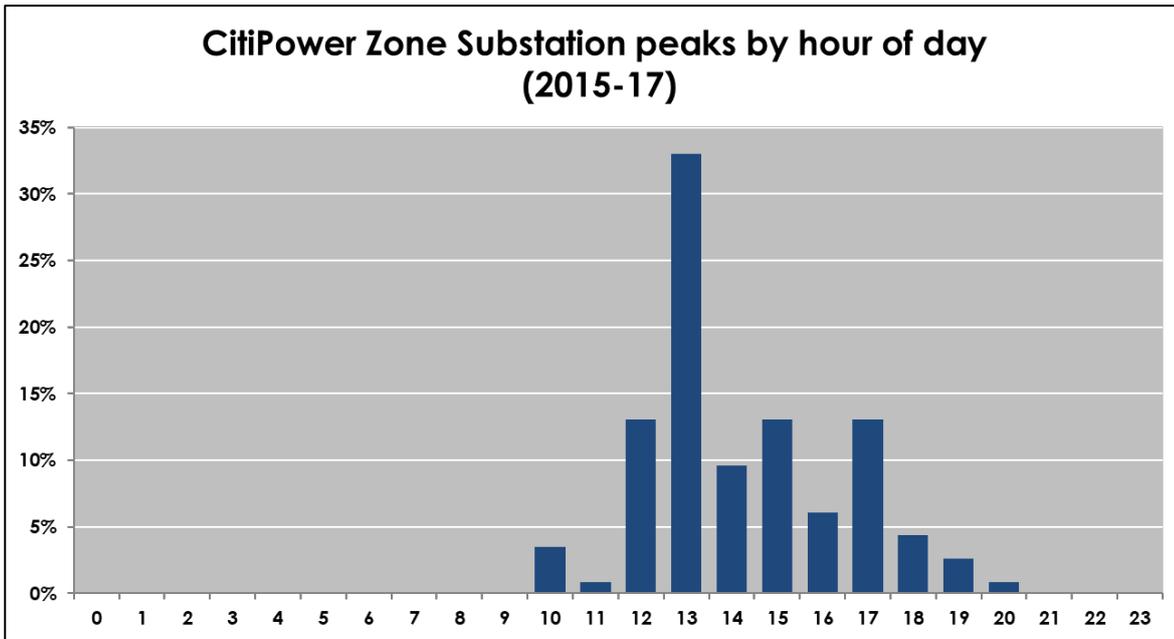
We have considered how small business peak may contribute to overall peak demand on the network as well as what the small business peak itself is (to ensure we do not create localised peak issues on certain distribution substations).

Because we are seeking to have a consistent pricing structure across the Victorian distributors, we first considered how the networks are used across Victoria. Figure 4 shows when our (approximately) 230 zone substations are under most stress. Most zone substations are peaking between 2 pm and 8 pm (local time). There are also “tails” to this period, with a number of substations peaking between 11 am and 9 pm local time.

²⁹ Solar customers with AusNet Services can only opt out to ToU or demand pricing structures.

While there appear to be few peaks between 10 am to 2 pm across all networks, this is not the case for CitiPower who cover the Melbourne CBD (see figure 29). We have taken this into account when creating a single peak period for Victorian small business customers.

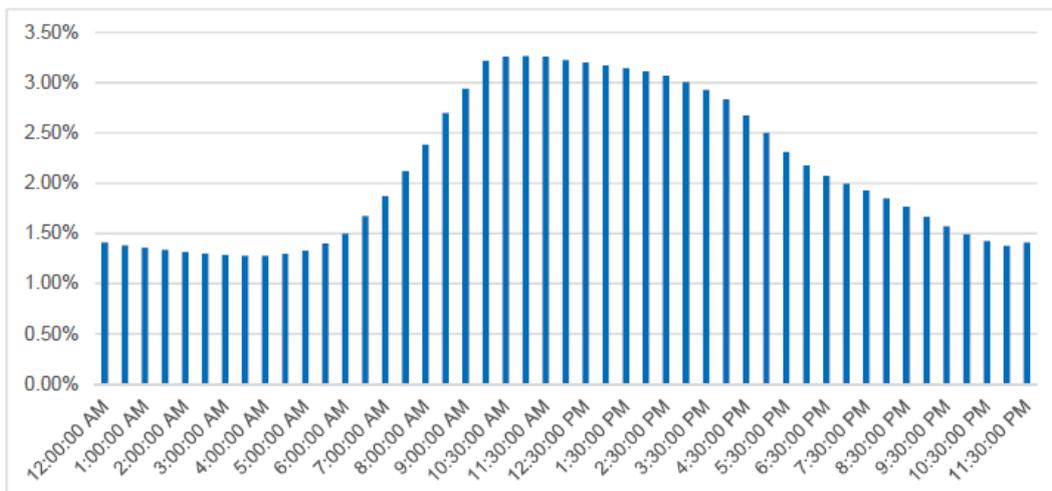
Figure 29 CitiPower zone substation peaks by hour of day (2015-17)



Source: CitiPower

Figure 30 shows small businesses weekday consumption profile, with consumption rising rapidly between 5 am and 9 am, peaking between 10 am and 12 pm and then declining, with accelerated declines from around 4 pm into the evening as businesses shut down. This indicates that the current 7 am to 11 pm peak pricing window is too wide, and that narrowing it is likely to be more reflective of how small businesses impact our network.

