Issues paper

Tariff Structure Statement proposals

Victorian electricity distribution network service providers

December 2015

AUSTRALIAN ENERGY REGULATOR

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Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: (03) 9290 1444
Fax: (03) 9290 1457

Email: AERInquiry@aer.gov.au

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Glossary

Term	Interpretation
CoAG Energy Council	The Council of Australian Governments Energy Council, the policy making council for the electricity industry, comprised of federal and state (jurisdictional) governments.
Interval and smart meters	In this paper, used to refer to meters capable of measuring electricity usage in specific time intervals and enabling tariffs that can vary by time of day.
LRMC	Long Run Marginal Cost. Defined in the National Electricity Rules as follows: *"the cost of an incremental change in demand for direct control services provided by a Distribution Network Service Provider over a period of time in which all factors of production required to provide those direct control services can be varied".*
NEO	The National Electricity Objective, defined in the National Electricity Law as follows: *"to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—* *(a) price, quality, safety, reliability and security of supply of electricity; and* *(b) the reliability, safety and security of the national electricity system".*
NER	National Electricity Rules
Tariff	The overall name of a charge, e.g. "residential standard". Usually, the term tariff also implies an actual quantitative price. There might be different tariffs for different types of services, e.g. a customer with an electric hot water system might be placed on a 'residential controlled load' tariff.
Tariff structure	The design of how a tariff will charge, e.g. on a flat consumption volume, time of use, or demand basis. At times, some distributors might refer to these in different ways, including to refer to the components within a tariff (e.g. fixed, usage, demand)
Tariff charging parameter	The components within a tariff structure, e.g. a demand tariff structure with three parts (fixed, usage, demand). At times, some distributors might refer to these as being the manner in which components within tariff structures charge (e.g. a fixed charge is charged on a fixed dollar amount per day/year)
Tariff class	A class of retail customers for one or more services who are subject to a particular tariff or particular tariffs, i.e. how a distributor groups customers based on their cost reflective characteristics for the purposes of providing a tariff.

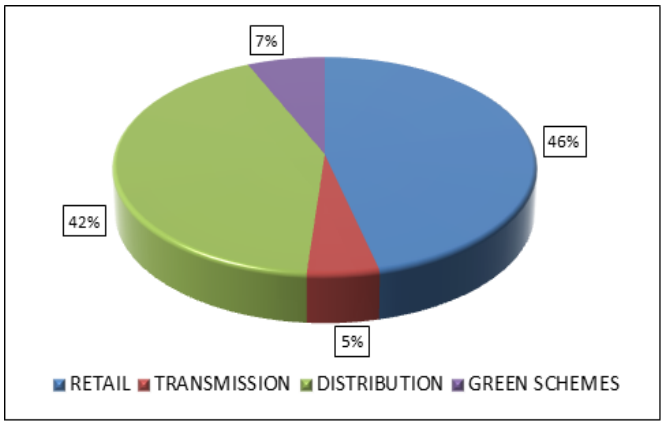
1 Overview

The need for tariff reform

The AER is overseeing how electricity distribution businesses intend to change the manner in which they charge to transport electricity through their grids. These changes respond to reforms endorsed by government and developed by the Australian Energy Market Commission into new rules. They were designed to produce prices that vary to better reflect the costs of providing electricity and thereby allow consumers to make informed consumption choices and manage their expenditure. Consumers will be better placed to consider whether to continue consuming or to switch off certain appliances at particular times, such as during periods of high demand, to manage their bills.

The prices (distribution tariffs) that distributors charge for transferring electricity through a poles and wires network are not directly faced by end consumers but instead by energy retailers who then put various cost elements together in energy plans they offer customers.

Figure 1: Residential customer retail bills, Victoria 2015-16 forecast.[1]



The distribution charge is only a component of the overall price that consumers are charged in their bill by their energy retailer. A retail price also includes the costs of producing electricity in power stations and other service costs. However, distribution is a significant component as shown in figure 1, forecast to represent up to 42 percent of an average residential customer bill in Victoria.

Distribution tariffs have to date largely been flat—that is, the charge does not vary according to the time in which electricity is used. The charge has been based on the total electricity used over a given period. This is despite the costs for distributors being largely driven by key points in time when network demand reaches its maximum or peak. These are typically on hot summer days when air-conditioners are running and industry is operating. Networks are built and replaced to reliably meet their maximum demand. Until about 15 years ago, most residential consumers had fairly similar usage patterns over the day, week and year. Generally their maximum demand was roughly proportional to their total energy use.

The new rules were a response to changes in the way in which electricity is being used. In the past 15 years the pattern of demand for electricity has changed, as air conditioners have become more affordable and their use in homes increased. Consumers using relatively more of their electricity at peak times impose greater demand on the network. The network needs to be built to meet this higher peak demand. This has been a major factor driving electricity price rises in the recent past. These price rises in turn influenced a greater take–up of solar panels by households.

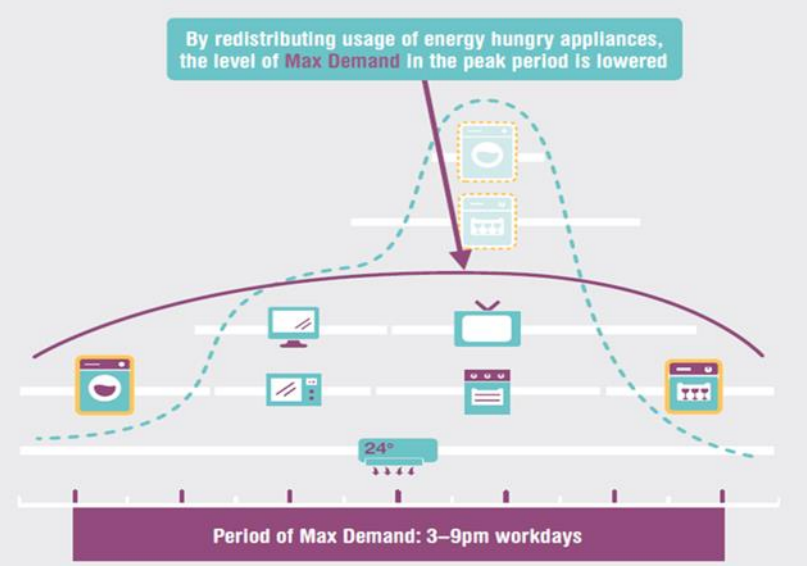
1 AER analysis of AEMC data. AEMC, *Final report: 2014 residential electricity price trends*, December 2014, p. 48.

Customers with solar panels have been able to use less electricity from the network in total, even though they might still rely on the network to meet their demand at peak times when the solar panels are not producing. Meeting this peak demand has still meant a continuing need for more network investment even though individual customers may be using overall less electricity from the network. It is now also likely that some consumers will change their pattern of use by installing battery storage at their premises. The increased popularity of electric vehicles may also lead to greater pricing and investment issues for the networks.

The aim of these tariff reforms is to give consumers price information that better reflects their use of the network. With this information, customers have the knowledge and incentive to choose appliances and electricity plans that will lower the cost of the electricity services they use. Improving price signals can help to guide investment and use of new and emerging technologies, such as electric vehicles, batteries and solar panels. This will mean that new network investment will be scaled to a level of peak demand capacity that is desired by consumers and allow them to better control their energy costs.

Current tariffs provide no opportunity or reason for consumers to use less electricity during peak times to manage their bills. Moving towards tariffs that take account of a customer's use of electricity during periods of peak demand will make pricing for electricity fairer.

Figure 2: Impact of switching appliance use during maximum demand window.[2]



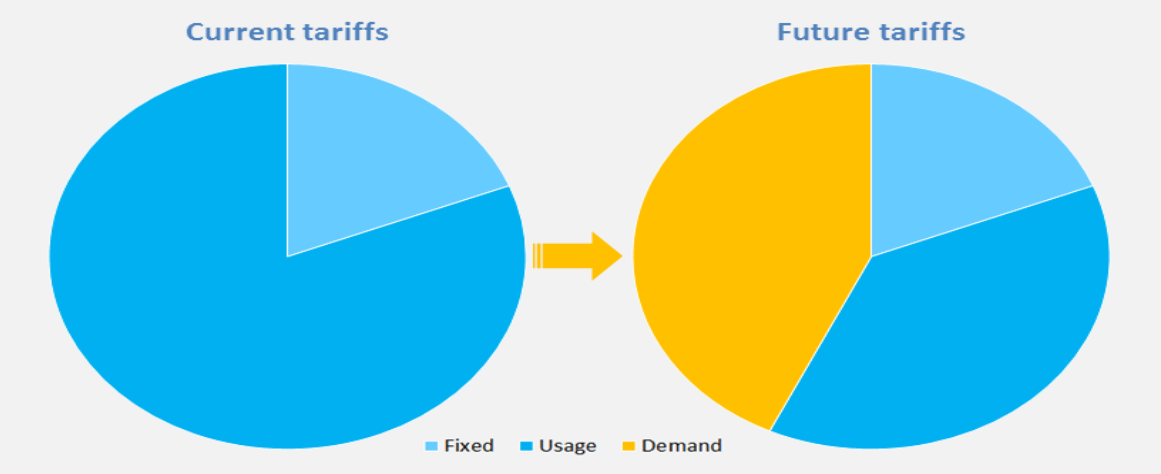
Those who use electricity at peak times will pay for it, at rates that better reflect the impact their high use places on delivering electricity at those peak times. Those who change their use (including as demonstrated in figure 2) so they use less power at peak times and more at off–peak times will benefit due to lower network prices operating during non-peak times.

The new tariff rules require distributors to set out their tariff approaches in a new document, the Tariff Structure Statement (tariff statements). Our role is to assess the tariff statements to make sure they comply with the new rules. In these tariff statements, the Victorian distributors have responded to the reform challenge by proposing changes to their tariffs for residential and small–medium businesses. Principally, they propose to introduce demand tariffs, as a step toward charging to take account of a customer's peak–time demand. Changing tariff approaches affects how customers pay for network costs, but does not allow distributors to earn more revenue overall from its customers.

2 United Energy, *Tariff Structure Statement proposal,* p.32.

Victorian distributors have greater capabilities to develop tariffs that vary with times of peak demand due to the availability of smart meters. Currently, their tariffs typically comprise of a fixed charge that does not vary, and a usage component that varies according to how much electricity is used over a period of time. The distributors propose to introduce a third component into their tariffs, a 'demand tariff'. The demand tariff component is based on the highest 30 minutes of a customer's use in a given month. Summer months are charged at a higher rate, and the tariff only applies at certain times and on weekdays. Figure 3 illustrates the general move from two part to three part tariffs, taken from CitiPower and Powercor's proposals for residential customers. There are some specific differences between each distributors proposals, covered in more detail in section 3 and appendix 1, but this is representative of the changes proposed.

Figure 3: Composition of tariff structures - Current and proposed (CitiPower & Powercor)[3]



The demand tariff will charge differently during certain times, days and months in order to reflect when the network is under most stress due to peak demand. These periods are referred to as charging windows. To simplify their tariff offerings, Victorian distributors have all proposed the same charging windows. In this paper a key question we raise is how closely these charging windows actually reflect each distributor's circumstances, that is, when their networks are under most stress. If the charging windows are significantly misaligned with when these stress periods occur, customers may be encouraged to reduce their use of electricity at times when this does not greatly reduce network costs.

The three part tariff is largely the standard offering being proposed by distributors, and the demand tariff component the standard means of reflecting peak driven costs. However, there might be customers who can and want to shift even more of their energy usage away from peak to off–peak times. These customers might be willing to have retail plans that charge even more at peak times, but charge even less in off–peak times than the standard rate being proposed, allowing them to make further savings. This raises a question as to whether distributors should also make available other, more cost reflective options that customers could opt–into (via their retailers) where they see benefit. We are interested in stakeholder views on distributors offering a menu of tariff options which send stronger price signals in addition to their standard demand tariffs. Further, whether these additional offerings alleviate any customer impact concerns (discussed below).

3 Citipower, *Tariff Structure Statement proposal*, p. 3.

Understanding and managing impacts

For customers (and retailers) to understand the benefits from these new tariffs or any other optional tariffs, it is important that expected impacts of tariffs are clearly set out in tariff statements. The Victorian statements might need to include more targeted explanation of how the tariffs impact on bills for particular customer types. These statements should include information that customers and retailers require to understand and have greater predictability on the impacts of new tariffs. This includes how their bills might change if a customer changes their usage with the use of new appliances or by having a different electricity meter. Customers might then be better able to relate their own situation with the information presented and decide whether they would be better off with a different energy plan. We recognise though, that this will ultimately be part of the retailer's role in selling services and products that customers want and can understand.

While a move to more cost reflective tariffs is the aim of the new rules, any changes in the way tariffs are constructed also requires consideration of the effects on end–use consumers. Consumers have invested in appliances such as solar panels and air–conditioners and designed their business operations on the basis of current and past charges. The Victorian distributors are cognisant of this. They have mostly responded in their tariff statements by making the move to the demand component relatively gradual, i.e. gradually increasing the level of the demand tariff over time, and allowing existing customers to opt–out in the first year. This is explained in more detail in section 4. We'd like to explore what might be the reasonable length of this transition period and whether it is appropriate for customers to be permitted to opt–out in the context of the goal of creating fairer and more cost reflective prices.

The success of these reforms will also depend on retailers ensuring that customers can deal with the impact of new tariffs. This will involve seeing to what extent competition between retailers in offering packages that customers want can be relied on to manage bill impacts. Consumer interests might not be well served if retailers cannot package a network tariff into electricity plans with varying degrees of exposure to peak pricing. Retailers are familiar with the need to manage customer impacts as they already manage the impact on their customers of changing wholesale market prices for electricity produced by generators.

Issues paper and AER assessment process

This issues paper is the first step in our assessment and consultation process. The paper is organised into the sections indicated below, and intends to:

- Scan the key themes arising from the Victorian proposals.
- Raise specific questions for stakeholders on the matters summarised here and explored in more detail in the main paper and in technical appendices.
- Focus on changes distributors propose to their tariffs. We do not comment on charges for large businesses where no changes are being proposed in these statements.

