

AusNet Electricity Services Pty Ltd

Tariff Structure Statement 2017-20

Submitted: 26 October 2015



About AusNet Services

AusNet Services is a major energy network business that owns and operates key regulated electricity transmission and electricity and gas distribution assets located in Victoria, Australia. These assets include:

- A 6,574 kilometre electricity transmission network that services all electricity consumers across Victoria;
- An electricity distribution network delivering electricity to approximately 680,000 customer connection points in an area of more than 80,000 square kilometres of eastern Victoria; and
- A gas distribution network delivering gas to approximately 572,000 customer supply points in an area of more than 60,000 square kilometres in central and western Victoria.

AusNet Services' purpose is 'to provide our customers with superior network and energy solutions.'

For more information visit: <u>www.ausnetservices.com.au.</u>



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Summary

New tariff structures to	A maximum demand charge will be introduced to tariffs for residential, small business and medium size commercial and industrial customers from 2018
include maximum demand charge	The maximum demand charge, which will apply to customers' monthly maximum half hour usage between 3pm and 9pm, is cost reflective because it reflects how much each customer contributes to the network peak demand, which determines asset investment requirements. Critical peak pricing tariffs will be retained for AusNet Services' largest customers.

Customers to
pay less for
network servicesOur analysis indicates that throughout 2017 to 2020, close to 100% of
customers (excluding some outliers) will have a lower network charge than
they have today.

Tariffs designed
to ensure
smooth
transitionTo ease the transition to the new tariff structures, the tariff structure proposed
for residential customers is common across Victoria. This will enable
information campaigns that contain simple, consistent messages to help
customers understand their new bills. We are also proposing a gradual
introduction of the maximum demand charge to give customers time to adjust.

Cost reflective The most important potential benefit from the introduction of cost reflective tariffs to increase pricing is reduced long term costs for all consumers. All consumers are expected to benefit through more efficient network investment that arises due efficiency. to the better alignment of consumer price signals with future network reduce future costs, and augmentation costs. This price signal provides savings for consumers who facilitate new manage demand and energy usage, and will support the transformation of products and Victoria's electricity network by providing incentives for technological services development, product innovation and behavioural change.

Customers and
otherWe have consulted widely in order to understand customer and other
stakeholder attitudes and concerns regarding our Tariff Structure Statement
(TSS). This stakeholder feedback has informed and influenced our proposal.

provide vital input to tariff development The original timeframe for the lodgement of our TSS was the end of September 2015, however, given the complexities and sensitivities identified through our engagement we took an extra month to develop our proposal. We believe it was more important to spend this additional time to further engage with specific stakeholders, and to understand alternative options and their impacts on our customers. This decision to delay was generally welcomed by our stakeholders

Equity and affordability key concerns to be addressed addressed There are potential equity and affordability challenges in the move toward a more cost reflective or user-pays model for network tariffs, and it will be important to ensure vulnerable customers are adequately protected. This proposal includes information to assist stakeholders to understand the effect of proposed changes, and alternatives. This should allow the best approach to be determined through the course of the Tariff Structure Statement Review.

Process provides further opportunity for stakeholders to have their say

1 Introduction

1.1 Background and objective

There have been a number of recent changes to the National Electricity Rules ('Rules') that underpin how distribution businesses set prices for their standard control services. In particular, in November 2014, the Australian Energy Market Commission (AEMC) made a Rule Determination titled: *National Electricity Amendment (Distribution Network Pricing Arrangements) Rule 2014*, which codified a number of important changes to the Rules related to the development of tariffs for standard control services.

The key features of this Rule Determination were that:

- A network pricing objective was codified in the Rules, requiring each network tariff to reflect the efficient costs of providing network services to the consumers assigned to the tariff.
- Distribution Network Service Providers (DNSPs) must base their tariffs on the Long Run Marginal Costs (LRMC) of supply.
- DNSPs must recover their allowed revenue in a way that minimises distortions to the price signals for efficient usage provided by LRMC-based prices.
- DNSPs must (a) manage the impact of annual changes in network prices on consumers, and (b) propose network pricing structures that consumers are reasonably capable of understanding.
- DNSPs must develop a Tariff Structure Statement (TSS) that sets out their network price structures. The TSS is to be approved by the AER as part of the regulatory determination process and will apply for the five-year regulatory control period. Price levels will continue to be approved by the AER on an annual basis.
- DNSPs are required to describe how they have consulted with retailers and consumers on the design of network prices and sought to address their concerns.

Notwithstanding the above, a number of important transitional arrangements have been outlined in the final Rule Determination. These include that:

- Victorian DNSPs are able to submit their proposed TSS to the AER by 25 September 2015, and
- The new set of pricing principles will only apply from 1 January 2017, with the existing Rules applied up until then.

Proposed indicative tariffs for year 1 of the forthcoming regulatory control period (i.e. calendar year 2016) were included in AusNet Services' Regulatory Proposal, which was submitted to the AER on 28 April 2015.

The objective of this TSS is, therefore, to:

- Set out AusNet Services' proposed approach to setting tariff structures between 2017 and 2020;
- Demonstrate AusNet Services' rationale for proposing those tariff structures, including how the proposal complies with the pricing principles contained within the Rules;
- Demonstrate how the development of AusNet Services' proposed tariffs has been informed by consultation with its key stakeholders throughout the development of this TSS; and
- Provide information to allow stakeholders to assess alternative tariff structure options so they can be informed participants in the remainder of the Tariff Structure Statement Review.

1.2 Audience

This document is written for two distinct audiences:

- the Australian Energy Regulator (AER) who, in order to approve our tariff structures, must assess whether the TSS complies with the pricing principles set out in the National Electricity Rules; and
- Stakeholders, who need information about AusNet Services, the tariff setting rules and process, and information on our proposed structures and tariffs.

1.3 Structure of this report

The remaining sections of this TSS are structured as follows:

- Section 2 provides a primer on cost reflective tariffs, including explaining the importance of cost reflective tariffs and explaining what is cost reflective for AusNet Services' network;
- Section 3 describes AusNet Services' tariff structure proposal, including how it proposes to transition its existing tariffs to cost-reflective levels;
- Section 4 outlines AusNet Services' assessment of the impact of the tariff proposal for retail customers; and
- Section 5 provides additional information AusNet Services has prepared to address concerns identified in our Stakeholder engagement, to allow Stakeholders to be informed participants in the remainder of the Tariff Structure Statement Review.

1.4 Compliance guide

Important sections of this document for the purposes of assessing Rules compliance are as set out in the following table.

Table 1.1: Reading Guide to TSS Rules Compliance

Requirement	Rule	Location
A description of how the proposed TSS complies with the pricing principles.	6.8.2(c), 6.8.2(d2)	Appendix B
An overview paper which includes a description of how customers and retailers were engaged in the development of the TSS proposal and how AusNet Services sought to address relevant concerns identified in that engagement.	6.8.2(c1a)	AusNet Services' Tariff Structure Statement 2017-20 Overview Paper
An indicative pricing schedule.	6.8.2(d1), 6.18.1A(e)	Appendix C
The tariff classes.	6.18.1A(a)(1)	Section 3.5
The policies and procedures for assigning customers to tariffs or reassigning customers from one tariff to another.	6.18.1A(a)(2)	Section 3.5
The structures for each proposed tariff.	6.18.1A(a)(3)	Section 3 and Appendix C
The charging parameters for each proposed tariff.	6.18.1A(a)(4)	Section 3 and Appendix C

Requirement	Rule	Location
A description of the approach to setting each tariff in each pricing proposal during the regulatory period.	6.18.1A(a)(5)	Section 3.7, and Appendix D

2 Cost reflective tariffs

2.1 Objective of this section

As outlined in the Introduction, the new Rules for electricity distribution network prices require that tariffs reflect the 'efficient costs' of providing network services and must be based on Long Run Marginal Costs of supply. Throughout this report, the tariffs that meet these requirements are referred to as 'cost reflective' tariffs.

The objective of this section is to provide the key background to understanding AusNet Services proposal for cost reflective tariffs, including explaining:

- why cost reflective tariffs are important, and
- what is cost reflective for AusNet Services network;

Further detail on the Rule requirements for distribution network tariffs, and how they relate to AusNet Services' tariff proposal are set out in Appendix B.

2.2 Why are cost reflective tariffs important?

If the price charged for a service does not reflect the costs incurred by the supplier or the benefits available to a customer or to society then too much or too little of that service will be supplied and opportunities for the producer or consumer to change the level and scope of the service to better suit their preferences will be lost. Economists refer to these effects as inefficiencies and by removing these inefficiencies society can be made better off.

In electricity, due to limitations of the old accumulation meters, AusNet Services has historically relied on charging customers based on the amount of energy that they consume, as this was considered to be the most equitable means of recovering a business' efficient costs of production (e.g., consumers with higher energy usage pay higher costs, consumers with lower energy usage pay lower costs).

However, while it was the best available, this method of cost recovery did not reflect the true cost individual consumers were placing on the system, some were paying too much and some were paying too little relative to the costs they caused. This resulted in the following problems or distortions:

- Overcharging customers who place lower than average demands on a distribution network during system peak demand periods to cover some of the costs of those customers that place higher than average demands on a distribution network during those system peak demand periods;
- Overcharging customers who consume a higher than average amount of energy across the year relative to a customer with who places the same demand on the network at times of system peak demand but who happens to consume a lower than average amount of energy from the network. (We note there may be good reasons other than network costs to discourage higher than average consumption.);
- Undercharging for the network costs imposed by appliances that increase the network peak (e.g., air-conditioners);
- Undercharging for the network costs imposed by appliances or technologies that reduce energy throughput across the year, or large parts of the year but do not reduce consumption at peak times (e.g., photovoltaic systems);
- Discouraging behaviour or investment in appliances or technologies that reduce a customer's demand during system peak demand times (e.g. such as more insulation or control systems that cycle air-conditioners off and on at peak times); and
- Discouraging investment in appliances or technologies that would reduce the need to distribute energy through the network during system peak demand times (e.g., a battery

system in support of a photovoltaic system that stores energy at off peak times and exports energy at peak demand times).

For society as a whole, these distortions result in a network that is larger and more expensive than it would be if these distortions did not exist. As the AEMC stated in its *National Electricity Amendment* (*Distribution Network Pricing Arrangements*)^{*i*}, the current energy based network prices that are available to residential and small commercial customers 'provide inefficient signals to consumers about when, how and where to use electricity'.

In combination, more cost reflective tariffs should lead to:

- Better investments being made by end customers in energy consuming appliances, distributed generation technology and energy storage solutions;
- Better consumption decisions being made by end customers; and
- Better investment decisions being made by distribution network businesses as a result of their end customers' consumption and investment decisions.

This benefits customers by lowering the long term costs of the network and increasing the financial benefits of investments customers make to change their own energy consumption behaviour.

The network benefits from lower costs through investment that more closely match the preferences of its customers. It also receives better signals when deciding when demand management is more appropriate than network investment.

A detailed write-up of the benefits of cost reflective tariffs is included in Section 3 of AusNet Services *Tariff Structure Statement 2017-20 Overview Paper.*

2.3 What is cost reflective?

The previous section has set out the benefits of introducing tariffs that are more cost reflective. This section explains: what the costs of AusNet Services' network are; and what types of tariff structures are needed to improve cost reflectivity.

2.3.1 Drivers of distribution network costs

Maximum demand

The major network cost affected by customer behaviour is the amount of investment in capacity required to meet the maximum demand period. The distribution network needs to be built so that it can continue to function at the period when most customers want to use the most energy, such as hot summer evenings. If there is not enough network capacity (e.g. in the transformers and powerlines), parts of the network will fail and customers will experience supply interruptions and ultimately black outs.

System maximum demand, which is the highest amount of energy that is consumed in total from the network over a 30 minute interval, determines the capacity built and, therefore, the cost of network. In Victoria, these peaks are generally times of extreme air-conditioning load on very hot summer weekdays. AusNet Services' network normally peaks between 3:00pm and 6:30pm in summer.

A useful analogy to understand peak demand and costs is the Melbourne Cricket Ground (MCG). The stadium was built to be large enough to handle the demand for seats for the AFL finals series (the peak period). Therefore, the overall capital costs are likely to be largely determined by the need to seat 100,000 people safely, not by the average number of people who use the stadium throughout the year. For example, when a grand final replay has to be held and a further 100,000 spectators attend, there are no additional capital costs to build further capacity. Conversely, when only 20,000

AEMC 2014, Distribution Network Pricing Arrangements, Rule Determination, 27 November 2014, Sydney, page 36

people attend a home and away match the costs of having already built the capacity to seat 100,000 are not reduced.

The figure below illustrates that, for AusNet Services' distribution network in aggregate, the network is only operating at the highest capacities for a small portion of the year. Only 1% of days required more than 75% of maximum capacity. Thus, a quarter of the network exists only to service 3 days of the year.



Figure 2.1: Network load by duration, 2014

Individual customers' demand contributes to the maximum demand for their section of the network and for the network as a whole.

Further details of how AusNet Services has calculated the future costs of meeting maximum demand, and specifically the long run marginal cost for the network are included in Appendix B - , Section B.2.

Other cost drivers

Although maximum demand is the major cost driver that is influenced by customer behaviour, there are other costs that must be recovered. Only a small proportion of AusNet Services' costs are driven by its demand and energy forecasts, hence these 'other costs' are significant.

What determines the costs of AusNet Services' electricity distribution network?

- many costs are relatively fixed assets have already been built and will last a long period of time;
- costs of maintaining assets are largely fixed the costs do not vary with the amount of energy being consumed from the network outside of the peak period.
 - e.g. if electric coffee machines became more popular, so that customers were using more electricity in the mornings, this would not increase the costs of operating the network, so long as the morning demand on the network did not overtake the maximum demand which currently occurs in the evening. This is because the assets required to meet the morning peak are already in place.
- changes in obligations (such as around bushfire safety) can drive increases (or decreases) in expenditure.