Figure 30 Small business weekday load by time of day, AEST, 2017-18



Source: Victorian distributors

In particular, we can see that small business peaks (around 10 am to 12 pm) are earlier than coincident peak (around 2 pm to 8 pm). We need to consider both:

- the benefit of providing incentives that reduce the coincident peak
- including the small business peak to ensure we do not provide localised peak issues on certain substations.

The peak period chosen can have a large influence on the resulting customer impacts. We therefore tested the impacts of a peak period of 10 am to 6 pm, and another of 9 am to 9 pm. Importantly, both seek to narrow the existing predominant peak period of 7am to 11pm. This analysis is shown as part of our transition options shown in section 5.5.

Given the analysis above and in section 5.5, we consider that:

- absent customer impacts, a 10 am to 6 pm timeframe would provide a best-fit for small business peak period Victoria-wide
- taking into account customer impacts, a 9 am to 9 pm peak period is appropriate given a significant amount of small business customers have limited ability to adjust their consumption behaviour due to the need to use energy at certain times that support the services they provide to their customers.

While still relatively wide, a peak pricing period of 9 am to 9 pm (local time) is:

- more cost-reflective than the existing 7 am-11 pm (AEST) used for the majority of our legacy ToU tariffs
- simpler for customers to understand for this to be in local time.

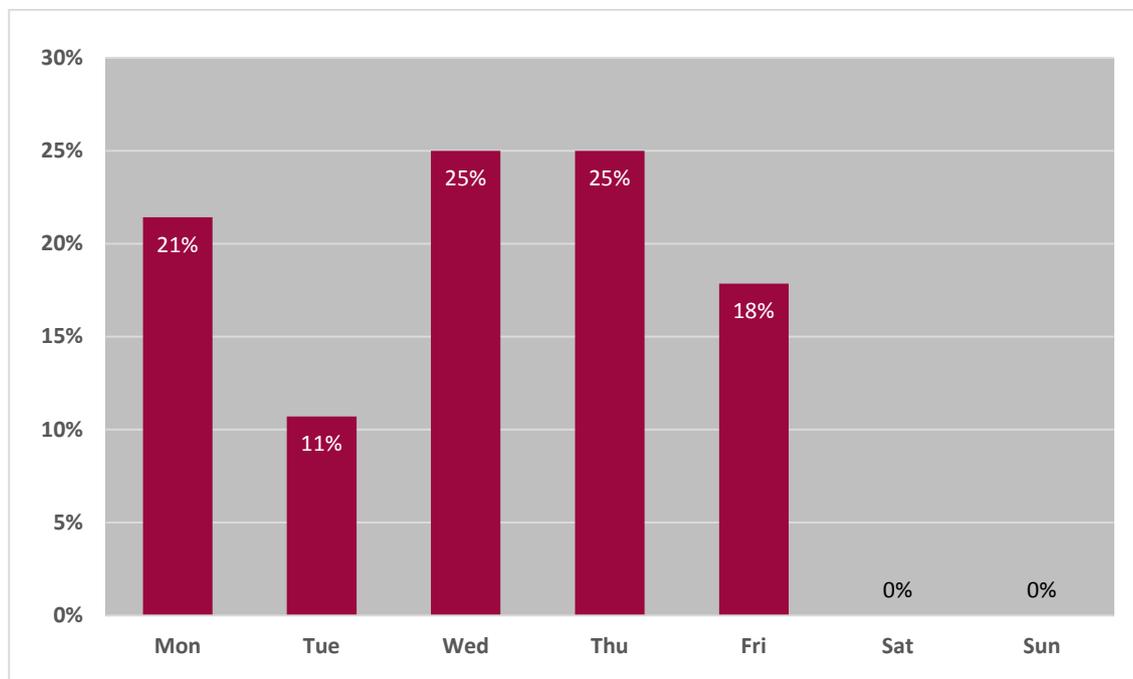
Further, from the analysis in section 5.5, we can see that starting the peak period later and ending it earlier exacerbates customer impacts. We are also aware that ending the peak period at 6 pm may have resulted in a shift in load to commence at 6 pm, which may exacerbate wider network peaks.

5.4.3 Should the peak apply to weekends?

We have looked at when small business peak loads occur across Victoria, and whether there is any clear pattern to justify including or excluding weekends (104 days of the year).

Small business peaks have not occurred on weekends (see figure 31). This is primarily due to small business operating hours falling on weekdays. We have therefore done proposed to apply the ToU pricing structure on weekends.

Figure 31 Victorian small business peaks 2018 – top 200 half hours (occurring on 28 days)



Source: Victorian distributors

5.4.4 Should the peak apply year round?

We propose to apply the pricing structure throughout the year. This is for the same reasons as provided for households in section 4.4.4.

5.5 Assignment policy and transition (customers under 40MWh)

This section outlines:

- our proposed assignment policy
- our reasons for proposing this assignment policy by reference to our pricing objectives, including:
 - the transition options we considered and associate customer impact analysis
 - applying what we heard from customers and stakeholders
 - why are we retaining opt-out for small business customers under 40MWh per year.