Section	Topic
Determination background	Background: industry change, cost drivers, and how pricing is part of a distributor's overall plan in managing its network. An explanation of the rules and our role in assessing a distributor's compliance with these rules.
Cost reflectivity of tariffs	The new tariff designs and our observations on these proposals.
Customer impacts of tariffs	The distributors' identification of customer impacts of their tariffs and their proposed approaches to manage the transition to more cost reflective tariffs. This includes our observations on the proposals.
Appendix 1: Proposed tariffs	Details the tariffs being proposed by Victorian distributors.
Appendix 2: Defining & linking costs to customers	How distributors identified their forward looking costs, residual costs and apportioned these costs to customers by allocating customers into different groupings. This includes our observations on the proposals.
Appendix 3: AER customer impact analysis	Sets out some limited analysis on customer impacts performed by the AER using a small sample set of data to illustrate the effects of new demand tariff approaches.
Appendix 4: Pricing rules	Lists the rule requirements applying to distribution pricing.
Appendix 5: Questions for stakeholders	Lists all questions raised in this paper.

We will review how distributors complied with the new pricing rules in deciding if to approve the proposed tariff statements. While we welcome any submissions on the distributors' proposals, we encourage written submissions on the issues identified in this paper. Our key milestones are set out below. Stakeholders are also encouraged to attend our public forum for the Victorian statements, on 14 December 2015.

Milestone	Date
Victorian distributors submitted proposed tariff statements	25 September 2015
AER publishes issues paper	3 December 2015
AER public forum on proposals	14 December 2015
Stakeholder submissions due on issues paper	20 January 2016
AER draft determination on proposed tariff statements	22 February 2016
Victorian distributors submit revised proposed tariff statements	29 April 2016
AER final determination on proposed tariff statements	29 July 2016

2 Determination background

Reform process

The requirement on distributors to prepare a Tariff Structure Statement arises from a long process of reform to the National Electricity Rules (the rules) governing distribution network pricing, set out in table 1 below. The purpose of the rules is to empower consumers by:

- Providing better signals—tariffs that reflect what it costs to use electricity at different times so that customers can make informed decisions on how much to use and have the opportunity to better manage their bills.
- Transitioning to greater cost reflectivity—requiring distributors to explicitly consider the impacts of tariff changes on customers, and engaging with customers (and their representatives) and retailers in developing tariff proposals.
- Managing future expectations—providing guidance for retailers, customers and suppliers of services such as local generation, batteries and demand management by setting out the distributor's future tariff approaches. This allows different parties the opportunity to understand the approaches and how to respond. The tariff statements must set out the structures (form) of network tariffs that distributors intend to charge retailers. This includes their rationale and the approach to their implementation.

Victorian distributors are the first to submit their tariff statements to the AER for review. Our role is to oversee whether distributors complied with the rules. Tariff statements for non–Victorian distributors will be assessed at a later stage.

Our review concerns the structure of proposed tariffs. While tariff statements are accompanied by indicative tariff levels (the dollar amount) our review of the tariff statements will not decide on the tariff levels. Tariff levels are determined by our revenue determinations and set through an annual tariff process. Annually, we review how distributors applied the revenues set in determinations to the tariff structures set out in their tariff statements. Changes in tariffs reflected in the tariff statements will not allow distributors to earn more revenue in total.

Table 1: Milestones in distribution pricing reform and implementation for Victorian distributors

Reform milestones	Date
AEMC recommends reforms to distribution pricing—Power of Choice review	November 2012
Governments propose rule changes to the AEMC	September 2013
AEMC makes final determination on new pricing rules—enacting proposals into specific rules applying to distributors	November 2014
Victorian distributors submit proposed tariff statements	September 2015
AER publishes final determination on Victorian statements.	29 July 2016
Distributors submit annual prices complying with tariff statements	30 September 2016
New tariffs take effect	1 January 2017

Industry context

The electricity industry in Australia is undergoing an era of significant change. Technological innovation is driving increasing availability and ranges of services, devices and means by which consumers can engage with energy markets in new ways. Households and businesses can now not only consume electricity but generate and store their own electricity. Further, their appliances can increasingly interact with and be controlled by devices such as smart meters or other devices that might automate their use of electricity.

Technological advancement can empower consumers to make new choices but this alone will be insufficient to ensure consumers pay no more for electricity than necessary. If consumers are given prices that better reflect their use of the network, they are more likely to invest in appliances and services that will lower the cost of the services they chose.

Increased air–conditioner use in past years has had significant implications for upgrading network capacity, with higher costs for all customers. Some of this might not have happened if customers had an incentive to purchase more efficient and controllable appliances. If we don't improve price signals to guide investment and use of new and emerging technologies such as electric vehicles, batteries and solar panels, we may face excessive network investment or customer expenditure when there are lower cost alternatives to meet customers' needs.

Signalling network costs

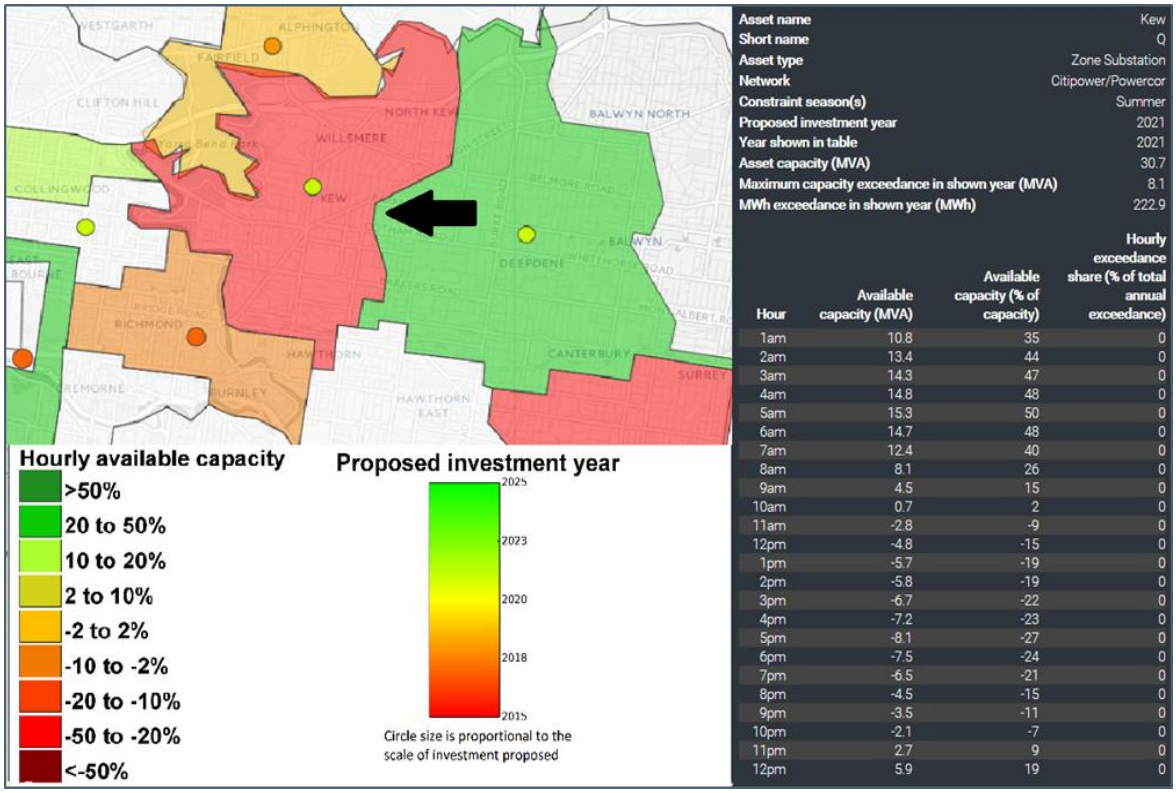
The tariff statement process focusses on improving the cost reflectivity of the distribution tariff component of the retail price that customers are charged by their retailer. The process of linking prices to network cost drivers will likely evolve over a longer period than the four years over which these tariff statements will apply. There is significant complexity that needs to be overcome. As noted earlier, distribution costs are not simply determined by calculating total volumes of electricity consumed—the main basis of past tariffs. Instead, there is a time and location dimension to cost drivers. Networks are built with set capacity levels to meet the *maximum demand* at a given point in time.[4] Further it is not necessarily the maximum demand on the entire network that matters. If it were, a single price and single charging window would be sufficient to signal efficient network use and future investment.

What mostly drives network investment is the capacity of individual assets (e.g. terminal and zone substations, transformers) at peak demand times. Each asset will have differing spare capacity and can experience maximum demand at different times, days or months. A distributor's decision to spend money adding capacity or the timing and size of replacing these assets will be driven by the specific time and location in which maximum demand occurs. This is demonstrated in the Network Opportunity Maps available on the Australian Renewable Energy Mapping Infrastructure website, shown in figure 4.[5]

4 Maximum demand is sometimes called peak demand. For the purposes of this issues paper, the terms are interchangeable.

5 These maps are accessible on: ['http://nationalmap.gov.au/renewables/'].

Figure 4: Network Opportunity Maps—sample area, Kew.[6]



Asset name	Kew
Short name	Q
Asset type	Zone Substation
Network	Citipower/Powercor
Constraint season(s)	Summer
Proposed investment year	2021
Year shown in table	2021
Asset capacity (MVA)	30.7
Maximum capacity exceedance in shown year (MVA)	8.1
MWh exceedance in shown year (MWh)	222.9

Hour	Available capacity (MVA)	Available capacity (% of capacity)	Hourly exceedance share (% of total annual exceedance)
1am	10.8	35	0
2am	13.4	44	0
3am	14.3	47	0
4am	14.8	48	0
5am	15.3	50	0
6am	14.7	48	0
7am	12.4	40	0
8am	8.1	26	0
9am	4.5	15	0
10am	0.7	2	0
11am	-2.8	-9	0
12pm	-4.8	-15	0
1pm	-5.7	-19	0
2pm	-5.8	-19	0
3pm	-6.7	-22	0
4pm	-7.2	-23	0
5pm	-8.1	-27	0
6pm	-7.5	-24	0
7pm	-6.5	-21	0
8pm	-4.5	-15	0
9pm	-3.5	-11	0
10pm	-2.1	-7	0
11pm	2.7	9	0
12pm	5.9	19	0

Integrated network pricing, planning and management

Demand growth can be met by expenditure on the network, purchasing demand management services, or by sending price signals that encourage retailers, other service providers or customers to control customers' demand. Therefore, tariff statements should be firmly placed within this broader context of seeking the optimum way to meet customers' needs. In doing so, it is important to recognise the limits of what might be achieved with price signals and indeed those in this initial round of tariff statements. This can indicate the role for other measures to deal with localised issues, including demand management. This focus will be enhanced in subsequent tariff statements which will be submitted together with revenue proposals.

Reform requirements

The AER will review if a proposed tariff statement can be approved as compliant, by considering wide–ranging rules that distributors must apply in developing their proposals. A summary of the rules is set out below and appendix 4 lists the exact rules.

Tariff cost reflectivity—promoting efficient price signals

The application of the pricing rules is intended to promote the National Electricity Objective (NEO) which refers to promoting efficient usage of and investment in electricity services for the long term interests of consumers.

6 This map displays a planned investment for a sub-station in 2021, and times in which this asset is claimed to exceed its capacity if the investment doesn't proceed. The colours represent available capacity at points in time that are selected in the maps. This image captures information for 2pm, when this asset is forecast to exceed capacity by 20 percent in 2021. The maps include disclaimers indicating that data is still only based on samples and its accuracy is dependent on information provided by third party data custodians and shouldn't be relied on in place of independent research and professional advice.

This objective not only applies to usage and investment on the network, but applies to the total system of meeting consumer needs, including customer investment in appliances and services located within a customer's premises.

The pricing principles set out a more specific objective of improving the efficiency of price signals as reflected in the Network Pricing Objective (NPO)—more precisely, tariffs that a distributor charges to provide services to a customer should reflect the distributor's efficient costs of service delivery to that customer. Achieving improved tariff cost reflectivity is not an end in itself. Rather it is a means to achieve efficient usage of and investment on the network and in electricity services to power appliances (e.g. solar panels, electric vehicles, battery storage etc), in the long term interests of consumers as guided by the NEO. Where tariffs do not reflect network costs, customers make decisions which although in their private interests, might not result in the most efficient outcomes for the whole industry.

The NPO is a high level statement. There are potential degrees of cost reflectivity, with stronger price signals involving greater complexity. As network costs are driven by time and location specific factors (i.e. areas where the network is constrained), prices that vary over time and by location would be the most cost reflective. The NPO appears to consider a possible range of cost–reflectivity extending up to this most cost reflective point. At the same time, the pricing principles require distributors and AER to be cognisant of the impact of such changes on consumers. In our view this implies that tariff statement proposals should show movement along the cost reflectivity spectrum, as technology, consumer understanding and other practical constraints are addressed over time.[7] This means that our assessment of compliance with the NPO is likely to be an iterative process, recognising emerging changes in the market and the individual circumstances of the distributors.

Achieving greater tariff cost reflectivity as required by the NPO, involves several technical processes, outlined in table 2 below. The aspects of the Victorian proposals covering these points and our observations are set out in section 3 and appendix 2.

Table 2: Likely steps in defining and linking costs to customers

Step	Approach
(1) Defining costs & causation	• How a distributor identifies its forward looking costs (driven by peak demand and network constraints) and a causation link to customers. The latter involves determining how to classify customers based on their characteristics and how these drive network costs, and therefore how to apportion network costs to different customer classes. • These issues affect the cost quantum that should be reflected in a tariff. This process is set out in the rules pertaining to Long Run Marginal Cost (LRMC), tariff classes, and tariff assignment and reassignment. • On these issues we also see potential scope to consider various degrees of cost reflectivity. The LRMC rules refer to consideration of the time and location varying nature of cost drivers. Forward looking costs driven by peak demand and network constraints / congestion could be identified at a whole network or specific asset (or

7 A key issue is whether a customer has a meter capable of measuring use in time intervals, i.e. an interval or smart meter. For residential customers, these meters currently are largely unavailable outside of Victoria. For other distributors, such meters are mainly available for business customers.