2.3.2 Tariff structures that are cost reflective

Existing tariffs are based on a combination of fixed charges and energy charges (rates that apply to the amount of electricity that is consumed). As discussed above, a major driver of costs is maximum demand and not energy usage, however, as illustrated in the following example, energy use is not a good indicator of a customer's demand. The figure below shows the maximum demand for a sample of customers each of whom use around 4.3MWh per year. It can be seen that there is significant variation in how much these customers contribute to network costs. Based on a sample of 1,000 customers, the range of peak demand was 0.8kW at the low end to 13kW at the high end.



Figure 2.2: Maximum demand (kW) range for 1,000 customers using ~4.3MWh p.a.

To understand the variation in demand, it is helpful to think about what these customers might look like. For example, two customers may use different types of cooling, such as if one customer has a small air-conditioning unit that is in constant use, and another customer might have multiple units but only uses them during peak times. Another example might be differences due to working hours or lifestyle, such as a shift worker who is not home during the period when maximum demand occurs.

As maximum demand is the main driver of costs, AusNet Services is proposing to introduce a demand charge into our tariff structures. Details of the proposal are set out in Section 3. This means that in the above sample, the customers with the highest demand will pay the highest network tariffs, while the customers with low demand, who place very little cost on the network, will have lower network tariffs.

To further ensure cost reflectivity, the proposed demand tariffs will recover more costs at peak times when everyone wants to use the network (i.e. the network's 'grand final'), rather than at off peak times when there is lots of spare capacity.

3 Tariff structure proposal

3.1 Objective of this section

This section sets out the key components of AusNet Services' tariff structure proposal, including outlining:

- existing tariff structures, particularly to identify attributes that are to be retained or are proposed to change;
- proposed DUoS tariff structures, including the transitional approach to introducing cost reflective tariffs;
- the cost-reflective tariffs structure that is intended to apply at the completion of the transition period.
- proposed tariff classes and the procedures that will apply when assigning retail customers to tariffs or reassigning retail customers from one tariff to another;
- proposed indicative tariffs for its Alternative Control Services; and
- the approach to setting annual tariffs.

3.2 Existing network tariff structures

This section sets out AusNet Services' existing tariff structures. There are a number of DUoS tariffs that are available to AusNet Services' customers. A customer's eligibility for a particular tariff will generally depend upon, amongst other things:

- The customer type (e.g., residential, small commercial);
- The voltage level that they are connected to;
- The amount of energy that they consume; and
- Their distance from the transmission terminal station they are served by (for some very large customers who take supply at greater than 22,000 volts).

AusNet Services' existing tariffs include a number of different tariff components (being the parameters that are used as the basis for charging the customer). These include, but are not limited to:

- **Fixed charge** (\$/day): This tariff component is calculated based on the number of days a customer has been connected to AusNet Services' network over the billing period,
- Energy charges (\$/kWh): This tariff component is calculated based on the amount of energy that a customer has consumed over the billing period. The level of the energy charge may vary:
 - At certain times of the day (in the case of 'Time of Use tariffs' or 'Two-rate tariffs'),
 - At certain times of the year (in the case of seasonal time of use tariffs or multi-rate tariffs), or
 - Above and below a certain pre-determined level of usage (e.g., the first 1020kWh over a 90 day period in the case of a 'block tariffs').
- **Capacity charge** (\$/kVA): This tariff component which currently only applies to customers who consume above 160MWh per annum is calculated based on a customer's installed connection asset/s, for example the:
 - Nameplate rating of the transformer supplying the customer's installation, or
 - o Rating of the cabling and switchgear that makes the customer connection point, and

 Critical peak demand charges (\$/kVA per annum): This tariff component – which only applies to customers who consume above 160MWh per annum - is based on a customer's average demand over a short, critical peak period (e.g., those 20 hours or so per annum when aggregate system demand is predicted to be at or near its highest levels).

Further background on key tariff concepts is set out in Appendix A – Key Tariff Concepts.

Over the current regulatory control period, AusNet Services has introduced a number of new, costreflective tariffs that it believes are already consistent with the new Rules. In particular, in 2011, AusNet Services became the first distribution network in Australia to introduce a dynamic, costreflective, critical peak demand tariff to apply to its large industrial customers. This price signal was designed to reflect the future cost (LRMC) to AusNet Services of meeting increased use of its network during times of system peak demand. This cost reflective price signal was designed to incentivise industrial and large commercial customers to reduce their load during those peak periods, where the benefit to them (via lower network charges) exceeded the cost to them of doing so. This has been a highly successful tariff, contributing up to 102MW² reduction in system peak demand. This has led to the more efficient use of AusNet Services' distribution network, lower costs to those customers who have responded to the price signal, and lower costs to all consumers in the long-run via lower augmentation related capital expenditure due to the reduction in system peak demand.

AusNet Services is proposing to retain the critical peak demand tariff structure for large customers over the period covered by this TSS, as it considers this tariff to already be consistent with the requirements of the Rules.

3.3 Proposed network tariff structures

This section outlines our proposed tariff structure for residential and small to medium industrial and commercial customers (those customers who consume less than 160MWh per annum). As noted above, the tariff structure for large industrial customers will remain unchanged.

The relative amount of revenue collected from each tariff class will <u>not</u> change under this proposal.

As highlighted in the diagram below, the proposed tariff structure introduces a demand charge alongside the existing energy and fixed charge components. The demand charge will commence from 2018 and its level will gradually increase over a 5 year period. A phased approach of raising the demand charge to a cost reflective level assists in mitigating potential transitional issues. The proposed structure is consistent with the other Victorian distributors.

Figure 3.1: Proposed changes to tariff structure



The new structure ensures that there is no different pricing or treatment of customers based on any technology related investments they may have made such as batteries or solar panels. The proposed structure is designed to achieve an outcome where customers with lower demand in the maximum demand period pay less than customers with the same energy consumption and higher demand.

² This reduction in system peak demand was recorded over the 2014/15 summer period.

The diagram below provides further detail on the key elements of the new tariff structure including the features of the demand charge.

Proposed new tariff structure – Further Detail					
	ENERGY	÷	FIXED	÷	DEMAND
:	= \$/kWh x Actual kWh		= \$/month		= \$/kW x monthly maximum demand
	Based on actual metered consumption within the period. Many off peak tariffs will be retained.		In combination with energy component recovers residual costs.		Rate varies by season: Dec – Mar (higher rate) Lower \$/kW rate applies in other months Maximum demand period 3pm – 9pm work days onl Maximum demand: max ½ hr actual demand in month x 2

Figure 3.2: Proposed new tariff structure – further detail

The new demand component applies to a customer's recorded maximum demand during the hours of 3pm and 9pm on working days. The demand component will have different rates between peak season (December to March) and off-peak season (April to November), reflecting the profile of network peak demand which is significantly higher in the summer months, and is the key driver of network investment.

3.3.1 Access to alternative tariffs

At this stage, AusNet Services has not proposed a tariff which excludes a demand component³. While the concept of having an opt-out or alternative tariff has been raised by a number of stakeholders, particularly as a mechanism for smoothing the transition to new tariff structures, it is important to assess the impact of the new tariffs on the basis that they will apply to the entire customer base.

AusNet Services expects the question of whether customers should be provided access to an alternative non-demand-based tariff will be addressed through the course of the Tariff Structure Statement Review, and may indeed be the subject of jurisdictional government policy.

By presenting a proposal on the basis that all customers will pay a tariff that includes a demand component, it allows an objective assessment of the best mechanism for achieving a smooth transition, including consideration of the impact on the overall of effectiveness of the tariff package (e.g. the ability to reduce future augmentation requirements, and to support take-up and development of efficient new energy products and services) and the relative administrative costs.

³ AusNet Services proposes that for those customers who have not taken up an AMI meter by 2018 when the demand charge is introduced, the Net System Profile from AEMO would be used to calculate the demand charge.

3.3.2 Transition proposal for existing tariffs

The detailed transition proposal is set out in Appendix D. AusNet Services proposes to transition each of its existing low voltage residential and small commercial distribution (DUoS) tariffs during the period covered by the TSS. All tariffs that are retained will have the two demand tariff components (peak season and off-peak season) added to them. These will be gradually introduced over 5 years starting from 2018. Each year will increase the strength of the demand signal by 20%. The full demand charge would be in place for the 2022 calendar year tariffs, which is beyond the period covered by this TSS.

3.3.3 Further information

AusNet Services has a large number of existing tariffs such as for off-peak hot water. As noted in the diagram above many of these will be retained and one key reason is that they are already cost reflective.

The TSS does not propose tariff *levels*, including aspects such as the transition path (the weighting between tariff components such as the energy rate and the demand charge). Tariff levels are set through the annual pricing submission process once factors such as the annual revenue allowance are finalised. However, Appendix C of this TSS proposal includes indicative tariffs, which provides an indication of how AusNet Services intends to gradually introduce the new demand tariff component, and allows customer impacts to be analysed and understood.

Details of the proposed tariff structures and charging parameters for each AusNet Services' tariff are provided in *Appendix C* – *Indicative Pricing Schedule*.

More broadly, AusNet Services' proposed tariff structure is consistent with the requirements of the Rules, including the pricing principles, as detailed in the table in *Appendix B – Compliance of TSS with Pricing Principles*.

3.4 Post-transition cost-reflective tariffs

While AusNet Services is proposing to gradually transition to cost reflective tariffs over a period that extends beyond this TSS period, it is worth discussing what the end point of this transition will be, i.e. what would a cost reflective tariff look like once the transition period is over?

It is important to note that in the future DNSPs will be required to submit a TSS every five (5) years as part of their Regulatory Proposals to the AER. It is also likely that the attitudes towards cost reflective tariff structures may change over time, thereby making possible and desirable further refinements not being contemplated at this time.

However, within the confines of the tariff structures proposed by AusNet Services in this TSS (and those of the other DNSPs), it is possible to forecast how each element of the tariff (demand, energy, fixed) will be set once the transition period is complete. This is different to the "theoretically pure" cost reflective tariff referred to in Appendix B.77 which includes concepts such as locational pricing which AusNet Services and the other DNSPs are not proposing.

Assuming no change in tariff structures, by the end of the transition period, the more cost-reflective tariffs that would be in place would have the following characteristics:

- The demand charge would still be set based on AusNet Services' LRMC, and the same demand charge (in \$/kW) would apply irrespective of where the customer was located on AusNet Services' network. Based on AusNet Services' current forecasts of augmentation expenditure and maximum demand growth, the demand charge during summer would be approximately \$9/kW and the off-season demand charge would be closer to \$2/kW.
- The 3pm-9pm maximum demand window will continue to apply, so long as this period still covers the time of the network peak demand, and peak demand will continue to be calculated on the basis of the highest 30 minute consumption (calculation uses the 30 minute measured consumption multiplied by 2).

- All energy rates will align with current off-peak energy rates, as these energy rates are already very close to cost-reflective levels.
- Fixed charges will likely increase from current levels, to account for the residual costs not recovered under either the demand charge or the energy charge.

As noted above, this 'final' tariff structure is still not a 'theoretically pure' cost reflective tariff. Theoretically pure notions such as locational pricing and charging based on the coincident peak time within that location,⁴ whilst economically sound in theory, have a number of practical limitations. These practicalities limit the ability to introduce such tariffs whilst still complying with the Rules requirements regarding customer impacts, customer understanding and administrative costs. Of these:

- Customer understanding can be improved and may not be a binding constraint in the future;
- Customer impacts will always need to be considered and may or may not pose a difficulty in the future; while
- Administrative costs may be the most enduring or determinative binding constraint.

3.5 Proposed tariff classes and tariff reassignment procedures

The following table outlines AusNet Services' proposed tariff classes.

Tariff Classes	Typical Customer	Tariffs*		
Residential	Small LV Residential Customers, 230V & 415V	NEE11,NGT11,NSP11,NEN11,NEE20,NSP20,NGT20,NEN20,NEE23,NSP23,NEE24,NEE30,NSP30,NEE31,NSP31,NEE32,NSP32.		
Small I & C	Small LV Industrial & commercial customers using up to 70MWh a year, 230V & 415V	NEE12, NSP12, NEN12, NEE21, NSP21, NSP27, NEN21, NEE25		
Medium I & C	Medium LV Industrial & Commercial customers using between 70MWh and 400MWh a year, 415V	NEE40, NEE51, NEE55, NSP55, NSP56, NEE60, NEE52		
Large I & C	Large LV Industrial & Commercial customers using over 400MWh a year, 415V	NSP75, NSP76, NSP77, NSP78		
High Voltage	Large HV Industrial & Commercial customers 6.6kV, 11kV & 22kV	NSP81, NSP82, NSP83		

⁴ Under a coincident peak demand charge, a customer's demand charge would apply to that 30 minute period when the network as a whole experiences its peak demand. The time that the peak occurs is unknowable in advance and may not align with an individual customer's own peak demand. For example, if the network peaks at 4pm and a customer's peak is not until 6.30pm, that customer's demand charge would be based on their demand at 4pm. The only difference in the case of a locational coincident peak demand charge is that the time of the peak demand is defined with regard to the specific element of the network (zone substation, feeder, etc.).

Tariff Classes	Typical Customer	Tariffs*		
Sub Transmission	Large Extra HV Industrial & Commercial customers 66kV, & Supplies to Latrobe Valley Open Cuts and Works areas.	NSP91, NEE93, NSP94, NSP95		

* Additional tariffs in schedules are created by combining Dedicated Circuit tariffs with other tariffs where customers have two element metering installed.