5.5.1 Assignment policy

Table 11 summarises our proposed assignment and tariff options for small business customers consuming under 40MWh per year. That is, from 1 July 2021, new connections, upgrades to three phase metering and new solar or battery installations will be assigned to the new default tariff structure.

Importantly:

- new small business customer connections (under 40MWh per year) and three-phase upgrade customers (under 40MWh per year) that are assigned to the default ToU tariff structure may request to be transferred to the single-rate tariff structure or demand tariff

- ourselves, along with Jemena, CitiPower and United Energy, currently allow solar customers on single rate, ToU or demand tariff structures. We will retain this current practice to support customer choice
- AusNet Services will retain their current practice of only allowing solar customers to opt out to a demand tariff structure only—this approach supports maintaining appropriate incentives for these customers.

Our full assignment policies are detailed within our individual TSSs.

5.5.2 The transition options we considered

We assessed three transition and tariff combination options for small businesses consuming under 40MWh per annum. These are summarised in table 11.

Table 11 Description of options

Feature	Option 1. A two-rate ToU tariff for all customers	Option 2. A two-rate tariff with a wider peak period reduces customer impact	Option 3. Replace existing ToU tariffs for one simple and more cost reflective two-rate ToU tariff (PROPOSED)
Peak period	10 am – 6 pm on weekdays (year round).	9 am – 9 pm on weekdays (year round).	9 am – 9 pm on weekdays (year round).
Transition	Assign all new customer connections and reassign all single rate customers to new ToU tariff on 1 July 2021. Close legacy ToU tariff to new entrants but do not reassign customers currently on them.	Assign all new customer connections and reassign all single rate and legacy ToU customers on 1 July 2021. Remove legacy ToU tariffs.	Assign all new customer connections, new solar installations and those requesting upgrade to 3 phase metering to the new ToU tariff. Reassign all legacy ToU customers to the new ToU tariff on 1 July 2021. Remove legacy ToU tariffs.
Choice	Retailers can opt a small business customer (who consumes under 40MWh per annum) out of the ToU network tariff to a single rate or demand network tariff. ³⁰ Customers on existing legacy ToU can opt into the new ToU network tariff.	Retailers can opt a small business customer (who consumes under 40MWh per annum) out of the ToU network tariff to a single rate or demand network tariff.	Retailers can request to have a small business (who consumes under 40MWh per annum) customer assigned to a single rate, ToU or demand network tariff. Customers on existing single rate tariffs can opt into the new ToU network tariff.

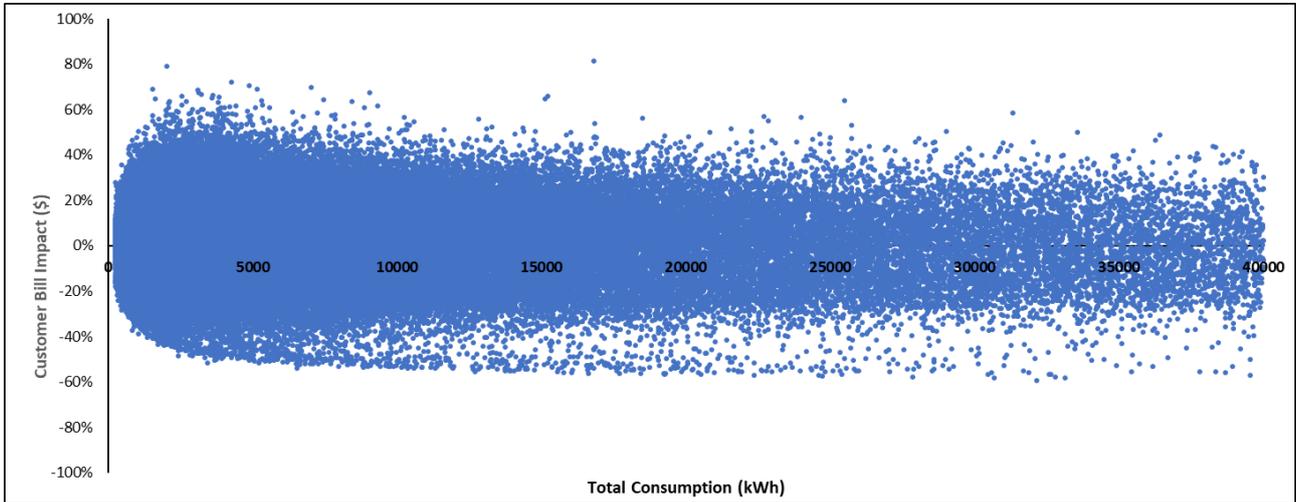
Source: Victorian distributors

Figures 32 and 34 respectively show the Victoria-wide impact of option 1 to option 3. Each dot on the scatterplot is one of our small business customers.

Table 12 provides summary results. We replicate these for our own network in figures 35 to 37 with the summary in table 13. This demonstrates that the impacts and conclusions drawn at a Victoria-wide level also apply to our network.