Step	Approach
	some other means). The more specific the approach, the more it reflects the circumstances of particular customer groups or parts of the network.
(2) The design of tariffs	• The design of tariffs used to reflect forward looking costs—the tariff structure (e.g. time of use, critical peak price, demand tariff etc) and charging parameters (e.g. fixed charge, usage consumption charge, usage demand charge). • The rules are silent on the particular design that should be preferred, allowing scope for distributors to own their approaches and innovate over time. The rules only require that a structure must be based on the LRMC of serving particular customers, and that the method of doing so has regard to the time and location varying nature of cost drivers. Again, in our view these rules motivate pricing that increasingly moves to reflect the specific time and location of network congestions—moving along the cost reflectivity spectrum.
(3) Recovering residual costs	• How distributors seek to recover non–forward looking costs (residual costs required by distributors to make up their total required revenues) from tariffs designed primarily to reflect forward looking costs. These are treated differently because they do not vary with future demand patterns. • This also affects the cost quantum recovered in tariffs. While signalling forward costs is a goal, residual costs could be a significant component of the total tariff quantum. The objective in recovering these costs is minimising distortions to the forward looking signal and therefore distortions in consumer behaviour.[8] In light of technological changes noted earlier, the prospect of inefficient disconnection from the network due to excessive fixed charges should be considered.
(4) Stand-alone & avoidable costs	• Setting required revenue to be recovered from groups of customers to be between the standalone and avoidable cost of service provision to these customers. This is with the aim of addressing inefficient cross-subsidies.

Impacts of tariffs—assessing impacts of transitioning

The rules require distributors and the AER to apply the pricing principles in a manner cognisant of the impact of tariff structure changes on consumers. These requirements are a means to an end. In developing tariffs and proposed tariff statements to better reflect costs, distributors may depart from efficiency goals but only to the extent required to:[9]

1. Manage the impacts of transitioning to these new tariffs—by considering transitioning to new tariffs over several years, the extent to which customers can choose the tariff to which they are assigned, and whether customers can mitigate the impact of changes in their tariffs through their usage decisions.
2. Ensure tariffs can be reasonably understood—with regard to information provided in their consultation in developing tariff statements and the type and nature of retail customers.

8 Clause 6.18.5(g)(3) requires that total costs be recovered in a way that minimises distortions to price signals for efficient usage that would result from tariffs that comply with the pricing principle pertaining to Long Run Marginal Cost.

9 Clause 6.18.5(c) of the NER.

3. Comply with jurisdictional obligations—there may be jurisdictional requirements that distributors must comply with. No such obligations currently exist in Victoria.

We consider that these rules are framed with the intent of managing the speed of moving to new tariffs such that retailers and consumers do not face significant price changes, can prepare and thereby be more likely to make efficient choices on electricity use.

Impacts and understandability are key subjects of the stakeholder consultations that distributors undertake. Approaches to manage pricing volatilities developed via these discussions are more likely to be customised to the circumstances of individual distributors and their stakeholders. It might be desirable to move more quickly to cost–reflective pricing for distributors where capital and operating expenditure are growing rapidly.[10] We will review the extent to which the distributors' approaches to manage impacts have:

- Addressed retailer and consumer representatives' key concerns.
- Been employed in a way that contributes to achieving the NPO. The NPO is a useful check on the expected costs and benefits that should be evaluated in circumstances where there might be apparent conflicts between achieving cost reflectivity and managing impacts.

Expectations management—clarifying future tariff structures

- The tariff statement process serves a key role in improving transparency, expectations and predictability for retailers and consumers on future tariff strategies of distributors. This will partly be achieved by locking in the tariff structures distributors can offer, to those publicised in the tariff statements—for the duration of a regulatory period.[11] For Victorian distributors this is from 2017 to 2020.[12] This greater predictability provides an opportunity for consumers (with their retailers) to consider how to respond to new tariffs to mitigate their impact. Once approved, we annually review that distributors have only applied the approved tariff structures and that their levels (quantum) meet the price controls set in the respective distribution revenue determinations.
- Tariff statements also need to include information that retailers and consumers require to understand the long–term strategies (tariff structures and charging parameters offered) proposed by distributors. This also includes their rationale (how tariffs are to be set), how these apply to customer circumstances and how they might change over a regulatory control period (how customers will be grouped into tariff classes and assigned / reassigned to different tariffs).[13] This information allows retailers, service providers and customers to plan investments in appliances and services, with greater predictability of costs.

10 This contrasts to other approaches, such as fixing quantitative limits on price levels within legislation.

11 Tariff statements require information on: tariff classes, policies and procures for assignment and reassignment of customers to tariffs, tariff structures, charging parameters for each tariff, descriptions of approaches taken to setting each tariff. See appendix 4.

12 There are some allowed exceptions. Under NER Clause 6.18.1(c), a distributor is allowed to introduce a new tariff not factored into their tariff statement, as long as it is below a materiality threshold—either a 0.5 percent annual revenue threshold for an individual tariff, or a 1 percent cumulative threshold for a combination of tariffs. This allows distributors the flexibility to introduce limited niche, or trial tariff solutions, the need for which might arise during the regulatory control period.

13 These requirements are set out in Clause 6.18.1A of the NER, as set out in appendix 4.

3 Cost reflectivity of Victorian tariffs

Distributors have designed tariffs that differ from their current practice. Tariff design is the end product of a process by which distributors define their future and residual costs and attempt to link future costs to customers that cause them by using more electricity at peak times. These more technical aspects are discussed in appendix 2.

3.1 Proposed tariff design

The Victorian distributors did not propose any changes for commercial and industrial customers (except CitiPower and Powercor do propos to charge large commercial customers based on KVA rather than KW but this was not outlined to any significant degree in their respective tariff statements). The proposed changes concern tariff structures for residential customers and small–medium businesses.

Current approaches:

- Each distributor offers numerous tariff structures for residential and small–medium business customer classes.
- Tariff structures are typically multi–part, comprised of various charging parameters, including a fixed / standing charge and a usage charge which is either based on a combination of a flat consumption (i.e. price doesn't vary with time in which energy is consumed) or a time of use (ToU) consumption charge.
- The residential network ToU tariffs have been offered on an opt–in basis. This was associated with the Victorian Government mandating the structure of those tariffs by networks and retailers. Customer take up has been minimal.

Proposed approaches:

All distributors propose changing the multi–part tariffs for residential and small–medium business customers by introducing a maximum demand charge. There are slight variations between distributors, but all propose tariff structures with three charging parameters:

1. Fixed / standing charge (either fixed $ / annum[14] or c / day[15]).
2. Usage: Consumption / energy charge—energy consumed over a billing period (c / kWh)
3. Usage: Demand usage charge (either $ / kW / month or c / kW / day). Table 3 summarises how the demand component is proposed to operate.

14 Proposed by Jemena and Ausnet.

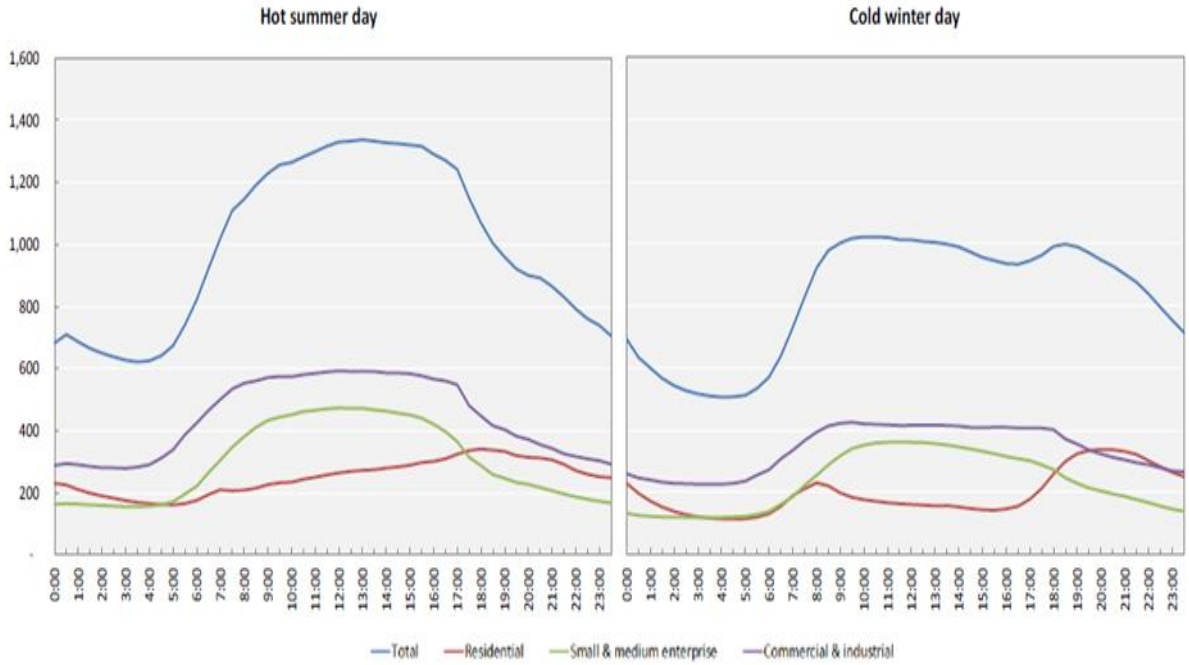
15 Proposed by Citipower, Powercor and United Energy.

Table 3: Features of proposed demand tariff component

Issue	Approach
Phasing-in demand	The demand component is introduced by a gradual ramp up in the charge level (see section 4) while the consumption / energy usage components decline.[16] The demand component is not proposed to completely replace the consumption usage component. However, demand would ultimately be the main signal of forward–looking costs.[17]
Charge calculation	A customer's demand is calculated in 30 minute intervals over the course of a month, and the interval with the highest or maximum level of demand is used as the electricity quantity to be multiplied by a price. Every month, the calculation is reset.
Charging windows	The price applies at certain times and days, and is higher in certain months. Charging windows signal network peak / maximum demand periods. This is distinct from potential network congestion / constraints. Not all distributors provided data supporting their chosen windows. Figure 5 displays an example approach from CitiPower. It aggregates demand of different customer classes on a hot summer and cold winter day, allowing correlations to be drawn with the proposed time of day charging windows. Residential customers—for all distributors, the charge applies as follows:[18] • Time: from 3–9 pm. • Day: Monday–Friday (excluding weekends & public holidays). • Month: High period (Dec–Mar), low period (Apr–Nov). Small–medium businesses—the charge applies as follows: • Time: 10am–6pm for CitiPower, Powercor, United Energy;[19] 10am–8pm for Jemena,[20] 3–9pm for AusNet Services.[21] • Day: Monday–Friday (excluding weekends & public holidays) for all distributors. • Month: For distributors excluding Jemena, high period (Dec–Mar), low period (Apr–Nov); Jemena, only 1 period measured as highest maximum demand and sum of maximum demand for previous month.[22]

16 Jemena also proposed to gradually decrease their fixed charge as well as their consumption / energy usage charge.
17 Appendix 1 sets out further detail on the approaches proposed by each distributor.
18 CitiPower, *Tariff Structure Statement proposal*, p. 35; Powercor, *Tariff Structure Statement proposal*, p. 35; Jemena, *Tariff Structure Statement proposal*, p. 31; AusNet Services, *Tariff Structure Statement proposal*, p. 15 & United Energy, *Tariff Structure Statement proposal*, p. 31.
19 CitiPower, *Tariff Structure Statement proposal*, p. 36; Powercor, *Tariff Structure Statement proposal*, p. 36 & United Energy, *Tariff Structure Statement proposal*, p. 31.
20 Jemena, *Tariff Structure Statement proposal*, p. 33.
21 AusNet Services, *Tariff Structure Statement proposal*, p.15.
22 Jemena, *Tariff Structure Statement proposal*, Appendix A, p. 5.

Figure 5 CitiPower - Network demand profile (total MW by time of day)[23]



The three part tariff with a demand component is the standard option proposed for each distributor's residential and small–medium business customers:

- Residential customers—some distributors are offering other optional tariffs that might send more localised or time–specific signals of network demand. For example, CitiPower, Powercor and United Energy propose the option of customers opting into a fully costed demand tariff, not subject to the gradual cost ramp–up.[24]
- Small–medium businesses—AusNet Services is proposing a Critical Peak Price on an opt–in basis, to send more accurate signals of network peak events.[25]
- Locational tariffs are not offered, on grounds of complexity for consumers and retailers. However, some distributors wish to accompany demand tariffs with localised rebates for customers in areas where the demand tariff alone might insufficiently manage demand.[26]

3.2 AER observations

Proposed new tariffs

The NPO requires that tariffs reflect costs, and these are driven by network congestions at peak demand times. There are various tariff options that distributors might seek to develop, as displayed in figure 6. The exact cost reflectivity of each option and how they influence efficient investment and usage decisions at peak times vary according to assumptions.

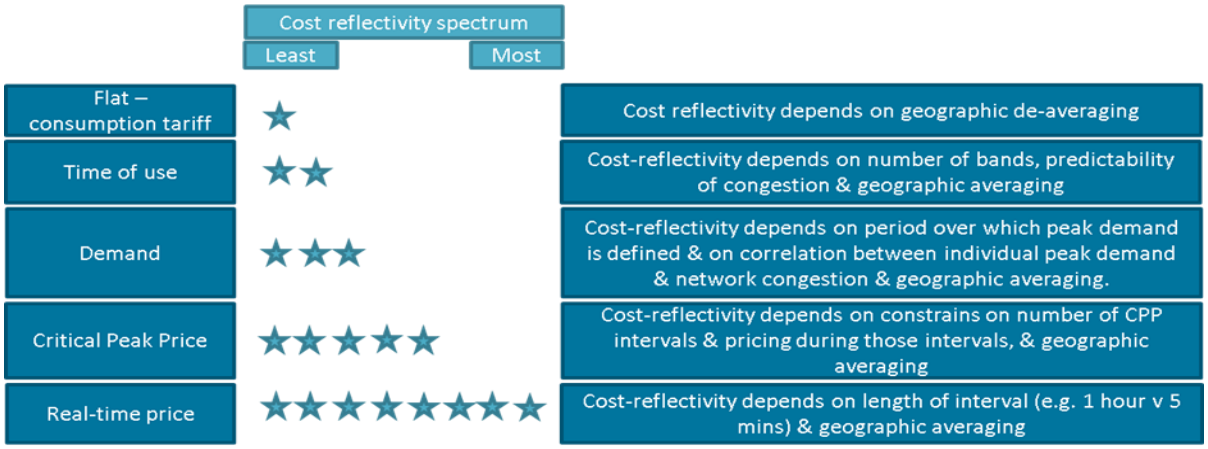
23 CitiPower, *Tariff Structure Statement proposal*, p. 31.

24 CitiPower, *Tariff Structure Statement proposal*, p. 41; Powercor, *Tariff Structure Statement proposal*, p. 41 & United Energy, *Tariff Structure Statement proposal appendices*, p. 21.

25 AusNet Services, *Tariff Structure Statement proposal*, p. 14.

26 United Energy, *Tariff Structure Statement proposal*, September 2015, p. 34; Powercor / CitiPower, *Tariff Structure Statement proposal*, p. 34; Jemena, *Tariff Structure Statement proposal*, p. 36.