Source: AusNet Services

Consistent with Rule 6.18.4, which outlines the principles governing assignment or re-assignment of retail customers to tariff classes, and AusNet Services' recent EDPR proposal, the proposed principles governing assignment or re-assignment of retail customers to tariff classes are that for:

- Existing residential and small commercial customers: Each customer who continues to be a customer of AusNet Services as at 1 January 2017, will be taken to be "assigned" to the tariff class that AusNet Services was charging that customer immediately prior to 1 January 2017, except where AusNet Services can reasonably show that the 'extent of a customer's usage is likely to be greater than 160 MWh per annum;
- New customers: In developing any new tariffs whether to apply to new customers, or whether to apply to existing customers – AusNet Services will comply with the requirements of Clause 6.18.4 of the Rules, along with the rebalancing constraint outlined in the Rules and its overall Revenue Cap, as determined in accordance with the AER's 2016-20 revenue determination for AusNet Services. AusNet Services proposes to utilise the annual Pricing Proposal to illustrate its compliance to the AER with all relevant Rules pertaining to the development of new distribution tariffs;
- Assessment and review process: AusNet Services proposes to notify a customer's retailer in writing (including via email) of the tariff class to which the customer has been assigned or reassigned, prior to the assignment or reassignment occurring. The notice will include advice that the customer may request further information from AusNet Services, or that they may object to the proposed assignment or reassignment. If the customer objects to the proposed assignment or reassignment and that objection is not resolved to the satisfaction of the customer, the customer has access to dispute resolution arrangements. If, as part of any dispute resolution process, AusNet Services receives a request for further information from a customer, AusNet Services will provide such information. AusNet Services will not provide the customer with any information that it deems to be of a confidential nature, unless required to under any relevant Law, Code or Regulation. AusNet Services will adjust any tariff assignment or reassignment in accordance with any decision made by a valid dispute resolution mechanism (eg: EWOV).

3.6 Alternative Control Services tariffs

Alternative control services include our ancillary network services, public lighting, and metering services. These services can be attributed to a particular customer (rather than shared across our entire customer base).

The basis for deriving these tariffs has been outlined in detail in AusNet Services' most recent Regulatory Proposal for the 2016–2020 regulatory control period. These indicative tariffs are reproduced in Appendix C, Section C.3 of this document. The AER will make a final determination on these charges by 30 April 2016 (the determination will only specify the revenue cap for metering services).

3.7 Approach to setting annual tariffs

Rule 6.18.1A(a)(5) requires that the TSS include:

a description of the approach that the *Distribution Network Service Provider* will take in setting each tariff in each *pricing proposal* of the *Distribution Network Service Provider* during the relevant *regulatory control period* in accordance with clause 6.18.5.

AusNet Services may make adjustments to the tariff schedule for each of the last 4 years of our 5 year regulatory period, subject to consulting with customers and stakeholders and obtaining the AER's approval.

In each of these four years, a revised version of our TSS will be submitted only if a revision to tariff structures is proposed. In each of the four years, AusNet Services will submit a document—The Annual Pricing Proposal—to the AER for assessment and approval. The annual pricing proposal will explain:

- How tariffs levels will vary from 1 January in the following year;
- Any material differences between the pricing proposal and the information on tariffs and tariff structures in this TSS, including material differences between the annual pricing proposal and the previous indicative price schedule.

More detail on the annual process for updating the tariff schedule following the first year of the 2016 regulatory period, and on making changes outside of these annual adjustments is outlined below.

3.7.1 Annual changes to the Tariff Schedule

AusNet Services updates tariffs and charges each year in accordance with the current AER determination on tariffs and charges. This enables a response to changing market conditions and the recovery of costs in a way that continues to be consistent with long-term pricing goals.

In addition to preparing a TSS, where this may be necessary, we will inform customers and stakeholders via:

- email notification to retailers and industry participants;
- the AusNet Services' website, and
- consult with customers and stakeholders on any proposed changes to tariffs structures we have flagged in retailer forums, and potentially focus groups with residential and business customers. This consultation would occur around November in any year.

The process for annual changes to our network tariffs taking effect from 1 January each year is contained within chapter 6 of the Rules. We have summarised these steps in the table below.

Table 3.2: AusNet Services annual pricing proposal and approval process

Timing	Process		
November-February	AusNet Services consults on any proposed revisions to the TSS if these are required		
End of March	AusNet Services submits revised TSS to AER (if required) and publishes it on its website		
July 20 (approximately)	June CPI becomes available		
End of August	AER decision on revised TSS		
August-September	AusNet Services prepares the annual pricing proposal and revised indicative network use of system (NUOS)		

Timing	Process
	prices
End of September	AusNet Services submits its annual pricing proposal to the AER for approval
Mid November (6 weeks after JEN submits its annual pricing proposal to the AER)	AER decision on annual pricing proposal
1 January	New tariffs and any new tariff structures to take effect.

The annual pricing proposal will contain a description of all the elements that makes up the change including:

- The inflation figures
- The X factor approved in the AER's final determination
- All annual adjustments where actual costs have been different to those allowed by the AER
- All proposed pass through amounts which have a significant positive or negative impact on our costs
- A comparison of the indicative NUOS pricing schedule and the outturn tariffs in the annual pricing proposal
- and an explanation of all material differences
- An updated indicative NUOS pricing schedule
- Any relevant outcomes from our customer engagement.

3.7.2 How a New Tariff Schedule Takes Effect

This Section 6 has outlined that a new tariff schedule will take effect annually on 1 January each year. This section outlines how tariff schedule updates make their way into customer bills.

The bill that a customer receives comes from their electricity retailer. Our network charges are paid by the customer's chosen retailer.

Retailers are responsible to design the actual tariff structures that customers pay and these may vary depending on the offer a customer has agreed with their retailer.

Following the AER's approval of our network tariffs in November of each year, retailers need time to incorporate our network tariffs, estimates of their costs and their competitive strategy, into their retail price offers.

The retail market in Victoria has been deregulated, which means there are a number of different retailers who compete for customers and the government is satisfied that this competitive pressure does not require them to apply close scrutiny to retail prices.

Once retailers have set their prices, customers are able to use comparison tools to help compare the price of different energy offers and to make an informed decision about which offer best suits their needs. Customers can shop around for a retailer who offers a deal that best suits their needs. A customer who wants to actively manage their usage to save from our new tariff structures should seek a retail deal that will pass these savings on to them.

There are a number of comparator websites including commercial switching sites or the Victorian government provided comparison site <u>www.switchon.vic.gov.au</u>

The AER also has the Energy Made Easy website <u>www.energymadeeasy.gov.au</u>.

4 Impact of proposed tariff changes for retail customers

4.1 Objective of this section

This section sets out the expected customer impact of AusNet Services' proposed changes to its tariffs structures.

The objectives of this section are to:

- present information on the changes customers can expect as a result of the introduction of the new tariff structures:
 - o if there is no change in their energy behaviour; and
 - o under a range of scenarios for their future energy behaviour.
- describe how the proposed tariff structures have been set to account for the impact of tariff changes on customers.

4.2 Customer impacts – assuming no response from customers

AusNet Services is proposing to introduce a demand charge in 2018, the first full calendar year in which all interval meters will be fully operational in regard to wholesale market settlement. This section compares the total network charges customers are expected to pay in 2018⁵ to the total network charges a customer currently pays (in calendar year 2015).

A crucial assumption in the analysis presented below is that the tariff structures set by AusNet Services' will be preserved by retailers in customers' end bills. AusNet Services has no control over how a retailer elects to treat the network charges it pays.

As an example of how final retail tariffs can differ from network tariffs, AusNet Services' current NEE20 (residential) network tariff is a peak/off-peak tariff where the energy rate doesn't vary with the level of consumption and with an approximate 5:1 differential between peak and off-peak (\$0.20/kWh v. \$0.04/kWh). One particular retailer in the market offers this network tariff, but with the energy rate falling as consumption increases and a 3:1, instead of 5:1 differential between peak/off-peak. AusNet Services is not making this comparison to call into question the retail price setting process – rather it illustrates the difficulty in DNSPs presenting customer impacts when they do not set the final tariffs offered to customers.

A typical residential customer in AusNet Services' network, who uses 4.3MWh annually, would currently pay approximately \$830 in network charges, incorporating the annual metering charge and inclusive of GST. The annual retail bill for this customer, using the standing offer tariff from a major energy retailer, would be approximately \$1,790 inclusive of GST.

AusNet Services is cognisant that electricity is a key household expense and that, for some customers, increases in electricity bills are difficult to manage within their existing budget. Therefore, in developing cost reflective tariffs, the customer impacts of moving to these tariffs has been a key consideration. The TSS Overview Paper described AusNet Services' approach to stakeholder consultation, which ensured that a wide range of stakeholder concerns were obtained. The impact on annual electricity bills was an issue raised by every stakeholder group.

As noted above, there are two ways to assess customer impacts: one assumes the 'status quo', i.e. no changes to customer behaviour. The other presents what the impacts could be if customers decide to change the way they consume electricity in response to the new tariff structures. The analysis presented in this section assumes zero change in customer behaviour.

⁵ Based on the indicative tariffs presented in Appendix C.

What types of customer impacts did we consider?

When developing AusNet Services' cost reflective tariffs, three main features of network bills were considered:

- 1. the change to the total network charge;
- 2. what influenced the magnitude of the change to the network charge; and
- 3. how network charges are recovered across a year.

How much will customers' network bills change?

The figure below shows that in the first year of the transition to cost reflective tariffs (2018), AusNet Services expects almost every customer to be better off relative to today as measured by the network component of their annual electricity bill. The scale of the change in network bill depends on each customer's energy and demand profiles. The median bill reduction is \$90, meaning 50% of customers will be better off by more than \$90, and 50% will be better off by less than \$90. The few customers in the figure below that are worse off are outliers in AusNet Services' data set, with very low energy and extremely high maximum demand.



Figure 4.1: Size of change in network bill by share of residential customer base

As discussed in the previous section, AusNet Services is proposing a transition path for moving towards cost reflective tariffs. Whilst the figure above focuses on the first year of transition, by the end of the TSS period (2020), AusNet Services still expects that 100% of customers (excluding outliers) will have a lower network charge than they have today.

What influenced the magnitude of the changes to network charges

AusNet Services has sought to understand the characteristics of those customers who were relatively better off than others under the proposed tariff structures. While AusNet Services has limited information about its customers beyond their energy profile (i.e. customers' energy usage and demand), Section 5 discusses the insights AusNet Services has been able to identify that relate to customers' demographics. This section focuses on customer impacts that are driven by the way customers use the network.

As illustrated below, customers who today would receive very similar bills, will experience different impacts under tariffs that are more reflective of the costs they impose on the network.

Taking the earlier example of 'typical' customers who use around 4.3MWh per year, and looking at those customers' demand profiles, it can be seen that there is significant variation in how much these customers contribute to network costs. Based on a sample of 1,000 customers who used between 4.29MWh and 4.31MWh in 2014, the range of peak demand was 0.8kW at the low end to 13kW at the high end, as depicted below.



Figure 4.2: Maximum demand (kW) range for 1,000 customers using ~4.3MWh p.a.

The above figure is a very good example of why cost reflective pricing results in more efficient outcomes. In the above sample, there are 1,000 customers who all use the same energy over a year,⁶ but the amount of network capacity required to service Customer 1 is very different from that required to service Customer 1,000. Currently, each one of these 1,000 customers pays almost exactly the same network charge, however Customer 1,000 is imposing a much greater cost on the network than Customer 1. Introducing a demand price sends a signal to these customers of their relative impact on the network.

The above example considers differing demands of customers who use ~4.3MWh. Across AusNet Services' network, any group of customers within any defined energy range, be it 4.29MWh to 4.31MWh, or 1MWh to 2MWh, or 10MWh to 20MWh, will have its own maximum demand distribution. And it is in understanding this relationship between energy and demand that the reason for the differences in annual bill impact become clear.

There is a strong positive correlation between energy and demand. That is, customers with relatively high energy consumption are also more likely to have higher than average maximum demand and the reverse is true for low energy users. But as Figure 4.2 demonstrates, it is not a perfect correlation – some customers who use the average amount of energy will have a maximum demand that is higher (e.g. 13kW) or lower (e.g. 0.8kW) than average.

Since cost reflective pricing is revenue neutral to DNSPs, AusNet Services will receive the same amount in network revenue under an energy-based distribution charge as it will under a combined energy and demand-based distribution charge. With the introduction of a maximum demand charge, energy charges fall to ensure this principle of revenue neutrality is retained.

Since energy charges are falling at the same time that maximum demand charges are being introduced, a customer who has a relatively higher maximum demand compared to customers who have similar energy consumption will benefit less from this shift than a customer in the same energy band who has a lower demand. It is worth reinforcing that it is not the level of maximum demand *per se* that drives the customer impact – it is instead the customer's maximum demand relative to their

⁶ Or at least, all customers are within 0.5% of each other's energy consumption.

energy consumption. Put simply, customers with the most to gain from the proposed tariffs are those whose reduction in annual energy charge is relatively higher than their demand charge and this applies to any customer regardless of what their energy consumption or maximum demand is.

Some stakeholders expressed concern with how customers who currently pay off-peak rates (either for dedicated circuits, e.g. off-peak hot water, or a standard peak/off-peak two rate tariff) would be treated under cost-reflective tariffs. As described in Table D.1 in Appendix D, off-peak energy rates are already close to cost-reflective, therefore AusNet Services is not proposing to change energy rates for these customers. And since the proposed demand charge is only applied during the 3pm-9pm time window, the impact of off-peak consumption is quarantined from those customers' demand charge. As a result, the impact on off-peak/dedicated circuit customers will be the same as other residential customers.

Bill-to-bill impacts

Implementing a maximum demand charge with a peak season covering December to March will result in a higher variation between quarterly network charges than is the case now. When contemplating customer impacts, it is therefore important to consider not only year-on-year movements in customer bills, but also the difference between bills within the same year. Several of AusNet Services' stakeholders provided feedback on the importance of avoiding bill shocks from one bill to the next.