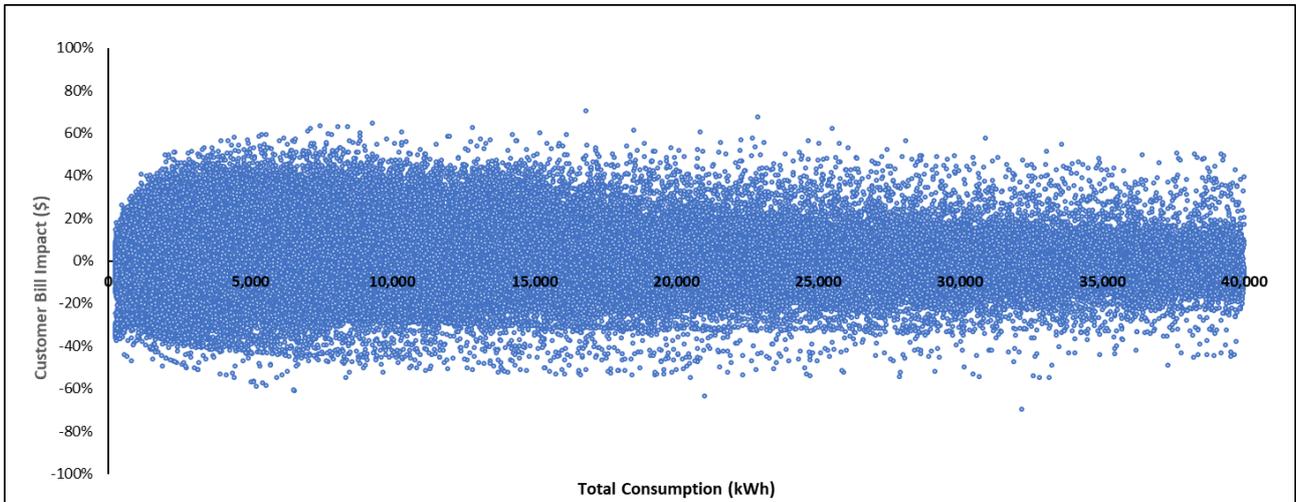
³⁰ We would generally expect this to occur following a request from the customer.

Figure 32 Individual customer impacts of moving single rate small business customers to new 10 am -6 pm weekday ToU tariff – Option 1, Victoria



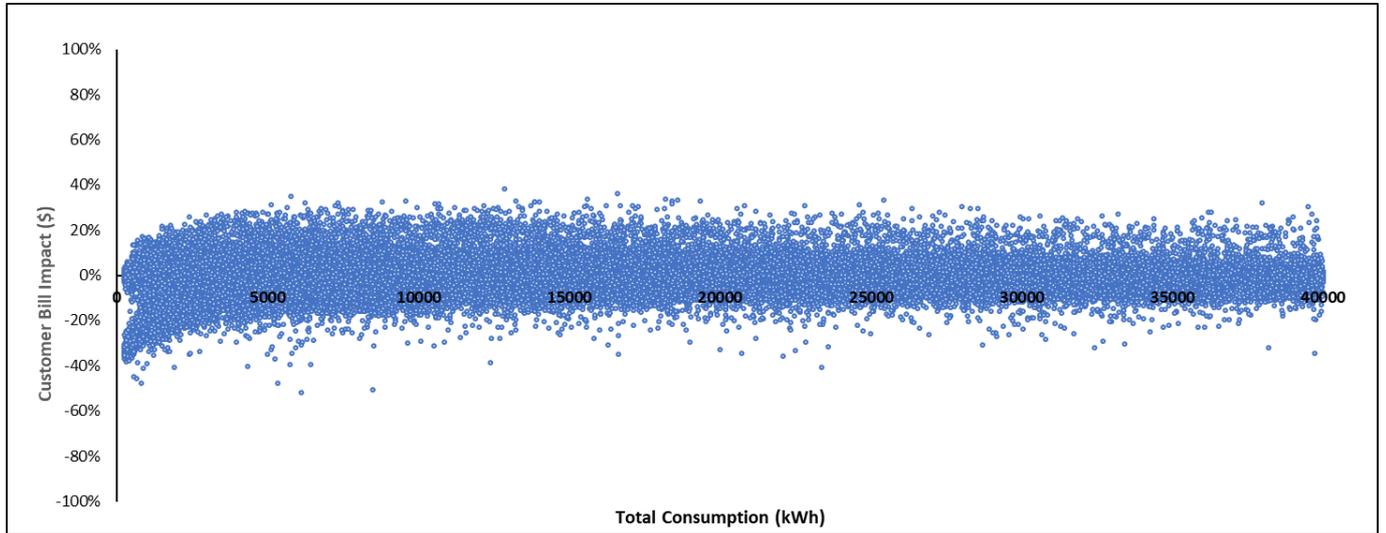
Source: Victorian distributors

Figure 33 Individual customer impacts of moving single rate and legacy ToU small business customers to new 9 am-9 pm ToU tariff – Option 2, Victoria



Source: Victorian distributors

Figure 34 Individual customer impacts of moving legacy ToU small business customers to new 9 am-9 pm ToU tariff – Option 3, Victoria