Figure 6: Examples of different tariff options



For large customers (commercial and industrial), the Victorian distributors have not proposed any changes in tariffs. We are interested in exploring if further improvement in these tariffs is possible and any practical constraints to doing so.

For residential and small–medium business customers, the key apparent change is the introduction of a demand tariff component, to thereby offer a three part tariff. In our view:

- Including a demand tariff appears a legitimate and sound step to move along the cost reflectivity spectrum as the NPO and pricing principles require. These tariffs depart from charging based on consumption volumes as these factors do not drive network costs, and instead aim to target times of anticipated network stress from peak demand.
- These tariffs reduce prices at off–peak times but charge more at peak times.[27] This gives customers an opportunity to consider switching off appliances, drawing on battery devices or switching their business operating shifts during these times to manage bills.

Demand tariff charging windows

A challenge in designing demand and other time varying tariffs, is in linking these to times of anticipated network stress. Not doing so, risks creating a tariff that might over signal congestion at most points in the network and under–signal congestion at those (few) locations where a required network investment might be in prospect. We examined the proposed demand tariff charging windows, the issues they target and how well they do so:

- To set charging windows, distributors examined the times, days and months when they have recorded periods of highest demand. They then calculated averages across the whole network. However, network congestion is local in nature:
    - As covered earlier, it is not necessarily the occurrence of maximum demand periods that drive networks to spend but rather, whether these periods mean that particular assets (e.g. sub-stations) will become constrained. A desire to avoid constraints and outages drives network expenditure.
    - It might be possible to calculate future numbers of zone substations or terminal stations anticipated to become constrained over a forecast period, and the times, days and months of demand that drive constraints on these assets.[28]

27 The demand tariff will charge a higher rate in peak months and lower in non-peak months, and will only charge during peak times of the day.

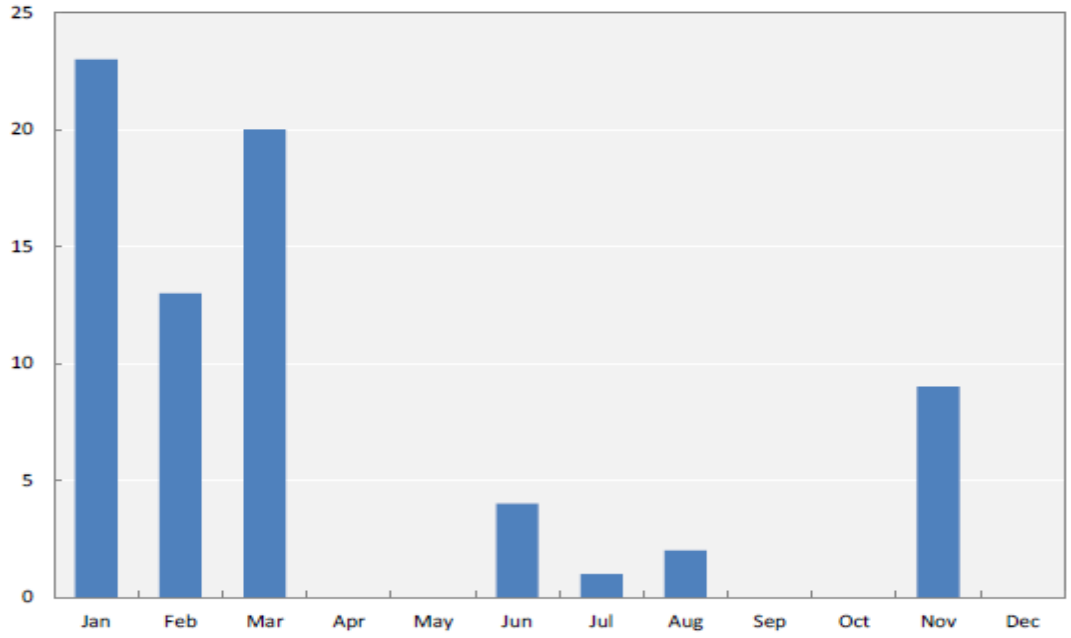
28 Limited examples of this information are available in the Network Opportunity Maps discussed earlier, required in distribution

The results might suggest alternative charging windows with higher charges at different times to what is currently proposed. This is distinct from using anticipated congestions to derive the quantum of the charge, a far more complex exercise.

- In subsequent tariff statements, information on network congestion might help develop more sophisticated tariffs that deal more precisely with the times and locations of network stresses.

- The proposed tariff statements contain insufficient information to definitively examine how closely the proposed charging windows correlate to periods of highest demand for each network.[29] We do not have firm views on the statistical approaches to use in calculating high demand periods. However, tariff statements should include data disaggregated by time, day and month and ideally by customer classes if charging windows vary by customer class. Based on available data, there appears some disconnect between the charging windows and when peaks occur for the distributors:
  - CitiPower and Powercor's proposal to not include November in the high charge window and to not charge on weekends suggests that they may not target periods when maximum demand on individual terminal and zone substations has in the past been significant. This is observed from figure 7.[30]
  - United Energy's proposal to not charge on weekends and public holidays means that its demand tariff will not apply to its significant number of weekend and holiday homes. These network locations still experience peak demand stresses.[31]

Figure 7: CitiPower - Terminal stations: number of annual maximum demand observations by month (2007-14)[32]



29 annual planning reports and contained in business cases accompanying revenue proposals to us.

30 At the time of publishing this issues paper, the AER is seeking further information from distributors.

31 This data show that based on historical data, 9 periods of maximum demand were observed across its terminal stations during November, see CitiPower, *Tariff Structure Statement proposal*, p. 28.

32 United Energy intends to offer rebates in such cases, as discussed further below in this section, see United Energy, *Tariff Structure Statement proposal*, p. 34.

CitiPower, *Tariff Structure Statement proposal*, p. 28.

We will explore the prospect of significant periods of maximum demand occurring for distributors outside of the charging windows. If this were the case, consumer responses to charges could have uncertain long term benefits as these would not correspond to network cost drivers. This might not achieve the NPO. A complication here is that it appears Victorian distributors have aligned their charging windows with their peers, to aid understanding and thereby manage tariff impacts. We intend to further explore the rationale employed. We are also interested in stakeholder views on how to reconcile this apparent conflict between the customer impact considerations and cost reflectivity in the long term interests of consumers. This includes the nature and magnitude of claimed benefits of aligned charging windows.

Some distributors such as United Energy want to partly mitigate this concern via other strategies for network areas where its demand tariff might have a small effect. Not charging on weekends and public holidays means the demand tariff might not signal network costs, such as to holiday homes used on these times. United Energy intends to also offer more pointed locational demand management in these areas via rebates.[33]

Price and non-price alternatives

A key first step in effectively signalling prices should be to set charging windows that reflect what is occurring in each distributor's network. However, these approaches might still insufficiently signal stresses on localised network pockets. Locational pricing might address these issues, but this has not been proposed by Victorian distributors, responding to apparent stakeholder concern on complexities and impacts. We accept that complex locational pricing might be more relevant to subsequent tariff statements. However, the current statements would still benefit from more clearly explaining the exact nature of impediments (of a technological, customer information, impact or retail nature) to pricing by location, providing:

- some basis upon which to review progress in subsequent statements, against the apparent NPO and LRMC requirements to consider locational cost drivers.
- a clearer long–term vision from distributors with respect to pricing approaches as a means of managing network demand.

The current lack of locational pricing might mean greater relevance for demand management options to deal with significant localised issues. United Energy's proposal is one example.[34] Outlining demand management options distributors intend to procure in a tariff statement would provide a means to closer integrate network planning, management and pricing.

Single standard vs menu options

Victorian distributors have responded to the NPO's cost reflectivity goal by providing similar answers. That is, a three part tariff with a new demand component, offered as the standard across residential and small–medium business customers. However, there might be a case for offering a menu of optional tariffs, including some that send more accurate signals of network costs at particular times and locations. Competition between retailers could potentially drive various tariffs being offered to their customers, with more or less exposure to wholesale market movements or network peaks. Retailers with a customer swilling to take on more exposure to peak signals, could approach distributors to access such an option from a menu.

33 United Energy, *Tariff Structure Statement proposal*, p. 34.

34 United Energy, *Tariff Structure Statement proposal*, pp. 34-35.

The tariff statement might therefore include a two–speed approach to tariffs, shown in figure 8.

Figure 8: Two–speed tariff offerings

The only examples of this approach that we observe include:

- CitiPower, Powercor and United Energy plan to offer on an opt–in basis, a full demand tariff without the gradual cost ramp–up transition.[35] Such options are appropriate. If some customers are able and willing to take on greater levels of cost reflectivity they should not be prevented from doing so. This would also not inhibit innovation by retailers.
- Some distributors flag possible trials of different tariffs during the regulatory period for which the tariff statement applies.[36] There is scope for distributors to introduce new tariff options after 2017, without triggering a need to re–submit a tariff statement for AER approval. Given the expectations management objective, it might be beneficial for these options to be more closely considered and incorporated into the tariff statement. However, we also acknowledge that distributors should have flexibility to innovate over time.

Questions for Stakeholders

Proposed new tariffs

(1). What are the advantages and disadvantages for setting charging windows for demand tariffs to reflect the times at which constraints or periods of maximum demand are likely to occur? What practical data should distributors rely upon?

(2). What are the advantages and disadvantages of aligning charging windows across distributors?

(3). Do the tariff statements effectively present pricing strategies within the broader context of network planning and demand management options?

(4). What are the advantages and disadvantages of charging differently according to the location in which network constraints are forecast to occur?

Single standard vs menu of options

(5). What are the advantages and disadvantages of distributors offering a menu of tariff options to send stronger price signals in addition to their new demand tariffs?

(6). To what extent would offering a menu of tariff options on an opt–in basis alleviate any customer impact concerns?

(7). Are there any practical impediments to distributors setting out optional tariffs in their statements?

35 CitiPower, *Tariff Structure Statement proposal*, p. 41; Powercor, *Tariff Structure Statement proposal*, p. 41 & United Energy, *Tariff Structure Statement proposal appendices*, p. 21.

36 United Energy, *Tariff Structure Statement proposal,* p.33 and Jemena, *Tariff Structure Statement proposal*, pp. 34-36.

4 Impacts of Victorian tariffs

Distributors have consulted extensively with their consumer and retailer stakeholders in developing approaches to manage the transition to more cost reflective tariffs. The approaches examined below are taken to be the summary outcomes of the consultations. We are interested in stakeholder views on whether these approaches have effectively addressed any concerns they raised with distributors, and any unresolved issues.

4.1 Victorian proposals

Impacts identified

Distributors broadly describe possible customer impacts of introducing a demand tariff:

- Customers with relatively flat or steady demand profiles are expected to benefit from the changes. Customers with relatively peaky or fluctuating demand profiles are expected to see higher bills.[37] However, this is assuming that customers do not alter their usage in response. The goal of more cost reflective pricing is to empower consumers to make informed choices about their demand.
- The statements do not set out detailed information on expected quantitative impacts on groups of customers, or the use of, and investment in, different appliances. The information that is presented (table 4) appears to rely on differing assumptions about the base versus scenarios that are being compared.

Table 4: Summary of impacts identified by distributors

Business	Identified impacts
Jemena[38]	• Noted it analysed impacts of various possible transition scenarios, other than the one it proposed in its statement. It is difficult to ascertain the impact of its proposal. • One scenario assumed all customers faced a demand charge costed at its full level (without any cost ramp up transition) in 2018. The findings were that 5 percent of customers would face bill increases of over $100 in 2018 going from current tariffs.
CitiPower & Powercor	• Noted undertaking analysis but could not identify a specific customer group made materially worse off over others resulting from the introduction of demand tariffs.[39]
AusNet Services	• Noted analysis indicating that by the end of their transition period, moving to demand tariffs would have close to 100 percent of customers facing a lower network charge than they have today. These figures are sensitive to decreases in revenue incorporated into their forecast as a result of their revenue proposal. It is difficult to isolate the impact of the demand tariff.[40] • Also displayed analysis assuming customers alter behaviour in response to the demand tariff. It showed a case study of a customer with maximum demand of

37 AusNet Services, *Tariff Structure Statement proposal*, p.22 & United Energy, *Tariff Structure Statement proposal*, p.9.
38 Jemena, *Tariff Structure Statement proposal*, p.48.
39 CitiPower, *Tariff Structure Statement proposal*, p.41, Powercor, *Tariff Structure Statement proposal*, p.41.
40 AusNet Services, *Tariff Structure Statement proposal*, p.22.

Business	Identified impacts
	7.5kW before any behavioural change. If the customer moved washing machine and dishwasher use to a period outside the maximum demand charging window, and switches off air conditioners too, they could reduce their maximum demand by approximately 3.5kW. Applying the 2018 indicative summer demand charge, this behaviour change could result in a $40 annual saving.[41]
United Energy	• Noted they undertook customer impact analysis but did not identify a specific group made materially worse off over others resulting from their demand tariffs.[42] • Modelled a scenario based on no change to their previous revenue. The findings were that 50 percent of customers would be better off on the residential demand tariff. Further, 80 percent of customers would face impacts of +/- $30.[43] • The 50 percent of customers deemed to be negatively impacted under the residential demand tariff, were deemed to be 'peaky' customers with below average load factors (i.e. average kW / maximum kW).[44]

Impact management

Victorian distributors have employed a range of approaches to manage the impact on customers in transitioning to tariffs with a demand component, described in table 5.