AusNet Services' plan to transition to a cost-reflective demand charge over a five year period will help to ameliorate the impact of higher summer bills, relative to other times during the year.⁷ To quantify the bill-to-bill impacts, AusNet Services selected a random sample of 100,000 residential customers and focused on two potential billing periods:

- September to November; and
- December to February.

These two periods were selected because, on average, these two quarters would be expected to lead to the largest difference between one quarterly bill and the next, relative to the current tariff structure.⁸

AusNet Services' analysis shows that, in the year that cost-reflective tariffs are introduced (2018), there is little difference in the bill-to-bill impact compared to the current tariff structure. Using the consumption data from the 100,000 customers in the sample, the median increase between these two periods using 2015 network charges is \$12.⁹ Substituting the indicative 2018 rates, the median increase rises to \$23. This is compared to the current average quarterly network bill of \$184.

The figure below shows the distribution of quarterly bill changes in 2015 and 2018. It is clear that the transition path proposed by AusNet Services does not significantly alter the bill-to-bill impacts embedded in the current tariff structure.

⁷ This is predicated on the assumption that retail bills are aligned with network charges invoiced from AusNet Services to retailers.

⁸ This is because (1) all months in the September to November quarter would attract the lower off-peak season maximum demand charge and all months in the December to February quarter would attract the higher peak season maximum demand charge, and (2) the difference in energy consumed between these two quarters is higher than any other combination of consecutive quarters.

⁹ Not taking into account changes in annual network charges.



Figure 4.3: Dollar change in quarterly bill (Sep-Nov v. Dec-Feb, % of customers)

Once the five year transition path for demand charges is complete, AusNet Services' modelling indicates that the median bill-to-bill increase for these two quarters would be \$67. Consumer education during the transition period will be crucial in order to prepare customers for the likelihood of higher bills during summer, and to assist customers to efficiently respond to these price signals.

4.3 Customer impacts – assuming that customers can respond to the price signals

Whilst the vast majority of customers will notice no increase in their annual network charges when cost reflective tariffs are introduced in 2018, customers can still benefit further by reducing their maximum demand. This section considers how customer behaviour can affect their network bills under the proposed tariff structures.

As outlined in section 3.3, customers' maximum demand will be measured as the highest recorded consumption within a 30 minute interval, multiplied by 2. This means that customers must be aware of the impact that using multiple appliances at any one time may have on their demand. The figure below depicts the impact of 'appliance stacking' for a hypothetical customer.





The benefit obtained by this customer by 'unstacking' appliances is the maximum demand rate multiplied by the reduction in maximum demand achieved. In the above example, stacked appliances could result in 7.5kW of demand. By moving the washing machine and dishwasher to outside of the

maximum demand period, and switching off the air-conditioner whilst cooking, this customer would cut their billed maximum demand by ~3.5kW. Even in the first year of the phased in demand charges, this (permanent) change in behaviour would result in a \$40/year saving. Shifting only the dishwasher and washing machine, and letting the air-conditioner run during cooking time, would still save 2.5kW.

During AusNet Services' focus groups, customers expressed a concern that one 'slip up' could result in a customer being penalised under a maximum demand tariff. AusNet Services accepts that customers must be aware of their demand at all times during the maximum demand window, but the scale of a 'slip up' to the network bill is likely to be small, particularly in the context of a total annual bill.

As an example, if a second (2.5kW) air-conditioner is accidentally left running when usually it would be switched off, the customer's bill would increase by 2.5 multiplied by whatever the prevailing demand charge would be. In 2018, when customers would still be getting used to the concept of demand charges, this could be as little as an additional \$5. By the end of the TSS period (2020), the impact of this event would be \$15. As noted above, a typical annual retail bill is currently close to \$1,800, so an additional \$15 would represent a 0.8% increase in the annual bill for a typical customer. Again, it is important to note that AusNet Services will not profit from these 'slip-ups' as any additional revenue that is collected to that which is forecast will lower tariff rates in the following year.¹⁰ And a final point to make is that charging a customer for a 'slip up' of this nature is still cost-reflective. The network must be built to ensure that maximum demand can be met – irrespective of whether that maximum demand is planned for by a customer or not.

Further, isolating the maximum demand window to workdays potentially reduces the risk of 'one off' events triggering an increased demand charge. A potential candidate for such a one off event would be a gathering of friends and/or family at a customer's residence. Whilst not always the case, these gatherings probably occur more often on weekends than on weekdays. By removing weekends from the maximum demand window, AusNet Services has reduced the risk that these types of events can result in higher maximum demand charges.

The above discussion has focused on a customer's maximum demand. It is also important to reinforce that a customer can still reduce their energy bills by focusing on energy efficiency throughout the entire year. Whilst energy charges for the distribution component of the network bill are falling, they still make up a significant proportion of the network bill.¹¹ Customers should continue to investigate ways of reducing energy consumption at all times, rather than just focusing on their maximum demand.

4.4 How proposed tariffs were shaped by considerations of customer impacts

The pricing principles set out in the Rules require that DNSPs consider the impacts on retail customers of changes in tariffs. As described above, customer impacts were a key focus of AusNet Services when developing cost reflective tariffs, in particular we considered:

- 1. the change to the total network charge;
- 2. what influenced the magnitude of the change to the network charge;
- 3. how network charges are recovered across a year;
- 4. how customers could influence the level of impact.

AusNet Services' deliberations of the above issues shaped the development of its cost reflective tariffs in a number of ways. These included:

¹⁰ Under the Revenue Cap regulation model which applies in Victoria, AusNet Services cannot collect more than the approved revenues, and must make annual adjustments to tariffs to true-up for any variances.

¹¹ And costs not associated with the distribution network will likely be recovered mostly through energy charges.

- 1. AusNet Services' proposed transition period, which reduces the year-on-year impact of adopting cost reflective tariffs;
- 2. The introduction of an off-season maximum demand charge, which reduces the retail bill volatility within a year;
- Isolating the maximum demand window to workdays only, which reduces the risk of weekend gatherings of family and/or friends triggering higher maximum demand charges;
- 4. The retention of off-peak and dedicated circuit energy rates, so that these customers would not face increased energy rates only to see the rates fall again over time; and
- 5. Plans for ongoing communication with and education for customers with regards to maximum demand, what it is and how they might respond to the new price signals.

AusNet Services believes that the tariffs and transition plan proposed in this TSS have struck the right balance between the pricing principles outlined in the Rules. Specifically, this proposal has adequately balanced cost reflectivity, customer impacts and customer understanding of network tariffs. However, to assist stakeholders to reach their own view of how the best balance can be achieved, the next section provides additional information including on alternative tariff options.

5 Addressing stakeholder feedback

5.1 Objective of this section

The original timeframe for the lodgement of our TSS was the end of September 2015, however, given the complexities and sensitivities identified through our engagement we took an extra month to develop our proposal. We believe it was more important to spend this additional time to further engage with specific stakeholders, and to understand alternative options and their impacts on our customers.

AusNet Services' consultation process, including the views of stakeholders and how they were incorporated in our tariff proposal, is described in detail in our *Tariff Structure Statement 2017-20 Overview Paper*. The objective of this section is to:

- highlight key areas of concern for stakeholders that were identified as requiring further attention; and
- provide information to assist stakeholders to understand the effect of proposed changes to tariff structures, and of alternative options.

This should allow the best approach to be determined through the course of the Tariff Structure Statement Review.

5.2 Tariff proposal a balance of competing objectives

The balance achieved with the tariff proposal as described in the previous section, represents a series of compromises. This is particularly the case with regards to reflecting customer and stakeholder feedback. On many aspects of tariff reform, we heard disagreement from stakeholders over the preferred approach. For example, some argued the tariff should send a stronger demand signal, aimed at a narrower maximum demand window. Others were concerned this would hurt vulnerable customers.

In late September, AusNet Services took the decision to delay submission of our TSS proposal in order to better understand the issues of concern to customers with the proposed tariff structure, to explore options for addressing the concerns and to consult with customer representatives (and other stakeholders) regarding the best way to address concerns.

Specifically, the extra time has been used to focus on two areas of particular concern:

- identifying impacts for specific customer groups: the inability to identify vulnerable customers and how they may be affected; and more broadly, the limited information available on how certain groups of customers would be affected: and
- redistribution of who pays for network services: while almost all customers are expected to face lower bills for the network component of their electricity than they do today, some types of customers will save significantly more than others. Specifically, customers who consume large amounts of electricity currently pay a large share of total distribution networks costs, and under the new tariff structure will pay a smaller share.

5.3 Identifying impacts for specific customer groups

AusNet Services, like other electricity distribution networks, holds limited information about who our customers are. The data we hold relates only to energy consumption and electricity demand. However, since September, AusNet Services has been able to gather additional information that has helped us understand the impact of proposed tariff changes for different groups among our customers based on their financial status. For other customer attributes (for example demographics about life stage), we are still seeking to improve our capacity to identify these groups so that we can determine the impacts of tariff changes.

There are a large number of disadvantaged or vulnerable customers in AusNet Services' network area, relative to in Victoria as a whole. This statement is supported by a variety of data sources:

- Around 30% of AusNet Services' customers currently receive Victorian government energy concessions; and
- 47% of customers categorised as 'low' or 'very low' net worth, including 30% 'very low' net worth (unpublished Deloitte analysis based on census and other data sets).

From the Deloitte data set on financial status (net worth), which is matched to individual energy and demand profiles, we have developed the graphs below and been able to identify that:

- Financial status is not a major driver of either energy or demand profiles, although there is some differences for the highest net worth customers who use more energy and have higher demand overall.
- Within all financial status cohorts there is significant variation in energy consumption and demand.

The energy and demand profiles for AusNet Services' customers is shown in the following charts, with the customer base broken into the four 'net worth' cohorts (high; average; low; and, very low) from the Deloitte data set.



Figure 5.1: Energy distribution (kWh) by financial status





Net worth is only one of many possible indicators of financial status or disadvantage. However, it is the best available information source. AusNet Services would welcome further consultation with stakeholders (retailers, customer advocates, etc.) who may be able to provide de-identified data that would assist in the analysis of impacts on vulnerable customers. AusNet Services is already in negotiations with one major retailer to obtain such data, which to be clear, would not enable AusNet Services to identify individual customers.

Implications

Based on the additional analysis undertaken in the last month, it is clear that vulnerable customers are likely to have a broad range of energy consumption and demand profiles. As such, any change to tariff structures to introduce a demand charge and maintain AusNet Services' overall revenue unchanged is likely to result in some vulnerable customers facing higher bills. One possible way to protect vulnerable customers will be with a solution that targets those customers directly.

Therefore, AusNet Services believes that it will be important for tariff reform to be accompanied with targeted assistance or protection for vulnerable customers. This is particularly the case in AusNet Services' network area. Our analysis suggests that as a whole, this group will face an increased share of the network costs we collect from residential customers, although due to falling charges, the network component of electricity bills are still expected to be lower.

AusNet Services does not consider itself to be in a position to propose what form of targeted assistance is most appropriate. This is a question for the industry and community as a whole, and should be informed by government and organisations with expertise in the needs of vulnerable customers and the practical implications of various options.

Nonetheless, AusNet Services can model outcomes of the options policy maker may consider. For example, for targeted assistance to vulnerable customers, either through a social tariff, rebate, or some other type of assistance package.

AusNet Services has estimated the cost of providing such assistance, so as to keep vulnerable customers' share of total costs flat, at around \$8 million per annum. If the assistance was provided via a social tariff, the impact on remaining customers would be to forego future savings of around \$16 each, based on an increase in the energy rate of around 0.35 cents/kWh.

5.4 Redistribution of who pays for network services

Assessing options

In response to the issues identified by stakeholders, AusNet Services' reviewed whether the impacts could be altered via a change within the agreed common Victorian tariff structure.

The specific changes to AusNet Services' proposed tariff structure that were reviewed included:

- 1. removing the fixed charge;
- 2. introducing a demand threshold of 2kW below which the demand charge does not apply; and
- 3. retaining the inclining block energy components so that the block 2 rate (the rate that applies to higher volumes of energy consumption) is set at the current rate.

We did not consider completely new structures, reflecting our understanding that consistency across Victoria remains a priority.

In assessing whether these alternatives represented a preferable outcome, AusNet Services looked at a combination of the:

 Impact on the distribution of costs and in particular how the costs are shared amongst specific customer consumption and demand categories; and • Other considerations (such as cost reflectivity, simplicity etc).

The tables below summarise the findings of the options analysis, with the first table summarising the impact on distribution of costs and the second table summarising the other considerations.

We have identified three quantitative measures to analyse the distributional impacts of the tariff structure options.

- 1. **Median bill impact**: This is a measure of redistribution because a small median saving indicates that a small group of customers are receiving most of the benefits. (1 represents largest saving; 4 represents smallest saving).
- Large energy users' proportion: this shows the share of revenue that is paid by the group of customers with the highest energy use. We have taken a cut off as the top 15% of our customers by energy usage or ≥7 MWh per annum. This is approximately one standard deviation higher than the average annual energy consumed by a residential customer.
- 3. **High demand customers' proportion**: this shows the share of revenue that is paid by the group with the highest demand. We have taken a cut off as the top 15% of our customers by maximum demand or ≥6.25 kW per annum. This is approximately one standard deviation higher than the average annual maximum demand for a residential customer.