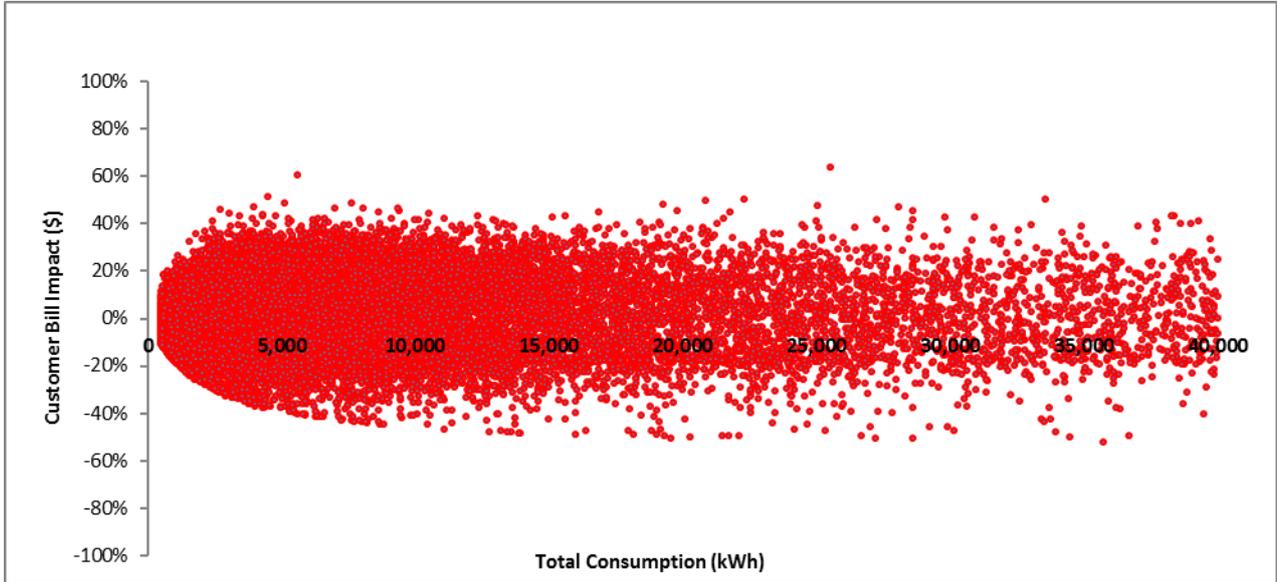
Source: Victorian distributors

Table 12 Small business customer impacts - Victoria

	% of customers with positive bill impact	% of customers with negative bill impact	Customers worse off by more than 10%	Customers worse off by more than 20%
Option 1	49	51	30	14
Option 2	51	49	20	6
Option 3 (proposed)	49	51	5	1

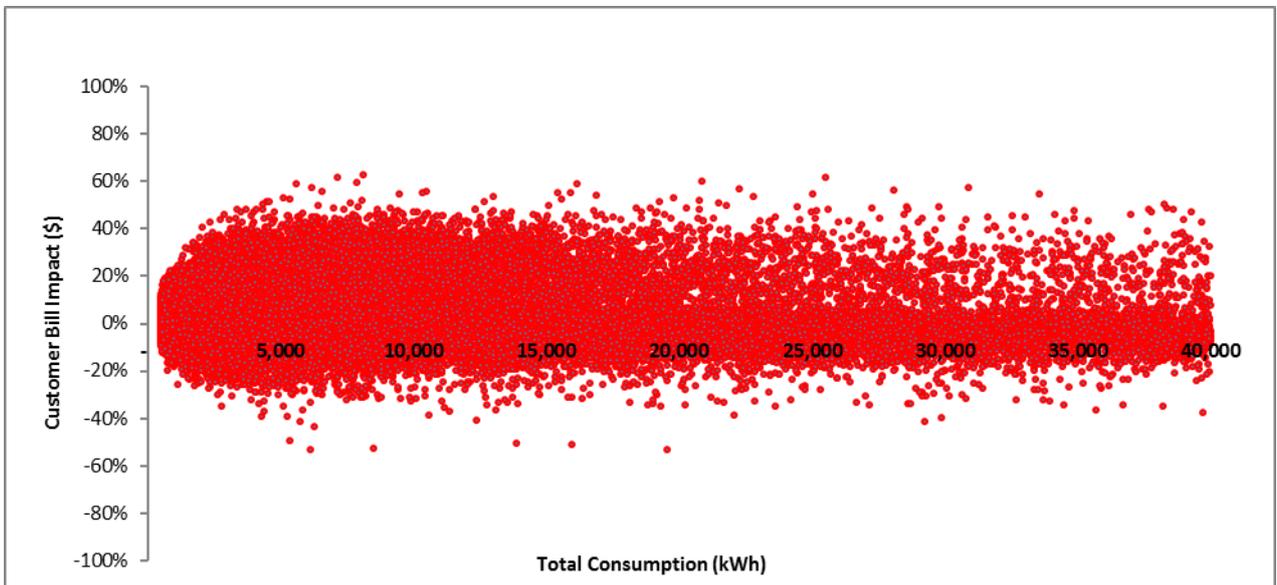
Source: Victorian distributors

Figure 35 Individual customer impacts of moving single rate small business customers to new 10 am -6 pm weekday ToU tariff – Option 1, Powercor