Table 5: Impact management approaches proposed by Victorian distributors

Approach	Description
Cost ramp-up	The costs recovered by the tariff component that charges based on a customer's maximum demand will be gradually ramped up. As displayed in Figure 9, each distributor has different ramp–up speeds and different start and end points for the transitions. Distributors indicated that their demand transition would be as follows: • AusNet services will continue to increase their demand component by 20 percent annually until 2022, completing their transition in 6 years.[45] • United Energy will complete their transition in 4 years.[46] • CitiPower and Powercor will continue to increase their demand component by 20 percent annually until 2021, completing their transition in 5 years.[47] • Jemena will introduce their demand component at 50 per cent in 2018 and increase it by 10 percent annually until 2020. The transition will be completed by 2025 (9 years).[48]

41 AusNet Services, *Tariff Structure Statement proposal*, p. 26.

42 United Energy, *Tariff Structure Statement proposal*, p. 40

43 United Energy, *Tariff Structure Statement proposal*, p. 14.

44 United Energy, *Tariff Structure Statement proposal*, p. 15.

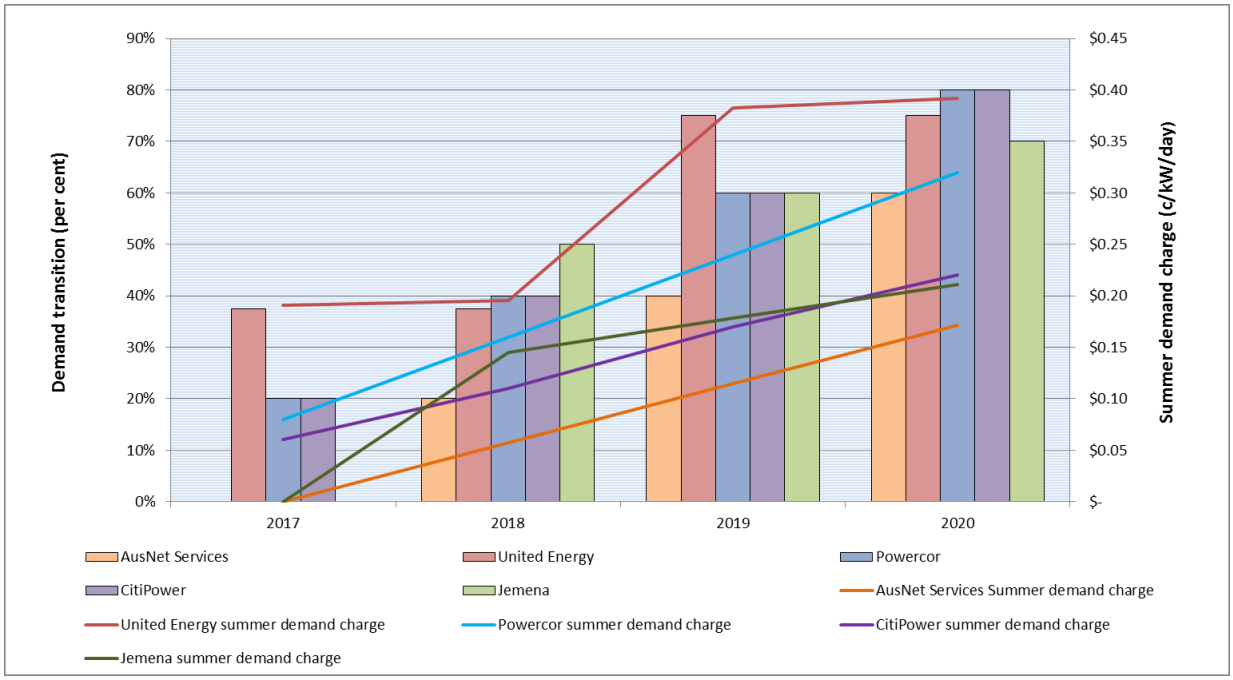
45 This counts the first year, when their new demand tariff component will be set at zero. AusNet Services, *Tariff Structure Statement proposal*, p. 16.

46 Only intends the demand tariff to recover 75 percent of their forward looking costs at the end of the transition, see United Energy, *Tariff Structure Statement proposal appendices,* p. 13.

47 CitiPower, *Tariff Structure Statement proposal*, p.42, Powercor, *Tariff Structure Statement proposal*, p. 42.

Approach	Description
Opt-in and opt out of cost reflectivity	• All distributors other than AusNet Services[49] will allow customers to opt–out of the new demand tariff. This option will exist for 12 months and those that opt–out can remain on a non–demand tariff for the duration of the tariff statement period. • CitiPower, Powercor and United Energy will offer customers the option of opting–in to a full demand tariff (not subject to a transition) if they choose.[50] • It is unclear how distributors intend customers to opt in or out of tariffs in practice (directly or via a retailer) and what information will be provided to inform choices.
Tariff alignment	• All distributors note they have responded to stakeholder concerns by choosing particular charging windows and aligning these windows across their peers. • The demand tariff charging windows (time, day, month) for residential customers are consistent across all Victorian distributors. • All distributors will not apply the demand tariff to weekends and public holidays.

Figure 9: Demand tariff transitions: rate and percentage of demand component reflected in tariff structures by year



4.2 AER observations

The role of retailers

Examining impacts on end–use customers by considering network tariffs is difficult as this is only one component of a customer's retail bill. The actual impact on a customer will depend on

48 Includes the first year when the new demand tariff component will be set at zero. Jemena, *Tariff Structure Statement proposal*, p. 43.

49 AusNet Services, *Tariff Structure Statement proposal*, p. 15.

50 CitiPower, *Tariff Structure Statement proposal*, p. 43, Powercor, *Tariff Structure Statement proposal*, p. 43 and United Energy, *Tariff Structure Statement proposal appendices*, p. 21.

the range of tariff options that retailers make available. Retailers could decide to simply pass on the network tariff structure (e.g. a three part tariff with a demand component) or package it into a range of offerings for customers.

The impact of changes in tariffs on customers might be mitigated if retailers can offer customers a range of options. If so, caution might be needed to not excessively slow the transition to greater cost reflectivity. Doing so will also not be in the interests of consumers, delaying their ability to consider the costs of their usage decisions.

We do not seek to pre–judge how retailers design their competitive offers. However, we want to explore if there are any constraints that retailers might face in being able to take the network tariffs and turn these into options suitable to their customers' needs. That is, do retailers consider they have sufficient tools to undertake this exercise? Or will they be limited in their ability to offer options other than the three part network tariff with a demand component? If the latter, customer impacts might be more identifiable. It is not immediately apparent what feedback retailers have provided distributors on these issues.

Assumed impacts of network tariffs

If retailers simply passed on distributors tariffs, examining impacts becomes simpler. Changes in tariffs will impact on existing customers who have made investments in assets (e.g. air-conditioning, hot water heating, swimming pools, solar panels etc) based on existing tariff structures. For example, introducing tariffs with a demand component might mean that customers with solar panels and who still consume electricity during peak times when their panels are not producing might pay more than they currently do. While this is a feature of moving to more cost reflecting pricing, customers have made long term decisions to purchase appliances on the basis of tariff structures that are now proposed to change. As far as practical, existing customers should have access to an appropriate means of transitioning to new tariffs.

Distributors have proposed various approaches to manage the transition. To evaluate these approaches and for customers to understand their options on how to respond to tariffs to manage their bills, tariff statements need to clearly identify expected impacts. While distributors appear to have communicated some of their expectations in their consultation, this information is not extensively provided in the tariff statements. More clearly examining impacts on different customer classes, on investment and usage decisions for different appliances, and identifying those expected to be better or worse off could help with the following:

- To suggest if there is a case for having a faster transition to new tariffs. Customers who consider that they will be better off might prefer to opt into more cost reflective tariffs.
- To allow customers to understand how a tariff will operate—one of the rule requirements. Customers could then determine the merit in altering their behaviour at peak times. This might be something that customers consider with their retailer or energy services company. For example, some retailers are currently offering retail plans with devices such as batteries. In responding to demand tariffs, customers could store energy and withdraw it in the period when the demand tariff applies (e.g. 3–9 pm for residential customers).

In the absence of further information, we undertook our own analysis to provide an example of how such data might be useful. We used data requested from CitiPower, based on a random sample of 20 residential customers. Our results are summarised in table 6 below, with details on the method employed and further observations set out in appendix 3. The analysis was for

residential customers only, comparing results of moving from current tariffs to the most cost reflective option designed by each distributor—the tariff at the end point of their transitions. These results do not consider customer responses to the prices.

Table 6: Summary results of AER customer impact analysis - Residential customers, sample data.

Result	Comment
Bills will not necessarily be higher on average	CitiPower, Powercor, Jemena and AusNet customers will face similar annual network bills under the proposed tariffs with a demand component, compared to their existing tariff structure. United Energy's customers could on average face higher annual bills of approximately $51 compared to their existing tariff structure if they make no changes to their pattern of use.
Customers with flat demand profiles tend to benefit from the transition to demand tariffs.	The discount offered on the off–peak consumption usage component outweighs the peak demand tariff component being introduced. These customers might be examples of those that might wish to opt–in to more cost reflective tariff options than the standard being proposed by each distributor (subject to a cost ramp up transition).
Customers with higher than average consumption volumes tend to benefit from the transition to demand tariffs.	This is due to the shift towards higher demand charges and lower usage charges.
Customers with a peaky demand profile (high demand over peak times, lower usage in other times) could be worse off from moving to demand tariffs.	The demand tariffs charge higher rates at peak times when these consumers use more energy. These might be examples of customers who would benefit from switching off their appliances at peak times, or drawing on devices such as batteries.

Transition methods—managing impacts

To examine if the proposed transition management approaches are likely to comply with the customer impact rules and achieve the NPO, we considered a number of possible objectives. We want to hear from stakeholders on our observations (set out in table 7) and whether we have accurately characterised the relevant objectives. In our view these include:

1. Managing price increases for end customers—if we assume retailers will simply pass on the new network tariffs, which might not hold in practice.
2. Minimise cross–subsidies during the transition—to avoid inequitable treatment of customers in moving to greater cost reflectivity.
3. Allowing time for retailers—to integrate new network tariffs into their business systems and decide how to package these along with other components to derive price offerings that customer's desire.
4. Allowing time for consumers—to be informed of new tariffs and what this means for them. Consumers will need sufficient information to enable them to understand the impact of the new tariffs and to enable them to take action to mitigate the impact of new tariffs.

5. Allowing choice of greater levels of cost reflectivity and not constraining retailer innovation—customers willing and able face greater signals (via retailers) of network cost drivers should not be prevented from doing so.

Table 7: AER observations on transition approaches proposed by Victorian distributors.

Approach	AER observations

Opt-in and opt-out of cost reflectivity	• All distributors propose introducing a demand tariff component to improve cost reflectivity, by placing customers onto these tariffs rather than offering these as opt–in tariffs. This approach appears a sound way of introducing the need for greater cost reflectivity:
	  ○ This approach is being combined with a gradual ramp–up of the cost quantum recovered by new tariff components (discussed below).
	  ○ Experience in Victoria and observations made by some consumer representative groups[51] have noted how relying on opt–in arrangements for standard cost reflective approaches might significantly delay broad based tariff reform implementation.
	• All distributors (other than AusNet Services) will offer customers the ability to opt–out of the new demand tariff component. While this might minimise the impact of price increases to particular customers, it appears to treat customers inequitably in the move to cost reflectivity, maintaining existing cross–subsidies. As distributors propose to also apply a gradual cost ramp–up for the demand tariffs (discussed below), it is unclear if also allowing an opt–out option will generate benefits that outweigh potential costs of delaying tariff reform.

Opting into greater levels of cost reflectivity	• Some distributors do not appear to offer the ability for customers to opt–in to greater levels of cost reflectivity by offering other more sophisticated tariff options. However, CitiPower, Powercor and United Energy do propose allowing customers to opt into a full demand tariff not subject to a transition.[52] • As noted in Section 3, offering a menu of more sophisticated tariff options (if retailers value these on behalf of customers) could facilitate retailer innovation that might better meet the price signalling objectives of the pricing reforms.
Cost ramp–up	• All distributors plan to gradually ramp–up the cost quantum recovered by a demand tariff component, shown in Figure 9. They propose to complete their cost ramp up transition within 4-9 years. • Ramping costs appears an appropriate way to manage price changes during a transition while embedding the idea of charging based on maximum demand. • The proposed transition time allows customers to understand new tariffs and take action to mitigate these impacts. However, we want to explore the advantages and disadvantages of alternative transition periods. For example, a shorter period of 2–3 years might be sufficient to recognise various considerations: ○ Retailers would have sufficient time to incorporate network tariffs into their

51 Consumer Utilities Advocacy Centre, *Cost reflective pricing: Engaging with network tariff reform in Victoria*, June 2015, pp. 26-27.

52 CitiPower, *Tariff Structure Statement proposal*, p. 43, Powercor, *Tariff Structure Statement proposal*, p. 43;and, United Energy, *Tariff Structure Statement proposal appendices*, p. 21.

Approach	AER observations
	business systems and their retail plans. ○ This period might be sufficient to allow any communication activities to occur with respect to consumers. As noted in a report by one Victorian consumer representative group, CUAC, a period of 2 years might be sufficient to run any information campaigns that might be necessary.[53] ○ It would allow improved price signals to operate for a year prior to the next round of revenue proposals from the Victorian distributors.
Tariff alignment	• Aligning tariff design across distributors might lower burdens on retailers. Distributors suggested this will assist customers to better understand new tariffs. Further, the decision to not charge on weekends and public holidays appears driven by a concern about consumer willingness to alter usage at these times. • We want to explore the extent of possible stakeholder benefits from tariff alignment: ○ As discussed in section 3, our initial concern is if this alignment comes at the expense of tariff solutions suitable to each network's circumstances. If they do, the potential costs will need to be evaluated against possible customer impact benefits of tariff alignment. ○ This equally applies to the decision to not charge on weekends. We seek to explore the rationale. A customer's willingness to consume or unwillingness to alter behaviour should not be a relevant consideration in designing tariffs that contribute to achievement of the NPO. An exception may be for life support customers.

Questions for stakeholders

Customer impacts

(8). Do stakeholders consider that consumers will be able to understand the new tariffs and take action to mitigate their effects?

(9). Will retailers be able to offer customers a number of tariff offers, some of which might differ to the network tariffs being proposed? What are the advantages and disadvantages of them doing so?

(10). Are there other key issues concerning impacts of tariffs not identified in this paper? In particular:

(a) Are there matters that stakeholders raised with distributors and were inadequately addressed?

(b) Are there any other approaches to transition customers that should have been considered?

(11). Do stakeholders consider that the information presented by distributors in their consultations have been sufficient to allow you to examine the nature of impacts and how to respond?

(12). Have we accurately characterised the objectives of transition management, are there others?

(13). To what extent will approaches such as gradually increasing the level of the new demand

53 Consumer Utilities Advocacy Centre, *Cost reflective pricing: Engaging with network tariff reform in Victoria*, June 2015, p.27.

Questions for stakeholders

component in tariffs be sufficient to mitigate customer impacts in transitioning to more cost reflective tariffs?

(14). What are the advantages and disadvantages of the transition period (4–9 years) proposed by the distributors?

Appendix 1: Proposed tariff structures

The tables below summarise what each distributor proposes to offer new (and current) customers from 2017.[54] Each distributor might have other tariffs which would continue to be offered to current customers only. The demand charging components are those being included in tariffs to signal forward looking costs.