Option	Median bill impact (index: 1 = largest saving)	Large energy users % of network costs (15% of customers)	High demand customers % of network costs (15% of customers)
Current TSS Proposal	4	26%	24%
Zero fixed charge	2	29%	26%
Demand threshold	3	27%	25%
Maintain inclining block	1	34%	29%

Table 5.1: Options assessment – impact on distribution of costs

From the table above it is clear that the maintaining the inclining block tariff structure results in smallest change to distribution of revenue across customers (i.e. it is closest to current tariffs); followed by cutting the fixed charge, imposing a demand threshold, then the initial proposal.

Table 5.2: Options assessment – other considerat
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Option	Industry Administrative costs	Cost reflectivity	Simplicity
Zero fixed charge	No added cost	Moves away from cost reflectivity	No added complexity
Demand threshold	High cost	Moves away from cost reflectivity	Complex
Maintain inclining block	Higher cost	Consistent with Ramsey pricing principles (i.e. non-distortionary)	Added complexity due to more tariff components

Based on the analysis outlined above, AusNet Services believes that it is possible to rule out the introduction of a demand threshold because it has limited impact on the distribution of costs, yet would be difficult and costly to implement both in retailers systems and it would create confusion for customers who could move above or below the threshold from one bill to the next.

AusNet Services also notes reducing the fixed charge moves tariffs away from cost reflectivity while not effectively protecting vulnerable customers.

However, maintaining the inclining block energy component of our tariffs remains a realistic option to mitigate impacts on smaller energy users.

As previously mentioned, AusNet Services does not consider itself to be in a position to propose what form of targeted assistance is most appropriate. We therefore look forward to continued discussion with key stakeholders to collectively design and implement an approach.

5.5 Next steps

The process for finalising the TSS and our tariffs for 2017 to 2020 still has a long way to run, with final structures due to be approved by the AER mid-2016 and then final tariff levels and a transition path approved on an annual basis each November from 2016.

As previously mentioned, AusNet Services does not consider itself to be in a position to propose what form of targeted assistance is most appropriate. This is a question for the industry and community as a whole, and should be informed by government and organisations with expertise in the needs of vulnerable customers and the practical implications of various options.

For this reason this proposal should be viewed as the starting point for further engagement and we are committed to continuing to work with stakeholders to ensure that our future tariffs are set in a manner that best meets the long term interests of our customers.

Appendix A – Key Tariff Concepts

There are a number of important concepts and terms which describe AusNet Services' system of charging customers for their on-going connection to and use of the network. The following table summarises the meaning of these key concepts and terms.

Term	Description
Tariff component	A parameter that is used as the basis for charging a customer. The most common parameters are energy consumption (kWh), demand (kVA or kW) and standing charges (¢ per day/per annum).
Tariff	A tariff is a group of tariff components that are combined together to determine a customer's network bill. For example, a standing charge plus a consumption charge plus a demand charge.
Tariff class	A tariff class is simply a way of grouping the tariffs that apply to similar types of customers under one broad umbrella. For example residential or small commercial.
Distribution Use of System (DUoS) tariffs	DUoS tariffs are the group of tariff components that are combined together to create a distribution network tariff, which is in turn used to determine the distribution network share of the customer's bill.
Transmission Use of System (TUoS) tariffs	TUoS tariffs are the group of tariff components that are combined together to create a transmission network tariff, which is in turn used to determine the transmission network share of the customer's bill.
Network Use of System (NUoS) tariffs	NUoS tariffs are the combination of DUoS and TUoS tariffs (and any other costs that a network business is able or required to recover via its network tariffs ¹²).
Demand	Demand (kW or kVA) is a measure of the amount of energy that a customer consumes from the network over a half hourly period.
System peak demand	System peak demand is the highest amount of energy that is consumed from the network over a 5 minute interval. The amount of network capacity that needs to be built, and therefore, the cost of the network, is determined by the peak demand.
Kilowatt Hour	Kilowatt hour (kWh) is a measure of the amount of energy that is consumed over any particular period. It the amount of energy that is required to meet a one kW demand for an hour.
Standing charge	A fixed fee that is charged to a customer to retain their connection to the electricity network. This is generally levied on a daily, monthly or annual basis.

¹² Jurisdictional Schemes are an example of additional costs that are eligible to be recovered from via NUoS tariffs.

Appendix B – Compliance of TSS with Pricing Principles

B.1 Objective of section

The objective of this section is to discuss the key¹³ requirements that the Rules place on AusNet Services regarding the development of its future network tariffs. The Rules requirements as set out in the Pricing Principles can be summarised as:

- Tariffs must be based on the LRMC,
- The revenue that is generated from a customer or group of customers must be between the stand alone and avoidable cost,
- Tariffs must be designed to recover residuals in a way that minimises distortions to the price signals for efficient use,
- Having regard to the impact on customers of changes in tariffs from the previous year, new cost reflective tariffs can be transitioned to cost-reflective levels over time, and
- Tariff structures must be reasonably capable of being understood by customers, having regard to consultation undertaken with customers in development of the TSS.

These are discussed in the sections below.

B.2 Long run marginal cost

Rule 6.18.5 (f) requires that:

"each tariff must be based on the long run marginal cost of providing the service".

Long run marginal cost is a measure of the incremental (marginal) costs that need to be incurred when there is an incremental (marginal) increase in use of the electricity distribution network, or conversely the costs that would be avoided for a marginal decrease in use of the network¹⁴.

In order to develop tariff structures and indicative tariffs based on LRMC, three questions need to be answered:

- What 'service attributes' should an electricity distribution network seek to price?
- What cost information should be included in the LRMC calculation?
- What methodology should be used to calculate the LRMC?

What service attributes should be priced?

The issue of what 'service attributes' should be priced is sometimes raised in the context of electricity network pricing. For example, should a network business price demand, or throughput?

A first order condition underpinning the development of the LRMC is that it:

- reflects the specific cost drivers faced by an individual network business, and
- these should be the cost drivers that can be affected by the future behaviour of end customers.

¹³ AusNet Services acknowledges that there are a number of other important aspects of the Rules that is must comply with in relation to the development of its tariffs for Direct Control Services. For example, Rule 6.18.5 (a) contains a the Network Pricing Objective, which is that tariffs *'should reflect the Distribution Network Service Provider's efficient costs of providing those services to the retail customer'*. Whilst AusNet Services has given explicit regard to this, and all of the other components of the Rules affecting the development of tariffs for Direct Control Services, the focus in this section is to discuss the key aspects of the Rules that affect the *structure* and *level* of network tariff components.

¹⁴ The 'long-run' aspect of LRMC relates to the fact that over shorter time frames some costs cannot be adjusted (e.g. because contracts are in place or assets are already installed), whereas over a longer timeframe all costs are variable.

In AusNet Services' case, the key cost driver that can be affected by its customers' future consumption behaviour is peak demand (this is discussed in further detail in the next section).

The following diagram illustrates the demand that is placed on AusNet Services' network on average, relative to the demand that is placed on AusNet Services' network on a peak demand day.

It is the system peak demand, and more specifically, how this is forecast to change in the future, which determines the size and types of assets that AusNet Services need to install in the future.



Figure B.1: Network Demand – Average vs Peak day, 2014

AusNet Services' network normally peaks in summer, from mid-afternoon into evening. The system peak demand is predominately driven by residential customer air-conditioner load, which contributes the most when they return home from work on very hot days. The very high loadings can be maintained between the hours of 3pm and 9pm on those peak demand days.

Energy consumption occurring outside of AusNet Services' system peak demand is not a material driver of its future costs. This is discussed in more detail below.

What cost information should be included in the LRMC calculation?

Once the service attribute to be priced is established, it is important to ensure that the appropriate costs – reflecting that service attribute - are inputted into the LRMC model so as to support the derivation of a cost-reflective price for that service attribute.

AusNet Services has used the following test to determine whether or not a particular cost should be included in the LRMC model:

If a cost is included in the LRMC calculation, and customers respond to the price signal that stems from the inclusion of that cost either through changing their behaviour or through their subsequent decisions regarding what energyusing equipment to purchase, will that response actually reduce AusNet Services' future costs? If the answer is 'no' (i.e., AusNet Services' costs do not change as a result of a customer's response), then AusNet Services has removed that cost from its LRMC calculation. This is because the inclusion of that cost would diminish economic efficiency (e.g., it would lead to a reduction in consumption, but no reduction in costs).

Having regard to the above test, AusNet Services has included the following costs in its LRMC calculation:

- Forecast network capacity augmentation capital expenditure: The timing and size (and therefore cost) of expenditure in this cost category can be influenced by changes in AusNet Services' customers' future demand, therefore, these costs have been included in the calculation.
- Incremental forecast operating expenditure: The timing and size (and therefore cost) of AusNet Services' expenditure on demand management programs and some short run operational and maintenance costs can be influenced by changes in AusNet Services' customers' future demand and / or consumption behaviour, therefore, these costs have been included in the calculation.

AusNet Services has excluded the following costs from its LRMC calculation:

- Forecast replacement capital expenditure: The timing and scale of AusNet Services' future replacement capital expenditure is *predominately* driven by condition and risk factors affecting individual assets (or categories of assets). It is not materially driven by the loadings (whether peak demand or energy throughput) placed on those assets, nor will the sizing (and therefore cost) materially change as a result of AusNet Services' forecast demand or energy throughput.
- Forecast customer connection capital expenditure: AusNet Services has concluded that, in general, signalling these costs to the broader customer base through a LRMC based variable charge is likely to diminish economic efficiency, as the timing and scale of AusNet Services future customer connection related capital expenditure is predominately driven by the location and particular connection characteristics of the connecting customer. Therefore, even if AusNet Services' broader customer base were to change their consumption behaviour in response to a price signal that reflected these costs, the specific costs associated with connecting an individual customer (or an individual development) are unlikely to change materially.
- Forecast corporate, safety related and IT capital expenditure costs: The timing and scale of these costs will not be affected by AusNet Services' customers changing their future demand or energy consumption behaviour, therefore, these costs have not been included in the calculation.
- **Sunk costs:** As these costs have already been incurred, these costs cannot be influenced by AusNet Services' customers changing their future demand or energy consumption behaviour.
- Non-incremental forecast operating expenditure: This includes costs such as Finance, HR, Legal, Regulatory and general management related costs. As expenditure in these areas will not be influenced by AusNet Services' customers changing their future demand or energy consumption behaviour, these costs have not been included in the calculation.

What methodology should be used to calculate the LRMC?

There are two methodologies that are generally used by network businesses to calculate their LRMC of supply. The first is the Average Incremental Cost (AIC) approach, which is underpinned by a business' forecast of its future costs (numerator) that will change as a result of its forecast change in demand (denominator), with both the numerator and denominator discounted back to create a Net Present Value (NPV).

The second is the Perturbation approach, which in practical terms, seeks to ascertain how a business' expected future costs would change (in NPV terms) if there was an incremental increase

(or decrease) in the future levels of demand for its services. This approach is generally considered to be more suited to wholesale supply systems where augmentation of the system requires lumpy capital investments.

Consistent with the requirements of the Rules, particularly Rule 6.18.5 (f), AusNet Services has considered the costs and benefits of both methodologies, and has concluded that the AIC approach is the most appropriate methodology to use given its circumstances. In particular, the AIC:

- Ensures that if AusNet Services' underlying demand and cost forecasts eventuate, the NPV
 of revenue that AusNet Services' generates over the evaluation period from the
 implementation of a cost-reflective price based on the calculated LRMC will exactly equal
 the NPV of the costs that it incurs that is, growth is 'self-funding'. This means that not only
 can it be said with some certainty that, subject to timing differences, this tariff is cost
 reflective given the underlying forecast parameters, it also ensures that there is no crosssubsidisation between those customers causing the growth to occur, and those that are not
 causing that growth to occur,
- It is commonly used for distribution networks, as it is generally considered to be well suited to situations where there is a fairly consistent profile of investment over time to service growth in demand, and
- It relies on forecasts that have been provided as part of AusNet Services' recent regulatory submission, and therefore the costs of calculating, implementing and applying the AIC is less than other alternatives, in particular the Perturbation approach (which, amongst other things, would require AusNet Services to develop a new demand forecast and to quantify the impact that that new demand forecast would have on its forecast capital expenditure program).

The AIC approach to determining the LRMC utilises the following formula:

 $LRMC = \frac{\sum NPV(Forecast \ Capex + Forecast \ Opex)}{\sum NPV \ (Forecast \ Growth \ in \ outputs)}$

The key cost inputs were described in the previous section of the TSS. AusNet Services has adopted a 10-year evaluation period, which is consistent with the period typically used to undertake these types of analyses¹⁵.

The following table summarises the key results of AusNet Services' LRMC analysis¹⁶.

Table B.1: Results of AusNet Services' LRMC analysis

Voltage Level	LRMC (\$/kVA)
Low Voltage	\$88.70
High Voltage	\$24.58
Sub transmission	\$16.08

¹⁵ AEMC 2014, Distribution Network Pricing Arrangements, Rule Determination, 27 November 2014, Sydney, page 122

¹⁶ LRMC is calculated for different voltage levels because different customers classes use different amounts of the network. For example, a customer that connects to the high voltage network should not pay for growth on the low voltage network. For completeness, it is noted that AusNet Services derived LRMCs for a number of different locations within its network, however, it has not presented this information in this TSS as it does not propose to adopt tariffs that differ by location.

B.3 Between the stand alone and avoidable cost of supply for a tariff class

Rule 6.18.5 (e) requires:

that for each tariff class, the revenue expected to be recovered must lie on or between:

(1) an upper bound representing the stand alone cost of serving the retail customers who belong to that class; and

(2) a lower bound representing the avoidable cost of not serving those retail customers'

The rationale for this test is to ensure that inefficient connection and disconnection decisions are not made by users, or prospective users of AusNet Services' distribution network.