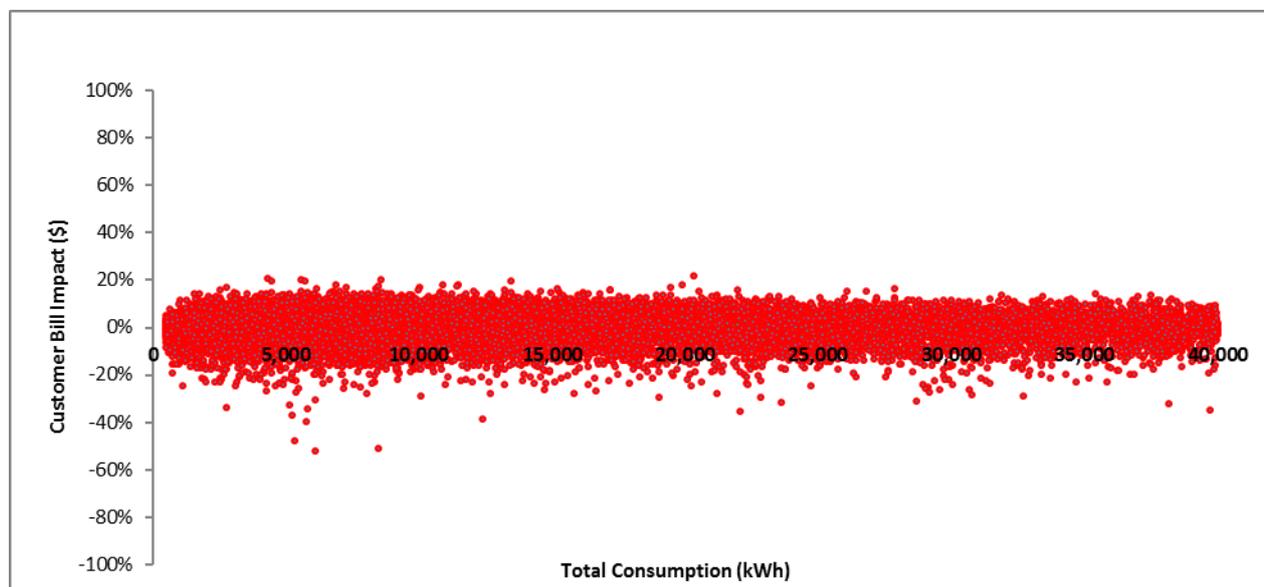
Source: Powercor

Figure 36 Individual customer impacts of moving single rate and legacy ToU small business customers to new 9 am-9 pm ToU tariff – Option 2, Powercor



Source: Powercor

Figure 37 Individual customer impacts of moving legacy ToU small business customers to new 9 am-9 pm ToU tariff – Option 3, Powercor



Source: Powercor

Table 13 Small business customer impacts, Powercor

	% of customers with positive bill impact	% of customers with negative bill impact	Customers worse off by more than 10%	Customers worse off by more than 20%
Option 1	59%	41%	22%	9%
Option 2	59%	39%	16%	9%
Option 3 (proposed)	50%	50%	2%	0%

Source: Powercor

5.5.3 How the customer impacts have influenced our proposal

Across the Victorian distributors, we already have around 30-50% of small business customers on some form of ToU tariff. On average, small businesses are therefore more likely to respond in line with efficient network investment than our residential customers—of which only around 17% of customers are on ToU tariffs. However, we consider it is important to continue to make progress on tariff reform in a way that minimises customer impacts for those unable to change their behaviour.

We can see from the analysis of option 1 that assigning all small business single rate customers to a ToU tariff creates a relatively high proportion of customers impacted by more than 10% across all networks. We cannot be confident that we would avoid capturing a significant number of customers who have very limited ability to move their electricity usage outside of the 10 am to 6 pm peak period. This risk creating customer impacts those individual customers may not be able to mitigate through adjusting their usage.

Additionally, we have not seen evidence that small business customer engagement in the electricity industry is sufficient to rely on them actively requesting to opt out when they are unable to mitigate through their usage

decisions. This supports an assignment regime predicated on either already being a ToU customer or having a pre-existing reason to contact the retailer – e.g. upgrade to 3 phase metering, a new customer connection or a solar installation.

- Option 2 and option 3 seek to reduce the customer impact compared to option 1 by widening the peak to a 9 am-9 pm weekday window. The lower impact is because both the peak and off peak prices are both lower under option 2 and option 3 (this is a result of our revenue cap and the peak price applying for longer). While less reflective of the Victoria-wide peak, this would put us on a path to further reductions in the length of the peak window after 2026 to both ensure impact is limited and to enable customers greater ability to respond.
- The key difference between option 2 and option 3 is whether we move all single rate customers onto the new tariff as at 1 July 2021. As this still creates significant impacts for some customers, who may be those with limited ability to respond to the price signal, we do not consider it would be appropriate to undertake this change at this time. We therefore consider option 3 to be most appropriate. This is consistent with our position for households, but provides additional movement toward cost-reflective tariffs by also moving legacy ToU customers onto the new ToU tariff.

5.5.4 Why we are retaining opt-out for small business customers consuming under 40MWh per year?

Our reasons for retaining opt-out for small businesses under 40MWh per year are the same as for households.