Jemena

For residential and small-medium business customers, Jemena propose to maintain their current tariff structure while introducing a maximum demand charging parameter into the majority of their tariffs.[55]

Jemena		Current charging components				Demand charging components	
		Fixed	*Consumption*			*Demand charge*	
			TOU	Flat		Flat	Seasonal
Residential	General purpose	✓		✓			✓
	Flexible	✓	✓				✓
	Off peak only		✓				
	Non-Demand	✓		✓			
Small/Med. business	General purpose	✓		✓		✓	
	TOU Weekdays	✓	✓			✓	
	Unmetered supply		✓				

Powercor

In the 2011–15 regulatory period, Powercor offered:

- 14 tariffs to their residential customers
- 5 tariffs to their small to medium business customer.[56]

They propose consolidating tariffs to three for each tariff class (residential and small-medium business) for the tariff statement period. While reducing the number of tariffs offered they are also introducing a demand charge component into standard tariffs for these customers.[57]

Powercor		Current charging components				Demand charging components	
		Fixed	*Consumption*			*Demand charge*	
			TOU	Flat		Flat	Seasonal
Residential	Standard	✓		✓			✓
	Non-Demand	✓		✓			
	Controlled load		✓				
Small/Med. business	Standard	✓		✓			✓
	Non-Demand	✓		✓			
	Unmetered supply		✓				

54 Jemena's table represents their 2018 tariffs as this is the first year they are introducing their demand charge.
55 Jemena, *Tariff Structure Statement proposal*, p. 30.
56 Powercor Network Tariff Schedule, [https://www.powercor.com.au/media/2242/powercor-2015-network-tariff-schedule.pdf].
57 Powercor, *Tariff Structure Statement 2017-20.* pp. 34-36. September 2015.

CitiPower

In the 2011–15 regulatory period, CitiPower offered:

- 12 tariffs to their residential customers
- 10 tariffs to their small–medium business customers.[58]

They propose consolidating tariffs to four for each tariff class (residential and small–medium business) for the duration of the tariff statement. While reducing the number of tariffs offered they will also introduce a monthly maximum demand charge component into their Residential standard, residential bulk, small business standard and small business bulk tariffs.[59]

CitiPower		Current charging components				Demand charging components	
		Fixed	*Consumption*			*Demand charge*	
			TOU	Flat		Flat	Seasonal
Residential	Standard	✓		✓			✓
	Bulk	✓		✓			✓
	Non-Demand	✓		✓			
	Controlled load		✓				
Small/Med. business	Standard	✓		✓			✓
	Bulk	✓		✓			✓
	Non-Demand	✓		✓			
	Unmetered supply		✓				

United Energy

United Energy proposes to reduce the fixed and consumption charges, while introducing a monthly maximum demand charge component into their tariffs for residential and small–medium business customers.

They currently offer a demand tariff along with a number of other options (time of use, standard consumption etc). Customers currently on the majority of the non-demand tariffs will be assigned to the residential seasonal demand and small business standard tariffs from 2017.[60]

United Energy		Current charging parameters				Demand charging parameters	
		Fixed	*Consumption*			*Demand charge(b)*	
			TOU	Flat		Flat	Seasonal
Residential	Seasonal Demand	✓		✓			✓
	Non-Demand	✓		✓			
	Unmetered supply		✓				
	Demand only(a)						✓
	Capacity(a)						✓
Small/Med. business	Standard			✓			✓

(a) Demand only and capacity availability = TBA.
(b) All tariffs with demand charge component have a minimum monthly demand charge.

58 CitiPower, Network Tariff Schedule: [https://www.powercor.com.au/media/2238/citipower-2015-network-tariff-schedule.pdf]
59 CitiPower, *Tariff Structure Statement 2017-20.* pp. 34-36. September 2015.
60 United Energy, *Tariff Structure Statement proposal*, p.31.

AusNet Services

Propose to introduce a maximum demand charge for residential and small–medium business customers from 2018. AusNet Services already offer tariffs based on critical peak demand for business customers, while offering other tariffs which include a combination of fixed, consumption and capacity charges.[61]

AusNet Services		Current charging components					Demand charging components		
		Fixed	*Consumption*				*Demand charge*		
			TOU	Block	Flat		Flat	Seasonal	Capacity	Critical peak
Residential	Small residential single rate	✓		✓				✓		
	Small residential two rate	✓	✓					✓		
	PV standard feed in tariff	✓	✓					✓		
	Small rate 5 day 8 to 8	✓	✓					✓		
	Dedicated circuit		✓							
	Dedicated circuit - afternoon boost		✓							
Small/Med. business	Small business two rate	✓	✓					✓		
	Critical peak demand multi-rate	✓	✓						✓	✓
	Unmetered supply		✓							

61 AusNet Services, *Tariff Structure Statement proposal*, pp. 14-17.

Appendix 2: Defining and linking costs to customers

Victorian proposals

Grouping and assigning customers

Distributors appear to have taken various steps to determine how to group customers based on their characteristics and the implications these could have on network costs, as follows:

- Customers are distinguished as to whether they are a residential or business customer. They are then grouped into tariff classes based on the voltage level of their connection to the distribution network (e.g. low or high voltage business). The end result is that customers are distinguished into the broad classes of residential, small–medium businesses, and commercial and industrial businesses.
- Further distinctions between customers are then made according to the type of meter installed and if it permits certain types of tariffs such as demand and time of use charges that require interval or smart metering.[62]
- Finally, the design of the proposed tariff (i.e. a demand tariff component) is relied on as the means of charging customers based on how their demand profile impacts network costs.
- Distributors did not include in their tariff statements their new procedures for assigning and reassigning customers from individual tariffs over time. As their tariff statements were submitted prior to the AER's preliminary revenue determination (29 October 2015), they propose to include their procedures after the AER's draft determination on the tariff statements (February 2016).

Forward and residual costs and causation links

To identify forward looking costs driven by peak demand and network constraints, distributors calculated their expected LRMC of providing network services as follows:

- All applied the Average Incremental Cost method to calculate LRMC because it relies on existing data and minimised administration costs compared to other methods.[63]
- For the forecasting period, while conclusive information is absent, most distributors appear to have calculated their LRMC over a ten year forecast horizon.[64] Most suggested that shorter periods left LRMC estimates too sensitive to specific spending measures, while longer periods provided insufficient additional benefit or generated significant uncertainty. The exception is Jemena who opted for a 20 year forecast.[65]

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62 Smart meters are provided to customers with annual consumption of less than 160 MWh. This was by government mandate through a 2007 Order in Council.

63 AusNet Services, *Tariff Structure Statement 2017–20*, October 2015, p. 37; United Energy, *Tariff Structure Statement–Appendices*, September 2015, p. 4; Jemena, *Tariff Structure Statement*, September 2015, p. E2; Powercor/CitiPower, *Tariff Structure Statement 2017–2020*, September 2015, p. 51.

64 United Energy, *Tariff Structure Statement–Appendices*, p. 5; Powercor and CitiPower, *Tariff Structure Statement 2017–2020*, September 2015, p. 51;

65 Jemena, *Tariff Structure Statement*, September 2015, p. E2; AusNet Services, *Tariff Structure Statement 2017–20*, October 2015, p. 37.

- On the exact costs input to LRMC calculations, it appears that approaches are aligned across most distributors. Distributors used expected future demand driven augmentation capital expenditure (augex) and related operating expenditure (opex), and appear to not include network replacement costs. In particular:
    - United Energy—demand driven augex, customer connections, overheads and opex rate of change.[66]
    - Jemena—growth related capex and opex.[67]
    - AusNet services—forecast growth augex and incremental forecast opex.[68]
    - Powercor and CitiPower—demand driven augex and opex.[69]
- For most distributors it is unclear if these costs were determined by calculating a LRMC by customer asset class (e.g. voltage level) or as a single figure across the whole network and apportioned to tariff classes using certain assumptions.[70] We are seeking specific details on these aspects from distributors.
- It is unclear how distributors used their LRMC to inform the design of tariffs and charging parameters and the rationale employed. As noted in section 3, the key driver in tariff design appears to be the anticipated times of network stress. While clarification is being sought, it appears most distributors have:
    - Allocated 100 percent of their LRMC to their proposed demand tariff component subject to a cost ramp-up transition over several years.[71]
    - Employed different approaches to recover their residual costs. This includes applying residuals to fixed charge components within tariffs, or to a combination of energy consumption and fixed charge components. Some distributors noted theoretical rationale of allocating residuals to fixed charges but allocated these to other charging parameters on equity grounds.[72] They noted that allocating all residuals to fixed charges would cause relatively large bill impacts for low demand customers.

AER observations

Defining and linking costs to customers

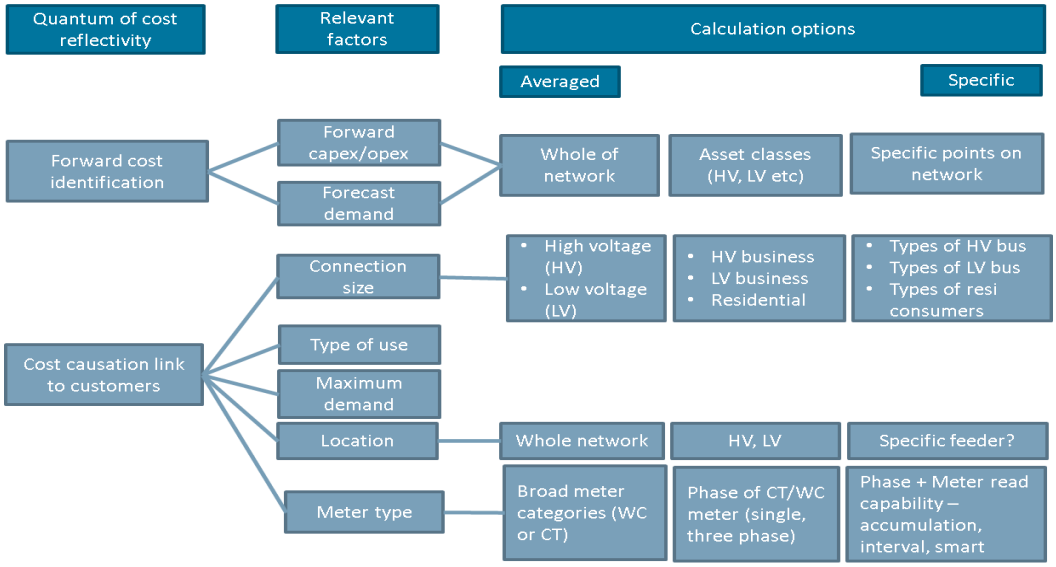
The rules list tariff class groupings, customer assignments / reassignments and identification of forward looking costs (LRMC) as distinct issues. These essentially concern the same process—how a distributor defines/identifies costs, determines which customers cause them, and how they should be charged. Therefore, we expect the same approaches applied across these issues. The rules on tariff classes and assignments both refer to the circumstances of a customer's usage. To comply with the NPO, decisions on how to group and assign customers should be based on how their demand influences the distributor's costs. These are the same considerations with respect to the process of identifying forward looking costs.

66 United Energy, *Tariff Structure Statement–Appendices*, p. 4.
67 Jemena, *Tariff Structure Statement*, September 2015, p. E2.
68 AusNet Services, *Tariff Structure Statement 2017–20*, October 2015, p. 36.
69 Powercor/CitiPower, *Tariff Structure Statement 2017–2020*, September 2015, p. 51.
70 Jemena's tariff statement indicates that its LRMC forecasts have been undertaken by asset class for each tariff class.
71 The exception is United Energy who opted to allocate 75 percent of their LRMC.
72 AusNet Services, *Tariff Structure Statement 2017–20*, October 2015, p. 45.

Victorian distributors have not proposed new tariff assignment and reassignment procedures in their statements. We recognise that these procedures typically comprise of other more administrative issues in notifying customers of reassignments and that these are based on broad principles set in our revenue determinations. Given the statements' expectations management objective, it is imperative for these to clearly elaborate on the exact circumstances that drive a customer being provided one tariff over another. This also includes where changes occur in a customer's type of connection or their demand profiles.

All proposals distinguish tariff classes by residential and business customers and in turn by a customer's voltage requirements. We might expect that if distributors can distinguish customers into residential, business and voltage levels then LRMC should be calculated individually for these groupings. At this stage, it is unclear for most distributors if LRMC was calculated at a whole network or specific level, and if distinctions made between customer types drove LRMC calculations or vice–versa. As shown in figure A1, various factors could drive this process. More specific approaches will mean that costs are more reflective of individual customer circumstances—as the NPO and LRMC rules appear to require over time as practical obstacles are addressed.

Figure A1: Possible factors to consider in identifying and linking costs to customers



Guidance from LRMC

The rules appear to require that approaches to deriving LRMC would influence the choice of tariff design.[73] It is unclear how distributors envisaged this occurring. It appears that at a broad level, as forward looking costs are driven by times when network stresses occur, the rationale is to recover LRMC from usage components within tariffs. That is, from the consumption and demand charging components rather than fixed components. However, the primary driver for the design of the tariff changes proposed by distributors appears to be their anticipation of the times, days and months where maximum demand is highest and network stresses are likely.

73 Clause 6.18.5(f) of the NER.

We note that there might legitimately be difficulties in relying on LRMC calculations to directly guide tariff design. It is arguable on theoretical grounds whether there is a direct relationship between LRMC and any one efficient tariff component—if it should be recovered via a demand, ToU, or fixed charge. However, we observe at least an indirect relationship:

- In deciding if to augment or replace a network asset, distributors must compare the costs of the investment to projected benefits. The projected benefits of a network augmentation are the reduction in the costs of congestion that arise as result of that augmentation.
- If distributors make efficient investment decisions then they will only invest if the reduction in congestion costs from the augmentation is larger than the cost of the investment.
- Under strong assumptions (which might not hold in practice) we can further observe that if the distributor makes efficient investment decisions, then its network will be expanded to the point where the marginal reduction in congestion costs from a small additional expansion is just equal to the marginal cost of that investment (i.e. the LRMC).
- If tariffs are set efficiently then the tariff at the point in time and at a given location reflects the marginal congestion cost.

Together these points imply that under strong assumptions and with efficient investment, the average forecast future tariff is equal to the LRMC. That is, provided networks are augmented / replaced efficiently, and provided tariffs are set to reflect future congestion, tariffs will be (indirectly) linked to LRMC. There might be a case for not being rigid on what LRMC calculation might mean for the particular tariff component to use to recover these costs and the exact quantum to recover via any such component. We are interested in stakeholder views on how these apparent complexities might be addressed and if there is a direct role for LRMC.