Therefore, for a tariff to be deemed to be efficient under the Rules, it must deliver a stream of revenue from a customer, or as a proxy, a class of customers, that is between this upper and lower bound. This is commonly known as the 'efficient pricing band'. There are two reasons why a price within this 'band' is deemed to be efficient:

- Greater than the avoidable cost: If the revenue expected to be recovered from a customer / customer class does not exceed the cost that the business would avoid if they did not provide them with electricity services, that customer is (a) being subsidised by AusNet Services' remaining customer base, and (b) would be over-consuming electricity services, relative to efficient levels (assuming that the customer or customer class' demand curve is not perfectly inelastic); and
- Less than the stand alone cost: Breaching this upper bound may result in that customer (or group of customers) being incentivised to inefficiently by-pass AusNet Services' existing distribution network in order to avoid paying AusNet Services' tariffs, despite the fact that the incremental cost to AusNet Services of providing these services to that customer (or group of customers) may be less than the alternative (by-pass) option.

AusNet Services has adopted an approach that focuses on the potential for an individual customer to by-pass its network, as opposed to the potential for an entire customer class to by-pass its network. AusNet Services considers this to be a more practical and robust application of the underlying economic principle that underpins the Rules, as it is likely to be an individual customer that makes the decision to by-pass a network, not an entire customer class.

AusNet Services has further split this analysis into two categories, reflecting the likely alternative servicing solution that would be taken up by an individual customer:

- Large Customers: AusNet Services has estimated the total network cost of connecting a customer to the existing electricity transmission network, and compared this to AusNet Services' existing distribution use of system charges; and
- Small Customers: AusNet Services' has assessed the cost per kWh of installing, operating
 and maintaining a stand-alone power system (that is able to provide an equivalent level of
 reliability to AusNet Services' distribution network), and compared this to the average retail
 bill that customer would avoid (inclusive of AusNet Services' proposed network use of
 system tariffs for that class of customer) if they by-passed the grid.

The former focuses on the fact that it is the location of a large customer to another potential alternative source of electricity that will be the predominant driver of the economic by-pass of AusNet Services' distribution network. Further, this acknowledges that the larger the customer, the less economic it is generally likely to be to utilise non-network sources of electricity due to demand outstripping the ability of these supply solutions (e.g., embedded generation).

The latter recognises that it is likely to be individual customers who seek to by-pass AusNet Services' existing distribution network to avoid having to pay their all-in retail charges. Moreover, it reflects the fact that given the consumption and demand characteristics of residential and small commercial customers, it would in most cases not be technically feasible or economically attractive to bypass the distribution network by connecting to the transmission network. Rather, bypass is more likely to be

accomplished through the use of an alternate fuel source, such as a standalone system using PV and battery and a small generator.

The results of the two stand alone cost analyses are contained in the table below. For completeness, the 'Average All-in Retail Bill' reflects the average retail bills for the two customer classes – residential and small industrial and commercial customers -- for which AusNet Services has assumed the adoption of a stand alone power system.

Tariff Class	Stand alone Cost (\$/kWh)	Average All-in Retail Bill Avoided (\$/kWh)	Avoided Distribution Costs	Average DUoS Bill
Residential	\$0.84/kWh	\$0.273/kWh	\$0.021/kWh	\$0.110/kWh
Small I & C	\$0.60/kWh	\$0.252/kWh	\$0.051/kWh	\$0.124/kWh
Large I & C	\$1.13/kWh	Not applicable	\$0.015/kWh	\$0.071/kWh
High Voltage	\$0.388/kWh	Not applicable	\$0.003/kWh	\$0.033 /kWh
Sub Transmission	\$0.019/kWh	Not applicable	\$0.0004/kWh	\$0.005/kWh

Table B.2: Results of stand alone and avoidable cost modelling

Source: AusNet Services

B.4 Recover residuals in a way that least distorts consumption behaviour

Rule 6.18.5(g)(3) states that sub-paragraphs (1) and (2) (which relate to recovering the efficient costs of serving retail customers that are assigned to a particular tariff) should be complied with:

"in a way that minimises distortions to the price signals for efficient usage that would result from tariffs that comply with the pricing principle set out in paragraph (f)".

This stems from the fact that if variable prices reflect the marginal cost of supply (i.e., LRMC), and this would not provide sufficient revenue for a business to recover its total efficient costs, then the business needs to be able to levy another charge in order to ensure that it recovers the 'residual' costs.

In particular, this acknowledges that within the electricity industry, a significant proportion of a network business' costs do not vary with the future consumption behaviour of its customers. Therefore relying only on variable charges based on the LRMC may not allow a business to recover its full costs (i.e., it may not achieve revenue adequacy levels). The challenge then becomes how network businesses recover their efficient costs in a manner that least distorts consumption decisions.

Given this, the most economically efficient means of recovering any residual cost whilst complying with this Rule specifically would be to levy a fixed charge upon customers so that:

- revenue adequacy levels are obtained, whilst
- not distorting any other price signal that may affect a customer's future consumption or demand decisions.

This is because demand for this product (being the continued connection to the network) is perfectly inelastic, as long as the levying of a fixed charge, in combination with variable charges, does not exceed a customer (or group of customers') standalone cost of supply (as per Rule 6.18.5 (e)(1)), nor fall below their avoidable cost of supply (as per Rule 6.18.5 (e)(2)). Where this Rule is observed, the loss in allocative efficiency of levying a fixed charge is zero.

B.5 Able to be transitioned to cost-reflective levels over time

Rule 6.18.5 (h) states that:

A Distribution Network Service Provider must consider the impact on retail customers of changes in tariffs from the previous regulatory year and may vary tariffs from those that comply with paragraphs (e) to (g) to the extent the Distribution Network Service Provider considers reasonably necessary having regard to

(1) the desirability for tariffs to comply with the pricing principles referred to in paragraphs (f) and (g), albeit after a reasonable period of transition (which may extend over more than one regulatory control period);

(2) the extent to which retail customers can choose the tariff to which they are assigned; and

(3) the extent to which retail customers are able to mitigate the impact of changes in tariffs through their usage decision.

This is an important Rule as the effect is to provide the distribution business with some flexibility as to the period over which it transitions its network tariffs to levels/structures that are consistent with the broader Rule requirements around network pricing ((Rule 6.18.5 (e) – (g)). For example, reliance may continue to be placed on energy charges to recover some residual costs, so as to 'manage the impact on retail customers of changes in tariffs'.

B.6 Stakeholder Consultation

Rule 6.18.5 (i) states that:

The structure of each tariff must be reasonably capable of being understood by retail customers that are assigned to that tariff, having regard to:

(1) the type and nature of those retail customers; and

(2) the information provided to, and the consultation undertaken with, those retail customers

The effect of this Rule, and the broader requirements of the National Electricity Law – in particular the National Electricity Objective - is to require the distribution business to consult with its customers as part of the development of this TSS. AusNet Services' approach to consultation is detailed in Attachment A of the TSS Overview Paper.

B.7 A theoretically pure cost-reflective network tariff structure

As discussed in the preceding sections, the Pricing Principals and broader Rules require a number of real world issues to be considered alongside the concepts used to derive the theoretically pure cost reflective tariff described above, including:

- the administrative costs associated with transitioning tariffs,
- Customers' ability to understand these tariffs, and
- the impact of tariff changes on customers, including customers' ability to choose and respond to tariffs.

Before describing AusNet Services proposed tariff structure which takes into account these provisions it is useful to discuss the characteristics of a cost-reflective tariff structure that would not depart from theoretical purity. The following table describes a theoretically pure cost-reflective tariff structure, consistent with the requirements of Rule 6.18.5 (f), Rule 6.18.5 (e) and Rule 6.18.5(g)(3). These Rule requirements relate to:

- tariffs being based on the LRMC,
- the revenue that is generated from a customer or group of customers being between the stand alone and avoidable cost, and
- tariffs being designed to recover residuals in a way that least distorts consumption behaviour,

Tariff Component	Composition of a theoretically pure cost-reflective tariff structure
	Part of a customer's bill would be based on the demand that they place on the network at times of system peak demand, with the rate based on the LRMC of supply for that part of the network.
Demand	As implied by the above::
	 The rate would reflect the LRMC in different parts of AusNet Services' distribution network (i.e., the charge would vary by location), and
	• The charge would only apply to a customer's demand at the time when (that portion of the) AusNet Services network peaks.
	Part of a customer's bill would reflect the LRMC of supply of energy outside of times when the AusNet Services network is expected to peak (as the costs of augmenting the network to cater for forecast increases in system peak demand are signalled and recovered via the previously mentioned demand charge).
Energy	This would mean that this charge would effectively reflect the short-run marginal operating and maintenance cost of distributing an extra kWh of energy in non-peak demand periods. For electricity distribution networks, this marginal cost is very small (in the order of <1c/kWh), which, by definition, means that a theoretically pure cost-reflective anytime energy charge should be set at a correspondingly low level.
Standing Charge	A standing charge would be set so as to recover all of AusNet Services' residual costs, being the difference between AusNet Services' overall revenue requirement (which reflects the AER's view of the efficient costs of providing network services) less the amount of revenue that it recovers via the levying of its cost-reflective variable charges as defined above.
Standing Charge	As long as the combination of charges (e.g., fixed plus variable) delivers a level of revenue that is below a customer's (or group of customers') stand alone cost of supply, but above their avoidable cost of supply, this recovery mechanism minimises distortions to the price signals for efficient usage (e.g., the demand and energy based charges discussed above) consistent with Rule 6.18.5(g)(3).

Table B.3: The composition of a theoretically pure cost-reflective distribution tariff

Source: AusNet Services

B.8 Summary of rationale for proposed tariff structure

The preceding sections have established the requirements to be taken into account in developing tariffs to satisfy the network pricing objective (clause 6.18.5(a) of the Rules). This states 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.

Table B.4 summarises the rationale applied in adopting positions in respect of the tariff components, having regard to the requirements of the Rules.

Table B.4: Rationale for proposed tariff structure

Tariff Component	AusNet Services' Tariff Transition Strategy	Rationale for adopting this position
	Consistent with the Rules requirement for tariffs to be based on the long run marginal cost of providing the service (clause 6.18.5(f)), a demand charge will be introduced for	System peak demand is the main driver of AusNet Services' future costs that can be affected by customers' future consumption behaviour. Therefore, it is the primary focus of the proposed cost reflective pricing structure change.
	every tariff that will be retained and which does not currently include a demand charge.	System peak demand has, in recent times, always occurred over the period December through March, hence why these months have been identified as 'peak' months.
Demand		As described in Appendix B, Section B.2, AusNet Services' load profile is at its highest between the hours of 3pm and 9pm, hence why this timeframe has been chosen.
(a) peak season		The maximum demand window is isolated to workdays only, which reduces the risk of weekend gatherings of family and/or friends triggering higher maximum demand charges.
Charge based on a customer's recorded maximum demand during the hours of 3pm and 9pm on working days during each of the months December through March inclusive		AusNet Services' has deliberately chosen not to introduce a tariff that more accurately target's customers' demands during system peak demand periods (a Critical Peak Demand tariff). This is consistent with the feedback received from customers, and AusNet Services' objective of being consistent with other Victorian Distribution businesses.
	The level at which this demand charge would be set would be:	Customers within a particular tariff class have similar connection and usage characteristics, therefore, they should face a similar demand charge.
	 Consistent across all customers within a particular tariff class. 	Deriving the level of the demand charge based on the LRMC is consistent with Rule $6.18.5(f)$.
	 Based on the results of AusNet Services' LRMC modelling, and 	Transitioning to cost-reflective levels over time is consistent with Clause 6.18.5 (h) of the Rules which requires network businesses to consider the impact on retail customers of changes in tariffs. This also reflects the preferences aired by most stakeholders throughout
	Transitioned to cost-reflective levels over time.	the consultation process.

Tariff Component	AusNet Services' Tariff Transition Strategy	Rationale for adopting this position	
(b) off-peak season Charge based on a customer's recorded maximum demand during the hours of 3pm and 9pm on working days during each of the months between April and November	 The tariff level would be set to be: Consistent across all customers within a particular tariff class, and Be at lower levels than the December through March demand charge. 	 AusNet Services is proposing to introduce a demand tariff during the off peak periods of April through November. This will be set at a significantly lower level than its 'peak' demand charge. The primary reasons for proposing this tariff component is: To complement AusNet Services' peak demand charge, by reinforcing to customers the concept of demand as the basis for charging, with the view to improving their understanding of AusNet Services' broader tariff structure; and To assist in managing some of the customer impacts stemming from the move towards more cost-reflective tariffs, including the seasonal volatility of bills, which is consistent with Clause 6.18.5 (h) of the Rules which requires network business to consider the impact on retail customers of changes in tariffs. This approach was generally supported by most stakeholder advocates during consultation. 	

Tariff Component	AusNet Services' Tariff Transition Strategy	Rationale for adopting this position
Energy charge The energy component in the standard tariff structure for small to medium energy use customers will be a single rate applied any time of day.	 AusNet Services' will transition the energy component of all of its tariffs by decreasing this in step with the phase-in of the maximum demand charge, in the following priority order: Aligning block rate energy tariffs, by reducing the higher block rate towards the lower block rate, and aligning peak rate energy charges with flat rate energy charges that apply to other tariffs applicable to customers within the same tariff classes, then Reducing all anytime energy and peak energy charges over time so that they align with existing off peak and dedicated circuit tariffs, then Reducing off-peak tariffs to long-term cost reflective levels. 	Currently, peak and flat rate energy charges are used to recover future capital costs that vary as a result of customers' future consumption behaviour. The introduction of a cost-reflective demand charge that is designed to recover AusNet Services' future capital costs that are driven by forecast changes in customer demand will replace the use of energy charges for this purpose and would result in current energy charges being significantly above cost reflective levels, which means they are inconsistent with the Rules (e.g., Rule 6.18.5(f)). Peak/flat rate energy charges are (a) likely to exhibit a higher elasticity of demand (relative to other energy tariff components), and (b) be further away from cost-reflective levels (for example, relative to existing off-peak energy charges), therefore the first priority is to reduce these charges to more cost reflective levels so as to comply with Rule 6.18.5(g)(3) which requires AusNet Services to minimise distortions to the price signals for efficient usage. The proposed approach is consistent with the general feedback from stakeholder advocates, who were generally supportive of a move towards cost-reflective tariffs, which in turn underpins the move away from basing a customer's network bill on their anytime energy consumption. However, many customer representatives noted the importance of transitioning tariffs over time, and the rate at which the anytime energy tariff declines will significantly affect customer impacts, particularly the extent to which customers with low consumption might be impacted. It is for this reason that AusNet Services is not proposing to move to a theoretically pure cost-reflective anytime energy tariff declines with low covered by this TSS.