5.6 Powercor-specific proposed changes for small business customers consuming under 40MWh per year

We will continue to allow customers consuming up to 60 MWh per year to remain on the small business tariffs. This is consistent with our policy for the current TSS period which was previously based on customer impact analysis which suggested that some business customers consuming between 40MWh per year and 60 MWh per year would be highly impacted by moving them to a demand tariff with a higher fixed charge.

We propose to retain the unmetered supply ToU tariff which has a 7am to 11pm peak period. Changing this tariff would result in substantial administrative cost for us, retailers and councils which is not justified by the small amount of electricity which is consumed by unmetered supplies.

5.7 How the default tariff structure meets our pricing objectives

Table 14 summarises why we consider our approach for small businesses consuming under 40MWh per year against the objectives agreed by our stakeholders at our 2017 forum.

Table 14 Assessment against objectives designed by key stakeholders

Objective	How our approach is consistent with this objectives
Simplicity	Improves simplicity by having only one TOU tariff for all small business (compared to 31 TOU tariffs across the Victorian distributors currently). Compared to other options (such as demand pricing), it is easier for customers to understand that consumption between certain times is more costly than consumption during other periods.
Economic efficiency	Prices are more reflective of network costs than the status quo, reflecting a move towards more cost reflective tariffs
Equity	<p>Consolidating legacy ToU customers onto a single ToU tariff will mean consistency on the rates and times by which customers are charged.</p> <p>Compared to the status quo, we will have more customers on ToU tariffs meaning customers using the network relatively more at peak times will pay more than customers using the network during off-peak periods, moving towards paying a fair share of network costs. Those assigned to the ToU tariff without the ability to move their consumption can opt out, although this would require a level of active engagement by the customer.</p>
Affordability	Compared to the status quo, the narrower peak window allows customers more opportunity to save by shifting consumption. The move to a 9 am-9 pm peak window and only moving legacy ToU tariffs mitigates customer impact.
Adaptability	<p>Changing our default tariff structure to a ToU tariff structure provides a solid foundation for any potential new tariff structures that may be introduced after 2026. It is uncertain what the network will look like by 2026, and even more uncertain beyond this date. Against this uncertainty, it is unclear what tariff structure will be preferable in the future. The two-rate ToU pricing with fixed pricing periods could evolve into one, or a combination, of the following:</p> <ul style="list-style-type: none"> • a demand pricing tariff structure with a similar peak window • a ToU pricing tariff structure with an additional critical peak price (or rebate) window nominated by the distributor on a few occasions a year • a dynamic ToU pricing tariff structure • a locational ToU (or demand) pricing tariff structure or rebate where the peak/rebate ratio varies depending on the cost/benefit to the network at certain location. <p>Monitoring developments and considering the effectiveness of network pricing with greater cost reflectivity, including reconsider the length of the peak window will be a key focus for 2021-26.</p> <p>Consolidating existing tariffs is also key step toward future adaptability and agility.</p>

Source: Victorian distributors

Our consideration of other tariff structures and locational tariffs for small business customers is consistent with that provided for small households.

Table 15 provides an assessment against the pricing principles in the NER.

Table 15 Assessment against principles in the NER

Principle	How a ToU tariff structure is consistent with this principle
Tariff class revenue must lie between stand alone and avoidable cost (6.18.5(e))	We demonstrate this in our TSS.
Tariff based on long run marginal cost and the method for calculating this cost (6.18.5(f))	We explain this in our TSS.
Recovering efficient costs (6.18.5(g))	<p>Our TSS describes how we meet the stand alone and avoidable cost tests. This demonstrates how the revenue for each tariff reflects the total efficient costs of serving the customers in that tariff (Rule 6.18.5(g)(1)).</p> <p>We set our tariff levels to ensure we recover our allowed revenue in each year. This relies on our demand forecasts as we need to know demand and prices to obtain our allowed revenue. We demonstrate we only recover our efficient costs in our annual pricing proposals. These must demonstrate our total forecast revenue for each year is equal to our allowed revenue (plus any allowed adjustments).</p>
Customer impact principle relating to transition, choice and ability to mitigate impact (6.18.5(h)), and understandability of the tariff structure (6.18.5(i))	<p>The customer impact principle has driven much of the work and outcomes described in this chapter.</p> <p>In particular, the simple new default ToU tariff design and assignment approach (including ability to choose tariffs other than the default) are a result of the significant customer and stakeholder engagement we have undertaken and is targeted at ensuring we make progress on reform in a way that is acceptable to stakeholders.</p>
Jurisdictional principle (6.18.5(j))	Legislation made by the Victorian Government—by way of an ‘order in council’—sets out certain requirements for network tariffs that expire on 31 December 2020. Our TSS has been developed on the basis that this will expire. We understand that the Victorian Government will be reviewing the order in council during 2020 and we will update our TSS to comply with those requirements as part of our revised proposal.

Source: Victorian distributors

5.8 Powercor-specific proposed changes for medium business customers consuming over 60MWh per year

Our medium business customers were all reassigned to a demand tariff on 1 January 2018. The demand tariff includes demand, energy and fixed charge components. Demand is measured in 30-minute increments from 10am to 6pm weekdays and maximum demand resets monthly. In accordance with a Victorian Government order-in-council these customers are allowed to opt-out to a non-demand tariff. We created a specific opt-out tariff for these customers.