On the LRMC calculations, we seek stakeholder views on whether the forecasting period should be standardised across distributors and if inputs to the calculations should include replacement costs as well as augmentation costs. Our initial view is that both cost types should be included as they relate to forward costs influenced by forecast demand levels.[74]

Questions for Stakeholders

(15). Do the statements sufficiently explain how individual customers will be assigned to tariffs and how this might change if demand, metering or appliances change?

(16). To what extent should LRMC play a direct role in guiding the design of tariffs? How should this occur?

(17). What are the advantages and disadvantages of having a standard length of forecasting period for LRMC calculations?

(18). What are the advantages and disadvantages of including both augmentation and replacement costs (capex and opex) in LRMC calculations?

[74] Demand changes can influence a distributor's decision on the size and timing of any replacement decision.

Appendix 3: AER customer impact analysis

Method

- Our analysis for Victorian distributors is based on a representative sample of data from CitiPower residential customers. This was the only data available to us at this time.[75] This is a sample of half hourly demand data for 20 randomly selected residential customers from 1 October 2014 to 30 September 2015. These customers were all on the CitiPower basic residential tariff (C1R) as of 30 September 2015. The average maximum demand for the sample is 4.7 kW—equivalent to the load required to run a medium size air conditioner and a few background appliances and lights at the same time. The sample shows reasonable variation in demand between different customers and a sensible seasonal demand pattern for most customers.
- The individual customers in this dataset vary widely in their total volume of consumption and their load factor (the ratio of their peak to average consumption). There are a number of customers with both above–average load and above–average load factor, including customers numbered 2, 5, 6, 15, 13 and 17. Some customers have both below–average load and below–average load factor, including customers numbered 4, 7, 9, 10 and 14. A few customers have a higher than average load–factor despite having lower than average load (customers 11 and 20).
- CitiPower and Powercor proposed offering the 'full cost reflective' demand based tariffs in 2017 on an opt–in basis, while United Energy, AusNet services and Jemena proposed to gradually ramp up the demand based component over time.[76] We therefore selected different timeframes for businesses to estimate the customer impact of the transition to indicative demand based tariffs. We selected 2017 as the comparison year for CitiPower and Powercor, and 2020 for United Energy, Jemena and AusNet Services.
- For the selected year, we compared the annual charge for individual customers and the average of all customers in our sample under the existing 2015 tariff, against the proposed indicative 'fully costed' demand based tariff proposed by each distributor—those with the highest demand component. The existing residential customer tariff in 2015 selected for this analysis for all distributors generally had a fixed tariff component and a consumption usage tariff component.[77]
- Our analysis involves indicative prices—actuals will be affected by the AER's final decisions on the Victorian 2016-20 revenue determinations to be released in April 2016.

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75 Therefore this analysis does not account for the potential difference in demand patterns between residential customers serviced by different distributors. This also did not account for demand pattern differences between different types of residential customers (differences between customers with and without PV and customer with and without off peak hot water system). These should be kept in mind when interpreting the results from this analysis.

76 For AusNet services and Jemena the transition will continue beyond the current 2016–20 regulatory control period.

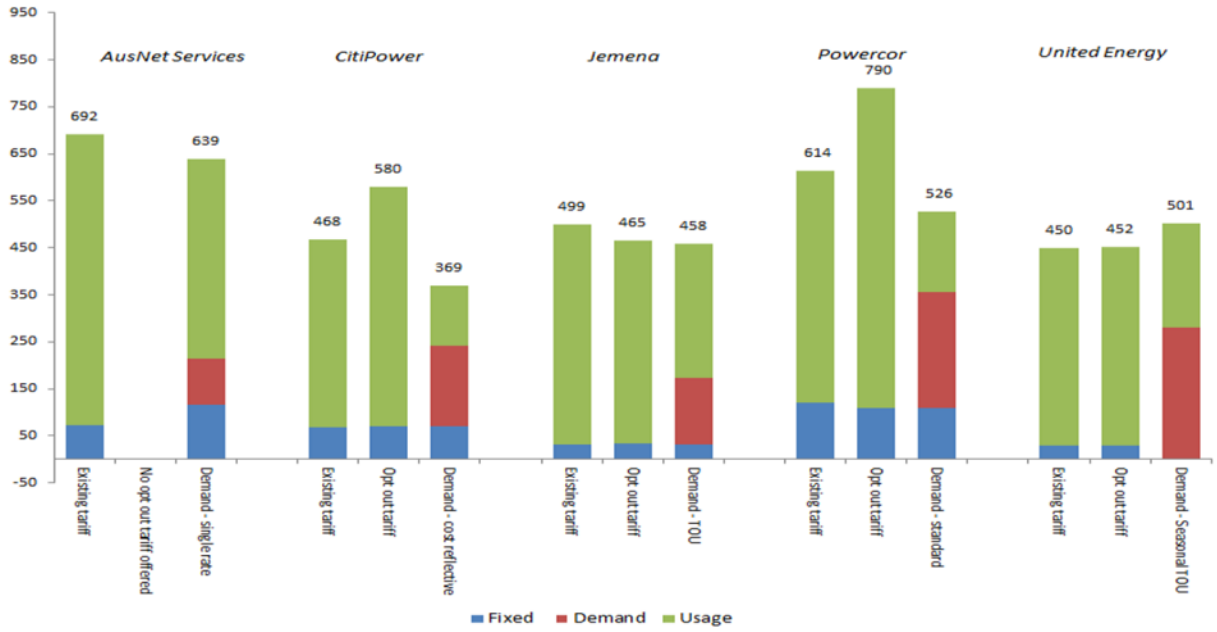
77 To allow a relatively consistent comparison with the proposed demand based tariffs, we adjusted the existing 2015 tariff by CPI and the X-factor to the selected comparator year. We applied X-factors under price cap form of control rather than the revenue cap X-factors. This is because tariffs can be determined by dividing revenues for a given year by the expected consumption for that year. In estimating the tariff changes for each year, we have used the X factors from the price cap calculation in the Post Tax Revenue Model. We have used *proposed* x-factors, the actual x-factors will be determined through the 2016-20 revenue determination which has not yet concluded.

Results of analysis

Examining changes in annual average network charges (the network component of retail bills), results displayed in figure A2 suggest that, if we assume no behavioural change:

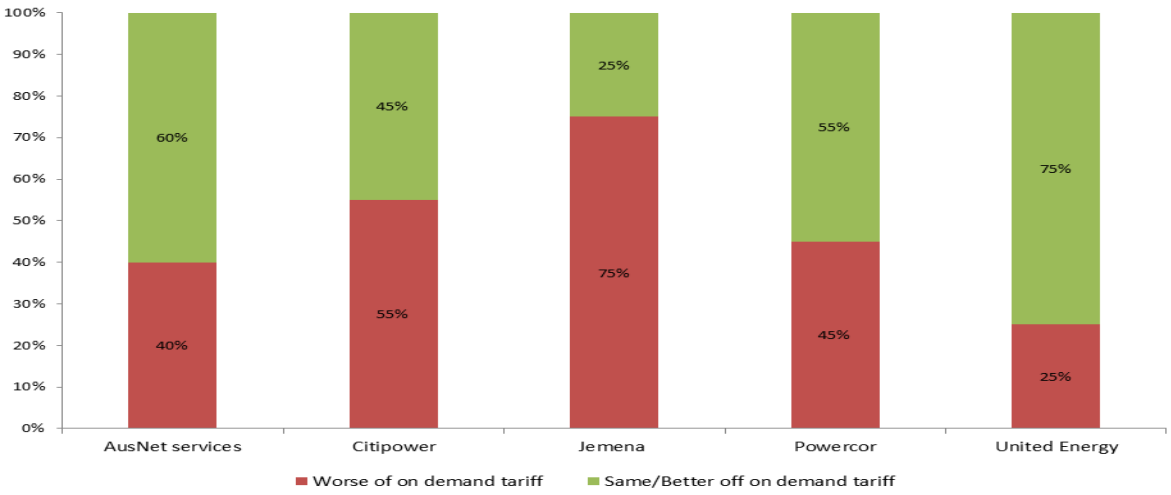
- Moving to the fully costed demand tariff does not on average necessarily equate to higher tariffs. With the exception of United Energy, moving to the most cost reflective demand tariff being proposed by each distributor results in lower average network charges.
- Customers who choose CitiPower and Powercor's option of opting out of a demand tariff, will on average be better off by switching to a demand tariff. This appears intentional.

Figure A2: Annual average network charge by tariff type ($)



In percentage terms across the distributors, the sample results suggest that between 25 to 75 percent of customers would be better off moving to the most cost reflective demand tariff offered compared to their existing consumption usage based tariff.[78]

Figure A3: Proportion of individual customers better or worse off when moving to demand tariffs

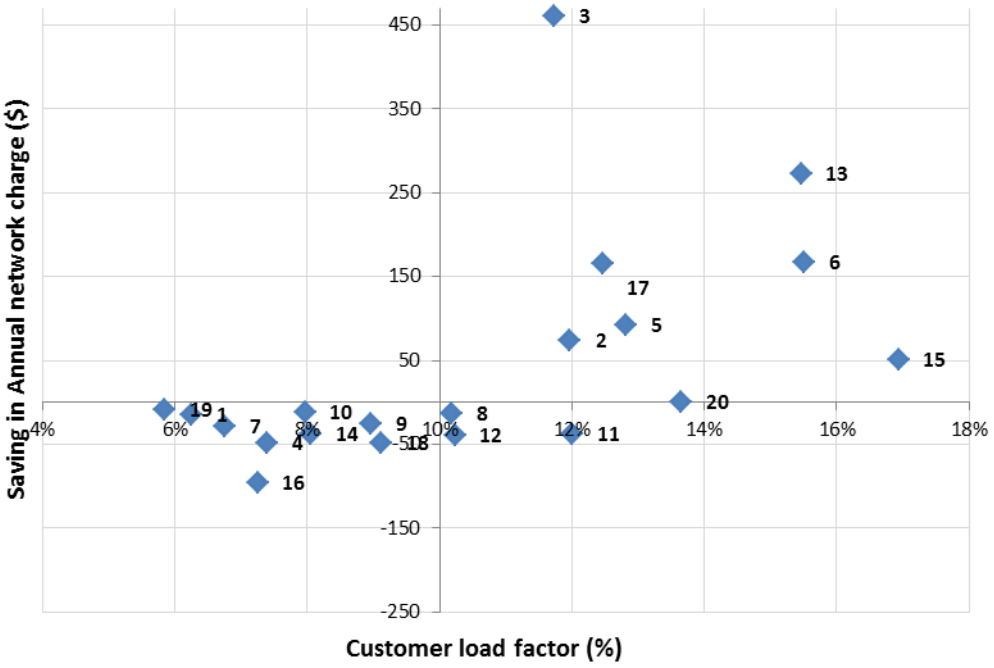


78 The actual bill impact may change if customers alter their behaviour, stay on a less cost reflective demand tariff (subject to the cost ramp up transition) or opt-out of the demand tariff entirely.

To examine impacts on individual customers, in figures A4–A8, we plotted the difference in annual network charges for each customer (in moving to the fully costed demand tariff from their existing tariff) against their load factor.[79] Load factor compares a customer's average load to their peak loads—a high load factor number means a customer has a flatter demand profile. These results indicate that:

- There is correlation between customer load and the impact on network charges. The strength of the correlation varies between different distributors. In general, customers 3, 5, 6, 13, and 17, which have higher than average load, tend to be better off moving to the 'full cost reflective' demand based tariff compared to the existing tariff. Customers 1, 4, 7, 16, and 19 tend to be worse off.
- The correlation between bill increases and customer load factor suggests that:
    - Customers with a flat demand profile tend to benefit from the transition to demand based tariffs, as the discount offered on usage rates outweighs newly introduced demand charges.
    - Customers with a peaky demand profile (high demand over peak times but lower usage in other times) will tend to be worse off from the transition to demand tariffs.

Figure A4: Ausnet Services—Impact on annual network charges as a function of load factor.



79 In figures A4 to A8, the vertical axis shows the 'saving in annual network charges'—a positive number means individual customers benefit from the change in tariff while negative numbers suggest they will be worse off. The horizontal axis shows the load factor. We calculated load factor using average load (kWh) divided by the maximum load (Kw) over 1 year. Data displayed in these figures refer to particular customers.

Figure A5: CitiPower—Impact on annual network charges as a function of load factor.

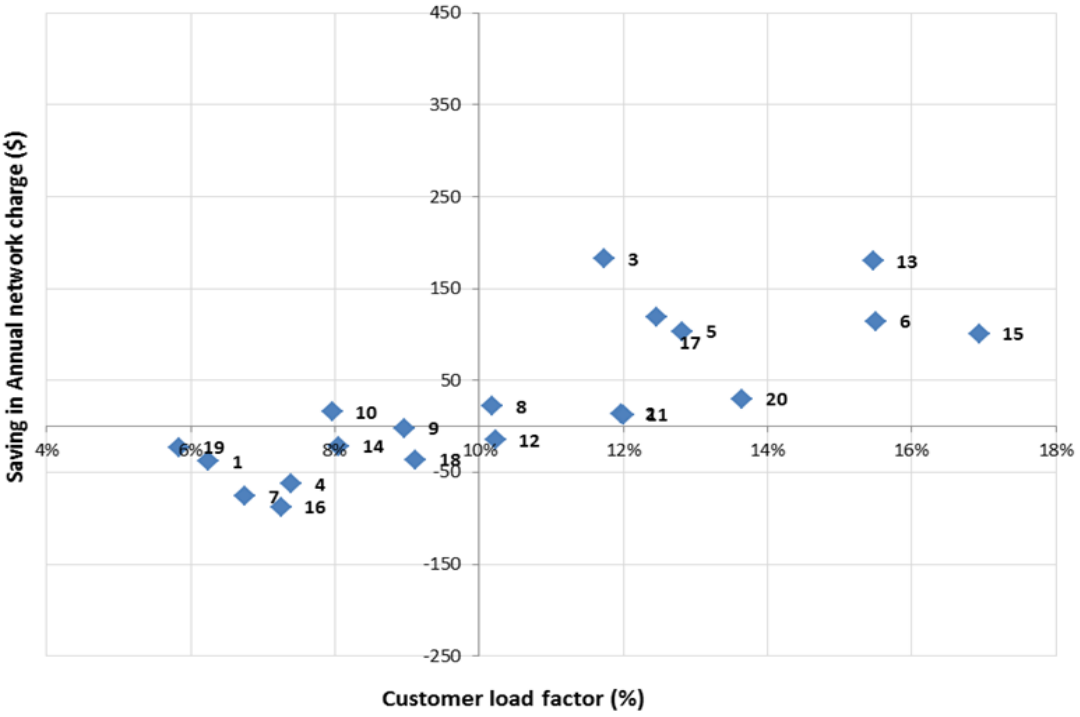


Figure A6: Jemena—Impact on annual network charges as a function of load factor.