Tariff Component	AusNet Services' Tariff Transition Strategy	Rationale for adopting this position
Fixed Charge	Fixed charges would be adjusted over the long-term so as to recover more of AusNet Services' residual costs.	Fixed charges are the least distorting means of recovering costs that will not otherwise vary with customers' future demands (as long as the stand alone/avoidable cost test requirements are met). Therefore, the proposed long-term approach is consistent Rule 6.18.5(g)(3) which requires AusNet Services to minimise distortions to the price signals for efficient usage.
A fixed periodic charge expressed as an annual amount		AusNet Services' has been cognisant of feedback from stakeholders that varying the tariff components in moving towards cost-reflective tariffs must be considered having regard to the customer impacts.
		Increasing the fixed charge component will be a more significant contributor to customer impacts for customers with low consumption. It is for this reason AusNet Services is proposing to retain recovery of residual costs via the energy charge.

Appendix C – Indicative Pricing Schedule

C.1 Indicative tariff levels

The indicative tariffs presented in this Appendix are consistent with the Proposal set out in Section 3 of this document, and are modelled on the basis of AusNet Services' electricity distribution regulatory proposal (submitted in April 2015).

AusNet Services is committed to implementing a transition path that is in the best interests of customers, which provides customers an opportunity to respond to the new cost reflective price signals, and will seek to work with all stakeholders to achieve this.

C.2 Factors that may cause tariff levels to vary from these indicative levels

There are number of factors that are outside of AusNet Services' control that are likely to affect the implementation of the aforementioned tariffs over the period covered by the TSS.

Amongst other things, actual tariffs may vary from these indicative tariff levels in any given year as a result of:

- The AER's forthcoming regulatory decision, which will determine the amount of revenue AusNet Services is able to collect in each year of the 2016-2020 regulatory control period to cover its efficient costs of providing standard control services,
- Unders or overs in revenue collection in any individual year (e.g. due to energy volumes or energy demand varying from forecast), which under the applicable price control (revenue cap) must be corrected for in subsequent years;
- Future regulatory decisions applying to transmission services,
- Unders and overs in any individual year as a result of transmission services being regulated via a Revenue Cap form of price control,
- The outcome of a number of incentive schemes (e.g. STPIS for reliability, and F-factor for bushfire safety) that apply to AusNet Services;
- Any successful cost pass through applications, and
- CPI varying from forecast.

The table below shows the indicative tariff rates for Network Use of System (NUOS) tariffs.

Table C.1: indicative tariff rates for Network Use of System (NUOS) tariffs

Tariff	Charging Parameter	2017	2018	2019	2020
NEE11	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy Block 1(\$/kWh)	\$0.1076	\$0.1092	\$0.1020	\$0.948
	Energy Block 2 (\$/kWh)	\$0.1381	n/a	n/a	n/a
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEN11	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy (\$/kWh)	\$0.1076	\$0.1092	\$0.1020	\$0.948
	Demand peak season (\$/kW/mth)	\$0.00	\$0.50	\$0.99	\$1.49

Tariff	Charging Parameter	2017	2018	2019	2020
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.12	\$0.25	\$0.37
NEE12	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy Block 1(\$/kWh)	\$0.1361	\$0.1648	\$0.1589	\$0.1531
	Energy Block 2 (\$/kWh)	\$0.1873	n/a	n/a	n/a
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEE20	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy - peak (\$/kWh)	\$0.2033	\$0.1902	\$0.1771	\$0.1638
	Energy - off-peak (\$/kWh)	\$0.0555	\$0.0555	\$0.0555	\$0.0555
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEN20	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy - peak (\$/kWh)	\$0.2033	\$0.1902	\$0.1771	\$0.1638
	Energy - off-peak (\$/kWh)	\$0.0555	\$0.0555	\$0.0555	\$0.0555
	Demand peak season (\$/kW/mth)	\$0.00	\$0.50	\$0.99	\$1.49
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.12	\$0.25	\$0.37
NEE21	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy - peak (\$/kWh)	\$0.1924	\$0.1863	\$0.1802	\$0.1741
	Energy - off-peak (\$/kWh)	\$0.0579	\$0.0579	\$0.0579	\$0.0579
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEN21	Fixed (\$)	\$135.93	\$135.93	\$135.93	\$135.93
	Energy - peak (\$/kWh)	\$0.1924	\$0.1863	\$0.1802	\$0.1741
	Energy - off-peak (\$/kWh)	\$0.0579	\$0.0579	\$0.0579	\$0.0579
	Demand peak season (\$/kW/mth)	\$0.00	\$0.50	\$0.99	\$1.49
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.12	\$0.25	\$0.37
NEE23	Fixed (\$)	\$125.93	\$125.93	\$125.93	\$125.93
	Energy - peak (\$/kWh)	\$0.2033	\$0.1876	\$0.1719	\$0.1563
	Energy - off-peak (\$/kWh)	\$0.0555	\$0.0555	\$0.0555	\$0.0555
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEE24	Fixed (\$)	\$115.93	\$115.93	\$115.93	\$115.93
	Energy - peak (\$/kWh)	\$0.0908	\$0.0757	\$0.0607	\$0.0457
	Energy - off-peak (\$/kWh)	\$0.0214	\$0.0214	\$0.0214	\$0.0214
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEE30	Fixed (\$)	\$0.00	\$0.00	\$0.00	\$0.00
	Energy - off-peak (\$/kWh)	\$0.0228	\$0.0228	\$0.0228	\$0.0228
	Demand peak season (\$/kW/mth)	\$0.00	\$0.00	\$0.00	\$0.00
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.00	\$0.00	\$0.00

Tariff	Charging Parameter	2017	2018	2019	2020
NEE31	Fixed (\$)	\$0.00	\$0.00	\$0.00	\$0.00
	Energy - off-peak (\$/kWh)	\$0.0228	\$0.0228	\$0.0228	\$0.0228
	Demand peak season (\$/kW/mth)	\$0.00	\$0.00	\$0.00	\$0.00
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.00	\$0.00	\$0.00
NEE32	Fixed (\$)	\$0.00	\$0.00	\$0.00	\$0.00
	Energy - off-peak (\$/kWh)	\$0.0228	\$0.0228	\$0.0228	\$0.0228
	Demand peak season (\$/kW/mth)	\$0.00	\$0.00	\$0.00	\$0.00
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.00	\$0.00	\$0.00
NEE55	Fixed (\$)	\$250.00	\$250.00	\$250.00	\$250.00
	Energy - peak (\$/kWh)	\$0.1924	\$0.1863	\$0.1802	\$0.1741
	Energy - off-peak (\$/kWh)	\$0.0579	\$0.0579	\$0.0579	\$0.0579
	Demand peak season (\$/kW/mth)	\$0.00	\$1.77	\$3.55	\$5.32
	Demand off-peak season (\$/kW/mth)	\$0.00	\$0.44	\$0.89	\$1.33
NEE52	Fixed (\$)	\$0.00	\$0.00	\$0.00	\$0.00
	Energy - peak (\$/kWh)	\$0.2352	\$0.2352	\$0.2352	\$0.2352
	Energy - off-peak (\$/kWh)	\$0.0987	\$0.0987	\$0.0987	\$0.0987
NSP56	Fixed (\$)	\$2,407.20	\$2,407.20	\$2,407.20	\$2,407.20
	Energy - peak (\$/kWh)	\$0.1292	\$0.1292	\$0.1292	\$0.1292
	Energy - shoulder (\$/kWh)	\$0.0923	\$0.0923	\$0.0923	\$0.0923
	Energy - off-peak (\$/kWh)	\$0.0435	\$0.0435	\$0.0435	\$0.0435
	Demand capacity (\$/kVa/mth)	\$1.66	\$1.66	\$1.66	\$1.66
	Demand critical peak (\$/kVa/mth)	\$2.76	\$2.76	\$2.76	\$2.76
NSP75	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.0568	\$0.0568	\$0.0568	\$0.0568
	Energy - shoulder (\$/kWh)	\$0.0282	\$0.0282	\$0.0282	\$0.0282
	Energy - off-peak (\$/kWh)	\$0.0172	\$0.0172	\$0.0172	\$0.0172
	Demand capacity (\$/kVa/mth)	\$4.13	\$4.13	\$4.13	\$4.13
	Demand critical peak (\$/kVa/mth)	\$6.87	\$6.87	\$6.87	\$6.87
NSP76	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.0651	\$0.0651	\$0.0651	\$0.0651
	Energy - shoulder (\$/kWh)	\$0.0389	\$0.0389	\$0.0389	\$0.0389
	Energy - off-peak (\$/kWh)	\$0.0292	\$0.0292	\$0.0292	\$0.0292
	Demand capacity (\$/kVa/mth)	\$4.39	\$4.39	\$4.39	\$4.39
	Demand critical peak (\$/kVa/mth)	\$7.31	\$7.31	\$7.31	\$7.31
NSP77	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.0774	\$0.0774	\$0.0774	\$0.0774
	Energy - shoulder (\$/kWh)	\$0.0209	\$0.0209	\$0.0209	\$0.0209
	Energy - off-peak (\$/kWh)	\$0.0105	\$0.0105	\$0.0105	\$0.0105
	Demand capacity (\$/kVa/mth)	\$4.63	\$4.63	\$4.63	\$4.63
	Demand critical peak (\$/kVa/mth)	\$7.71	\$7.71	\$7.71	\$7.71

Tariff	Charging Parameter	2017	2018	2019	2020
NSP78	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.0378	\$0.0378	\$0.0378	\$0.0378
	Energy - shoulder (\$/kWh)	\$0.0238	\$0.0238	\$0.0238	\$0.0238
	Energy - off-peak (\$/kWh)	\$0.0089	\$0.0089	\$0.0089	\$0.0089
	Demand capacity (\$/kVa/mth)	\$5.39	\$5.39	\$5.39	\$5.39
	Demand critical peak (\$/kVa/mth)	\$8.97	\$8.97	\$8.97	\$8.97
NSP81	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.0276	\$0.0276	\$0.0276	\$0.0276
	Energy - shoulder (\$/kWh)	\$0.0000	\$0.0000	\$0.0000	\$0.0000
	Energy - off-peak (\$/kWh)	\$0.0077	\$0.0077	\$0.0077	\$0.0077
	Demand capacity (\$/kVa/mth)	\$3.37	\$3.37	\$3.37	\$3.37
	Demand critical peak (\$/kVa/mth)	\$5.61	\$5.61	\$5.61	\$5.61
NSP82	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.0270	\$0.0270	\$0.0270	\$0.0270
	Energy - shoulder (\$/kWh)	\$0.0187	\$0.0187	\$0.0187	\$0.0187
	Energy - off-peak (\$/kWh)	\$0.0097	\$0.0097	\$0.0097	\$0.0097
	Demand capacity (\$/kVa/mth)	\$3.11	\$3.11	\$3.11	\$3.11
	Demand critical peak (\$/kVa/mth)	\$5.19	\$5.19	\$5.19	\$5.19
NSP83	Fixed (\$)	\$5,149.43	\$5,149.43	\$5,149.43	\$5,149.43
	Energy - peak (\$/kWh)	\$0.1182	\$0.1182	\$0.1182	\$0.1182
	Energy - shoulder (\$/kWh)	\$0.0472	\$0.0472	\$0.0472	\$0.0472
	Energy - off-peak (\$/kWh)	\$0.0161	\$0.0161	\$0.0161	\$0.0161
	Demand capacity (\$/kVa/mth)	\$0.36	\$0.36	\$0.36	\$0.36
	Demand critical peak (\$/kVa/mth)	\$0.59	\$0.59	\$0.59	\$0.59
NSP91	Fixed (\$)	\$18,193.33	\$18,193.33	\$18,193.33	\$18,193.33
	Energy - peak (\$/kWh)	\$0.0188	\$0.0188	\$0.0188	\$0.0188
	Energy - shoulder (\$/kWh)	\$0.0000	\$0.0000	\$0.0000	\$0.0000
	Energy - off-peak (\$/kWh)	\$0.0060	\$0.0060	\$0.0060	\$0.0060
	Demand capacity (\$/kVa/mth)	\$0.22	\$0.22	\$0.22	\$0.22
	Demand critical peak (\$/kVa/mth)	\$0.36	\$0.36	\$0.36	\$0.36
NSP93	Fixed (\$)	\$146.28	\$146.28	\$146.28	\$146.28
	Energy - peak (\$/kWh)	\$0.0240	\$0.0240	\$0.0240	\$0.0240
	Energy - shoulder (\$/kWh)	\$0.0000	\$0.0000	\$0.0000	\$0.0000
	Energy - off-peak (\$/kWh)	\$0.0239	\$0.0239	\$0.0239	\$0.0239
	Demand capacity (\$/kVa/mth)	\$0.00	\$0.00	\$0.00	\$0.00
	Demand critical peak (\$/kVa/mth)	\$0.00	\$0.00	\$0.00	\$0.00
NSP94	Fixed (\$)	\$18,193.33	\$18,193.33	\$18,193.33	\$18,193.33
	Energy - peak (\$/kWh)	\$0.0191	\$0.0191	\$0.0191	\$0.0191
	Energy - shoulder (\$/kWh)	\$0.0000	\$0.0000	\$0.0000	\$0.0000
	Energy - off-peak (\$/kWh)	\$0.0147	\$0.0147	\$0.0147	\$0.0147

Tariff	Charging Parameter	2017	2018	2019	2020
	Demand capacity (\$/kVa/mth)	\$0.16	\$0.16	\$0.16	\$0.16
	Demand critical peak (\$/kVa/mth)	\$0.26	\$0.26	\$0.26	\$0.26
NSP95	Fixed (\$)	\$18,193.33	\$18,193.33	\$18,193.33	\$18,193.33
	Energy - peak (\$/kWh)	\$0.0197	\$0.0197	\$0.0197	\$0.0197
	Energy - shoulder (\$/kWh)	\$0.0000	\$0.0000	\$0.0000	\$0.0000
	Energy - off-peak (\$/kWh)	\$0.0144	\$0.0144	\$0.0144	\$0.0144
	Demand capacity (\$/kVa/mth)	\$0.34	\$0.34	\$0.34	\$0.34
	Demand critical peak (\$/kVa/mth)	\$0.57	\$0.57	\$0.57	\$0.57

The table below provides the definitions for the charging parameters used in AusNet Services' tariffs.