We propose to retain our medium business demand tariff, and opt-out ToU tariff, for business customers consuming over 60MWh per year. We propose to change the opt-out ToU tariff peak time from 7am to 11pm weekdays to 10am to 6pm workdays to align with the peak period for the demand tariff.

5.9 Trials

At this stage no specific large business trials are planned but opportunities for a trial may arise during the 2021-26 regulatory period.

6 Large business

6.1 Our large business tariffs

Large business tariffs apply to large low voltage, high voltage and sub-transmission tariff classes.

Large low voltage customers use more than 160MWh per year or have a maximum demand greater than 120kW.

On 1 July 2016 we made the following changes to our large business tariffs:

- replaced a kW historical maximum demand charge with a 12-month rolling kVA maximum demand charge (measured over a 15 minute period)
- remove the minimum chargeable demand
- introduce a fixed charge to ensure the right incentives for voltage level connection
- consolidation of existing kW demand tariffs into a smaller number of kVA demand tariffs.

The switch from a kW to KVA charge means that customers now have an incentive to improve their power factor which reduces demand on the distribution network.

The removal of a minimum demand charge means that all large customers are charged based on their actual kVA maximum demand and therefore have an incentive to reduce maximum demand.

The consolidation of tariffs means that each large customer is only eligible for one tariff which is fairer for our large customers because they are all charged on the same basis.

6.2 What customers have told us

Our large customers generally have their network charges separately itemised on their retail bill. Therefore, large business customers generally have a high awareness of their network tariff.

We conducted a number of interviews with large businesses which covered network pricing. Table 16 presents common comments made in these interviews and our response to these comments.

Table 16 Assessment against principles in the NER

Issue raised	Our response
Very concerned about electricity costs with some quoting increases of 20% to 75% in last couple of years	These increases are largely driven by wholesale cost increases rather than network cost increases.
See their electricity usage needs as unique and want tailored tariffs/solutions	<p>We don't offer customised pricing because:</p> <ul style="list-style-type: none"> • the regulatory framework is not conducive to customised pricing • it would result in high administrative costs for us and retailers as we have about 3,000 large customers • is likely to be perceived to be unfair, for example, why should one business get a different tariff to another business simply because they are located in an area with different network characteristics • could result in more tariff changes e.g. if a constraint is removed in a certain area then optimal network pricing would change.
Some customers would like to see a critical peak price signal with no demand charge outside these critical peak times	<p>Any tariff structure change will result in winners and losers, and the more significant the change the wider the distribution of winners and losers. We are not minded to introduce significant change to large customer pricing structures at a time when large customers are under increasing cost pressure, and only five years after making significant changes to our large customer tariffs.</p> <p>Introducing a critical peak price has significant implementation costs and a wide distribution of winners and losers. We are not convinced that offering such a disruptive tariff at a time when peak demand growth is low and highly localised, will be a net benefit for our customers. Additionally, the difficulty of forecasting revenue under critical peak prices will result in greater volatility in network prices.</p> <p>Localised peaks can be managed by offering network support payments to customers or to third-party aggregators.</p>
Would like the opportunity to use more power during low demand periods, for instance for pumping water	We are proposing to make a refinement to our tariffs to only measure peak demand from 8am to 8pm which provides a stronger peak pricing signal and offers the opportunity for customers to use more power at night without incurring a demand charge.
Some are interested in demand reduction rebates	<p>Demand reduction rebates are only cost-effective where the cost of a rebate is less than the cost of deferred or avoided capacity. Demand reduction rebates are only viable on parts of the network that will require future augmentation. Demand reduction must be sufficiently firm so as to defer or avoid augmentation investment.</p> <p>Our distribution annual planning report identifies areas of network constraint and provides customers and aggregators with the opportunity to offer non-network solutions.</p>
Want more interaction with their distributor on their energy costs, tariff options and demand response options to lower their energy outlay.	We generally don't provide one-on-one energy advice to businesses since this is a competitive market with many energy advisors offering their services.

Source: Victorian distributors

6.3 Our proposed changes

We are proposing to change the way network charges are calculated to provide large customers with the opportunity to use more power at off-peak times, whilst not increasing peak demand on our network.

Table 17 presents our proposed changes to our large business tariffs.

Table 17 Proposed changes to large business tariffs

	Current	Proposed from 1 July 2021
Fixed charge	c/day fixed charge	No change
Maximum demand	Maximum 15-minute kVA demand measured 24/7 over the prior 12 months	Maximum 15-minute kVA demand measured between 8am and 8pm on workdays only over the prior 12 months
Peak energy	7am to 11pm all days	8am to 8pm workdays
Off-peak energy	Outside peak energy times	Outside peak energy times

Source: Victorian distributors

For simplicity and consistency, all times of day for peak periods will be expressed in local time.

6.4 Assignment policy and transition

Since only one tariff is applicable to each large customer, there are no assignment or transition policies.

6.5 Trials

At this stage no specific large business trials are planned but opportunities for a trial may arise during the 2021-26 regulatory period.