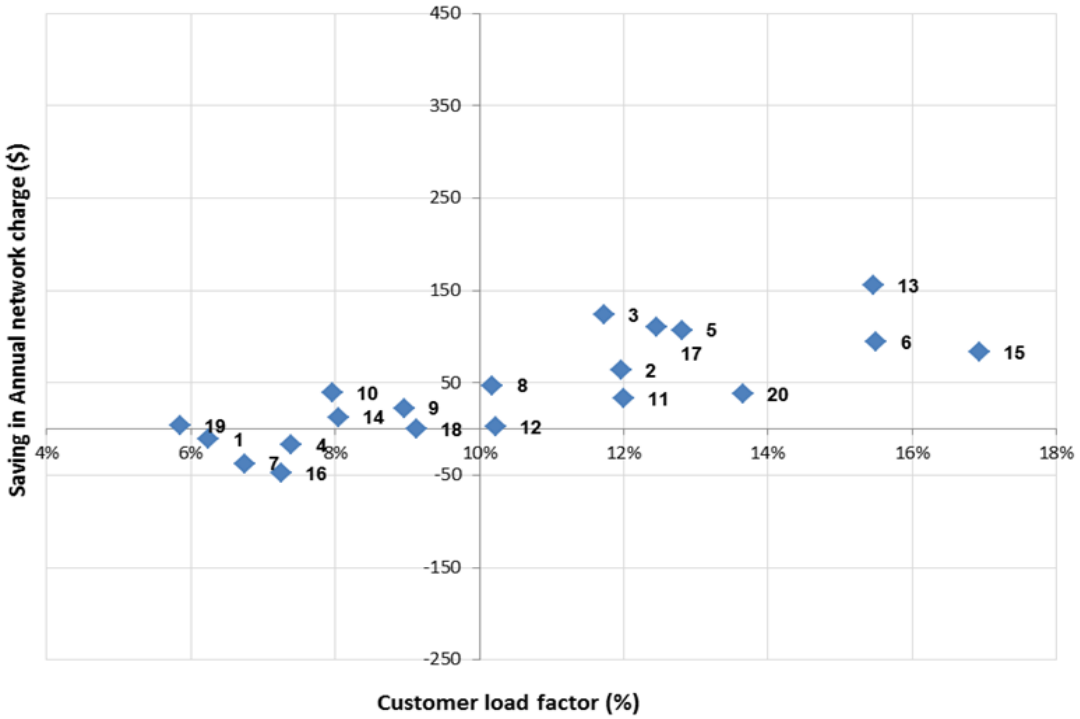


Figure A7: Powercor—Impact on annual network charges as a function of load factor.

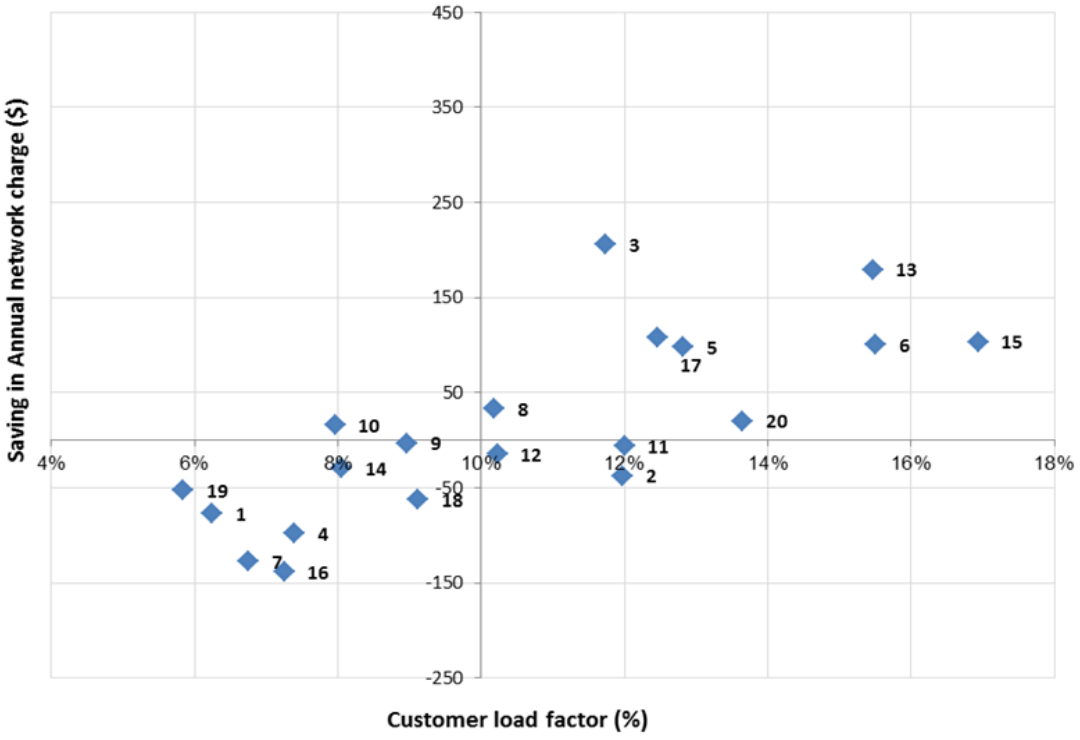
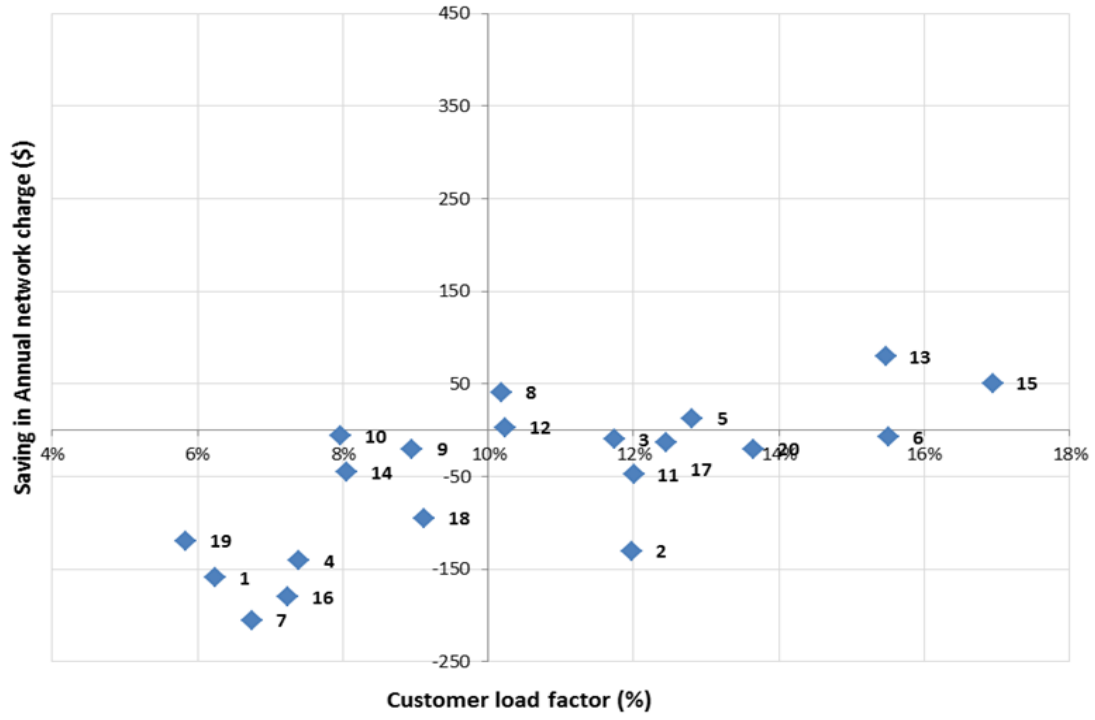


Figure A8: United Energy—Impact on annual network charges as a function of load factor.



Appendix 4: Distribution pricing rules

6.18.3 Tariff classes

(a) **[Deleted]**.

(b) Each customer for *direct control services* must be a member of 1 or more *tariff classes*.

(c) Separate *tariff classes* must be constituted for *retail customers* to whom *standard control services* are supplied and *retail customers* to whom *alternative control services* are supplied (but a customer for both *standard control services* and *alternative control services* may be a member of 2 or more *tariff classes*).

(d) A *tariff class* must be constituted with regard to:

efficient basis; and

(2) the need to avoid unnecessary transaction costs.

6.18.4 Principles governing assignment or re-assignment of retail customers to tariff classes and assessment and review of basis of charging

(a) In formulating provisions of a distribution determination governing the assignment of *retail customers* to *tariff classes* or the re-assignment of *retail customers* from one *tariff class* to another, the *AER* must have regard to the following principles:

(1) *retail customers* should be assigned to *tariff classes* on the basis of one or more of the following factors:

(i) the nature and extent of their usage;

(ii) the nature of their *connection* to the *network*;

(iii) whether remotely-read interval metering or other similar metering technology has been installed at the *retail customer's* premises as a result of a *regulatory obligation or requirement*;

(2) *retail customers* with a similar *connection* and usage profile should be treated on an equal basis;

(3) however, *retail customers* with micro-generation facilities should be treated no less favourably than *retail customers* without such facilities but with a similar load profile;

(4) a *Distribution Network Service Provider's* decision to assign a customer to a particular *tariff class*, or to re-assign a customer from one *tariff class* to another should be subject to an effective system of assessment and review.

Note:

If (for example) a customer is assigned (or reassigned) to a *tariff class* on the basis of the customer's actual or assumed *maximum demand*, the system of assessment and review should allow for the reassignment of a customer who demonstrates a reduction or increase in *maximum demand* to a *tariff class* that is more appropriate to the customer's *load* profile.

(b) If the *charging parameters* for a particular tariff result in a basis of charge that varies according to the usage or load profile of the customer, a distribution determination must contain provisions for an effective system of assessment and review of the basis on which a customer is charged.

6.18.5 Pricing principles

Network pricing objective

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

Application of the pricing principles

(b) Subject to paragraph (c), a *Distribution Network Service Provider's* tariffs must comply with the pricing principles set out in paragraphs (e) to (j).

(c) A *Distribution Network Service Provider's* tariffs may vary from tariffs which would result from complying with the pricing principles set out in paragraphs (e) to (g) only:

(1) to the extent permitted under paragraph (h); and

(2) to the extent necessary to give effect to the pricing principles set out in paragraphs (i) to (j).

(d) A *Distribution Network Service Provider* must comply with paragraph (b) in a manner that will contribute to the achievement of the *network pricing objective*.

Pricing principles

(e) 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*.

(f) Each tariff must be based on the *long run marginal cost* of providing the service to which it relates to the *retail customers* assigned to that tariff with the method of calculating such cost and the manner in which that method is applied to be determined having regard to:

(1) the costs and benefits associated with calculating, implementing and applying that method as proposed;

(2) the additional costs likely to be associated with meeting demand from *retail customers* that are assigned to that tariff at times of greatest utilisation of the relevant part of the *distribution network*; and

(3) the location of *retail customers* that are assigned to that tariff and the extent to which costs vary between different locations in the *distribution network*.

(g) The revenue expected to be recovered from each tariff must:

(1) reflect the *Distribution Network Service Provider's* total efficient costs of serving the *retail customers* that are assigned to that tariff;

(2) when summed with the revenue expected to be received from all other tariffs, permit the *Distribution Network Service Provider* to recover the expected revenue for the relevant services in accordance with the applicable distribution determination for the *Distribution Network Service Provider*; and

(3) comply with sub-paragraphs (1) and (2) in a way that minimises distortions to the price signals for efficient usage that would result from tariffs that comply with the pricing principle set out in paragraph (f).

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

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

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

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

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

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

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

(j) A tariff must comply with the *Rules* and all *applicable regulatory instruments*.

Appendix 5: Questions for stakeholders

Questions for Stakeholders

Proposed new tariffs

1. What are the advantages and disadvantages for setting charging windows for demand tariffs to reflect the times at which constraints or periods of maximum demand are likely to occur? What data should distributors rely on?
2. What are the advantages and disadvantages of aligning tariff charging windows across distributors?
3. Do the tariff statements effectively present pricing strategies within the broader context of network planning and demand management options?
4. What are the advantages and disadvantages of charging differently according to the location in which network constraints are forecast to occur?

Single standard vs menu of options

5. What are the advantages and disadvantages of distributors offering a menu of tariff options to send stronger price signals in addition to their new demand tariffs?
6. To what extent would offering a menu of tariff options on an opt–in basis alleviate any customer impact concerns?
7. Are there any practical impediments to distributors setting out optional tariffs in their statements?

Customer impacts

8. Do stakeholders consider that customers will be able to understand the new tariffs and take action to mitigate their effects?
9. Will retailers be able to offer customers a number of tariff offers, some of which might differ to the network tariffs being proposed? What are the advantages and disadvantages of them doing so?
10. Are there other key issues concerning impacts of tariffs not identified in this paper? In particular
    (a) Are there matters that stakeholders raised with distributors and were inadequately addressed?
    (b) Are there any other approaches to transition customers that should have been considered?
11. Do stakeholders consider that the information presented by distributors in their consultations have been sufficient to allow you to examine the nature of impacts and how to respond?
12. Have we accurately characterised the objectives of transition management? Are there others?
13. To what extent will approaches such as gradually increasing the level of the new demand component in tariffs be sufficient to mitigate customer impacts in transitioning to more cost reflective tariffs?
14. What are the advantages and disadvantages of the transition period (4–9 years) proposed by the distributors?

Questions for Stakeholders

Defining and linking costs to customers

15. Do the statements sufficiently explain how individual customers will be assigned to tariffs and how this might change if demand, metering or appliances change?

16. To what extent should LRMC play a direct role in guiding the design of tariffs? How should this occur?

17. What are the advantages and disadvantages of having a standard length of forecasting period for LRMC calculations?

18. What are the advantages and disadvantages of including both augmentation and replacement costs (capex and opex) in LRMC calculations?