Table C.2:	Charging	parameters	used in	AusNet	Services'	tariffs

Charging Parameter	Definition
Fixed	A fixed periodic charge, expressed as an annual amount
Energy Block 1	The first 1020kWh of energy consumed in a quarterly period or prorated amount for any other period
Energy Block 2	The balance of energy used in a period
Demand kW – Peak Season	The maximum amount of energy consumed in a 30 minute period between 3:00PM and 9:00PM on a workday between December and March expressed in kW (= Metered energy * 2)
Demand kW – Off-Peak Season	The maximum amount of energy consumed in a 30 minute period between 3:00PM and 9:00PM on a workday between April and November expressed in kW (= Metered energy * 2)
Energy - Peak	Total Energy consumed between 7:00AM and 11:00PM Monday to Friday
Energy Shoulder	Total Energy consumed between 10:00AM and 4:00PM Monday to Friday
Energy - off-peak	Total Energy consumed between 11:00PM and 7:00AM Monday to Friday and all weekend
Demand capacity	The Maximum Transfer Capacity required at a customer's connection point for which the connection has been built to carry expressed in kVA.
Demand critical peak	The average of the five 30 minute maximum demands that occur between 3:00PM and 7:00PM AEDT on the five days nominated in advance by AusNet Services between 1 December and 31 March the following year.

C.3 Alternative Control Services indicative tariffs

The following tables contain AusNet Services' indicative tariffs for its Alternative Control Services for 2016. Tariffs are escalated by CPI for the remaining period covered by the TSS.

Table C.3: Proposed Alternative Control Connection Services Fees

Service	Business Hours	After Hours		
Routine new connections — customers<100amps				
Single Ø Overhead	\$403.69	\$487.89		
Single Ø Underground	\$210.30	\$269.59		
Multi Ø Overhead — Direct Connected Meter	\$430.05	\$519.74		
Multi Ø Overhead — CT Connected Meter	\$578.36	\$698.98		
Multi Ø Underground — Direct Connected Meter	\$313.23	\$389.01		
Multi Ø Underground — CT Connected Meter	\$452.53	\$562.02		
Install 95mm Overhead Service from LVABC	\$709.41	\$837.23		
Other fee based connection services				
Temporary supply connection and with co-incident disconnection	\$368.80	\$437.00		
Remote re-energisation and de-energisation	Provided in Chapter 17	Provided in Chapter 17		
Pre-approval of PV & small generator installation - <4.6kW	\$0	Not applicable		
Pre-approval of PV & small generator installation – >4.6kW to 15kW	\$147.79	Not applicable		
Pre-approval of PV & small generator installation – >15kW to 30KW	\$195.91	Not applicable		
Meter exchange upon solar connection	Applicable Exit Fee plus Service Truck Visit in the year the service is requested	Applicable Exit Fee plus Service Truck Visit in the year the service is requested		
Meter reconfiguration upon solar connection	\$27.07	Not applicable		

Table C.4: Proposed Ancillary Services (Fee Based)

Service	Business Hours	After Hours
Field officer visits	\$18.46	\$340.98
Service truck visits	\$368.80	\$437.00
Wasted Truck Visit	\$195.80	\$283.08
Meter equipment test – Single Phase	\$158.67	Not applicable
Meter equipment test – Single Phase Each Additional Meter at same site	\$59.11	Not applicable
Meter equipment test – Multi Phase	\$188.23	Not applicable
Meter equipment test – Multi Phase Each Additional Meter at same site	\$88.67	Not applicable

Source: AusNet Services

Table C.5: Quoted Alternative Control Services Charge-out Rates for 2016

Labour category	Service description	\$/hour rate – BH	\$/hour rate – AH
Labour—wages	Construction Overhead Install	\$113.95	\$138.40
Labour-wages	Construction Underground Install	\$111.30	\$135.17
Labour-wages	Construction Substation Install	\$111.30	\$135.17
Labour-wages	Electrical Tester Including Vehicle & Equipment	\$198.98	\$224.34
Labour-wages	bour—wages Planner Including Vehicle		Not applicable
Labour-wages	Supervisor Including Vehicle	\$152.97	Not applicable
Labour—design	Design	\$130.61	\$158.63
Labour—design	Drafting	\$100.36	\$121.89
Labour—design	Survey	\$118.23	\$143.59
Labour—design	Tech Officer	\$118.23	\$143.59
Labour—design	Line Inspector	\$113.95	\$138.40
Labour—design	Contract Supervision	\$118.23	\$143.59
Labour-design	Protection Engineer	\$130.61	\$158.63
Labour-design	Maintenance Planner	\$118.23	\$143.59

Table C.6: Operation, Maintenance Fee Based

Central					
Light Type	2016	2017	2018	2019	2020
Mercury Vapour 80W	\$43.71	\$46.97	\$50.22	\$53.44	\$56.61
HP Sodium 150W	\$100.31	\$105.19	\$110.09	\$115.00	\$119.87
HP Sodium 250W	\$101.25	\$106.18	\$111.13	\$116.08	\$121.00
Mercury Vapour 50W	\$66.88	\$71.86	\$76.83	\$81.76	\$86.61
Mercury Vapour 125W	\$64.26	\$69.04	\$73.82	\$78.55	\$83.21
Mercury Vapour 250W	\$106.31	\$111.49	\$116.69	\$121.89	\$127.05
Mercury Vapour 400W	\$110.36	\$115.73	\$121.13	\$126.53	\$131.89
HP Sodium 100W	\$107.33	\$112.55	\$117.80	\$123.05	\$128.27
HP Sodium 400W	\$143.78	\$150.77	\$157.81	\$164.84	\$171.82
T5 2X14W	\$48.92	\$49.02	\$49.79	\$50.95	\$52.35
T5 2X24W	\$53.53	\$53.49	\$54.20	\$55.34	\$56.75
North & East					
Mercury Vapour 80W	\$49.43	\$53.07	\$56.72	\$60.35	\$63.94
HP Sodium 150W	\$113.93	\$119.39	\$124.89	\$130.41	\$135.91
HP Sodium 250W	\$112.69	\$118.13	\$123.61	\$129.10	\$134.58
Mercury Vapour 50W	\$73.16	\$78.54	\$83.94	\$89.32	\$94.63
Mercury Vapour 125W	\$73.16	\$78.54	\$83.94	\$89.32	\$94.63
Mercury Vapour 250W	\$117.20	\$122.85	\$128.55	\$134.27	\$139.96
Mercury Vapour 400W	\$120.58	\$126.40	\$132.26	\$138.14	\$144.00
HP Sodium 100W	\$121.90	\$127.74	\$133.63	\$139.54	\$145.43
HP Sodium 400W	\$160.03	\$167.74	\$175.52	\$183.33	\$191.10
T5 2X14W	\$54.53	\$54.91	\$55.99	\$57.47	\$59.20
T5 2X24W	\$59.25	\$59.50	\$60.51	\$61.98	\$63.72

Appendix D – Transition details

Table D.1: AusNet Services' detaile	d transition strategy
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Tariff	Will AusNet retain this tariff?	Number of customers	Detailed commentary on transition strategy
NEE11	Yes	477,598	 In priority order. Reduce the second block rate so that it aligns with the first block rate within the period covered by the TSS, then Move the (aligned) anytime energy rates <i>towards</i> current off-peak tariff levels over the period covered by the TSS, then Move the energy rates to cost reflective levels in future TSS periods.
NGT11	No	1	Subject to Victorian Government policy, AusNet Services proposes to close this tariff, and transfer customers to NEE11.
NSP11	No	6	AusNet Services proposes to close this tariff, and transfer customers to NEE11, due to the small number of customers currently on this tariff.
NEN11	Yes	1	 This tariff is used as a shadow price for the billing of embedded networks, therefore it will be retained despite the small number of customers The energy rate will be aligned with NEE11.
NEE12	No	28,059	Customers on this tariff will be assigned to NEE21 due to the very close alignment between NEE12 and NEE21 (peak) rates and their respective fixed charges, and the relatively low revenue impact of providing NEE12 customers with an off-peak rate for 11pm-7am consumption.
NSP12	No	1	Due to the fact that this tariff only affects one customer, this tariff will be closed and the customer will be moved to NEE21.
NEN12	No	1	 This tariff is used as a shadow price for the billing of embedded networks, therefore it will be retained despite the small number of customers The energy rate will be aligned with NEE21.

Tariff	Will AusNet retain this tariff?	Number of customers	Detailed commentary on transition strategy
NEE20	Yes	50,200	There would potentially be significant customer impacts if these customers were moved onto NEE11, primarily due to the anytime tariff being materially higher than the current off-peak rate over the transition period, which would materially impact customers who consume a high proportion of their consumption during off-peak periods.
			Therefore, the transition approach is to:
			 Reduce the peak rate to align with the NEE11 rate within the period covered by this TSS, and then
			 Move that peak energy rate in concert with the change in the NEE11 anytime energy rate <i>towards</i> the off-peak levels of this tariff over the period covered by this TSS, and then
			 Move the energy rates to cost reflective levels in future TSS periods.
NSP20	No	1	Due to the fact that this tariff only affects one customer, this customer will be assigned to NEE20.
NGT26	No	16	Subject to Victorian Government policy AusNet Services proposes to close this tariff and assign customers to NEE20
NEN20	Yes	1	• This tariff is used as a shadow price for the billing of embedded networks, therefore it will be retained despite the low number of customers
			• The energy rate will be aligned with NEE 20.
NEE21	Yes	30,437	AusNet Services will:
			 Reduce the peak rate to align with the off-peak rate within the period covered by this TSS; then
			• Move the peak/off peak energy rates (which would be aligned) to cost reflective levels in future TSS periods.
NSP21	No	0	No customers, therefore remove
NSP27	No	0	No customers, therefore remove
NEN21	No	1	This tariff is used as a shadow price for the billing of embedded networks, therefore it will be retained despite the low number of customers

Tariff	Will AusNet retain this tariff?	Number of customers	Detailed commentary on transition strategy
NEE23	Yes	57,265	 AusNet Services proposes to: Reduce the peak rate so as to align with the NEE20 peak rate (which is being aligned with NEE11 rate) within the period covered by this TSS; and then Transition this rate towards current off-peak rates over the period covered by this TSS; then Transition peak/off peak (once aligned) to long term cost reflective levels in future TSS periods.
NSP23	No	1	Due to the fact that this tariff only affects one customer, this customer will be moved to NEE23.
NEE24	Yes	2,226	Retain due to the network benefits of diversifying load over a 12 hour period, however the off-peak time period will be adjusted to 9pm-9am so that there is no crossover between the time period over which a customer's peak demand is calculated, and this off-peak period.
NEE25	No	3	Due to the small number of customers, these customers will be transferred to NEE21 as the rates are closely aligned.
NEE30	Yes	106,379	 No transition necessary as: These off-peak rates are reasonably cost reflective, and The difference between the NEE11 block 1 rate and the peak rate applicable to NEE20 is significant, which would mean there is a risk of material customer impacts occurring if these customers were to be transferred to NEE20.
NSP30	No	1	Due to the fact that this tariff only affects one customer, this customer will be moved to NEE11.
NEE31	Yes	15,920	There would be material customer impacts if this tariff were to be removed, therefore it will be retained at around current levels, however the time period will move from 1-4 to 12-3pm, so as to not cross over into AusNet Services proposed peak demand period.
NSP31	No	1	Due to the fact that this tariff only affects one customer, this customer will be moved to the NEE equivalent.
NEE32	No	4,267	 Customers will be transferred to NEE24 due to the relatively close alignment between the: NEE24 peak rate and the NEE11 block 1 rate, NEE24 off-peak rate and this NEE32 rate, and NEE24 fixed charge and the combination of the NEE11 and this NEE32 fixed charge.

Tariff	Will AusNet retain this tariff?	Number of customers	Detailed commentary on transition strategy
NSP32	No	1	Due to the fact that this tariff only affects one customer, this customer will be moved to the NEE equivalent.
NEE40	No	1,995	Most customers are not technically eligible to be on this tariff, therefore, they will be moved to their appropriate tariff.
NEE51	No	3,430	Most customers are not technically eligible to be on this tariff, therefore, they will be moved to their appropriate tariff.
NEE55	Yes	1	The remaining customer on this tariff is located in the snowfields, and has quite unique usage characteristics (winter peaks). AusNet Services proposes to close this tariff and assign the customer to NSP56.
NSP55	No	0	This tariff will be closed as there are no customers assigned to it.