Issues paper

Tariff Structure
Statement proposals

SA Power Networks

March 2016
Contents

Glossary..................................................................................................................1

1 Overview................................................................................................................2

2 Determination background......................................................................................7

3 Cost reflectivity of tariffs ......................................................................................13
   3.1. Proposed tariff design ......................................................................................13
   3.2. AER observations ............................................................................................17

4 Impacts of tariffs....................................................................................................23
   4.1. Proposal ...........................................................................................................23
   4.2. AER observations ............................................................................................25

Appendix 1: Proposed tariff structures and transitions ........................................29

Appendix 2: Defining and linking costs to customers ...........................................33

Appendix 3: SA Power Networks customer impact information ..........................36

Appendix 4: Distribution pricing rules ....................................................................38

Appendix 5: Questions for stakeholders .................................................................41
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoAG Energy Council</td>
<td>The Council of Australian Governments Energy Council, the policy making council for the electricity industry, comprised of federal and state (jurisdictional) governments.</td>
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<tr>
<td>Interval and smart meters</td>
<td>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.</td>
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<td>LRMC</td>
<td>Long Run Marginal Cost. Defined in the National Electricity Rules as follows: &quot;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&quot;.</td>
</tr>
<tr>
<td>NEO</td>
<td>The National Electricity Objective, defined in the National Electricity Law as follows: &quot;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&quot;.</td>
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<tr>
<td>NER</td>
<td>National Electricity Rules</td>
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<tr>
<td>Tariff</td>
<td>The overall name of a charge, e.g. &quot;residential standard&quot;. 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.</td>
</tr>
<tr>
<td>Tariff structure</td>
<td>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)</td>
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<tr>
<td>Tariff charging parameter</td>
<td>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)</td>
</tr>
<tr>
<td>Tariff class</td>
<td>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.</td>
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**Tariff Structure Statement proposals**
1 Overview

Electricity distribution businesses intend to change the manner in which they charge to transport electricity through their grids. The AER is overseeing this process. The changes respond to reforms endorsed by governments and developed by the Australian Energy Market Commission into new rules, the distribution network pricing arrangements.\(^1\) They were designed to produce prices that better reflect the costs of providing electricity. They will allow consumers to make informed consumption choices and manage their expenditure, comparing the value they place on using the network with the efficient costs of using it.

The distributors charge retailers for transferring electricity through their networks. Retailers then put various cost elements together in the energy plans they offer customers.

Figure 1: Residential customer bills, SA 2015-16 forecast.\(^2\)

The distribution charge is only one component of the overall price that consumers are charged by their energy retailer. A retail price also includes the costs of producing electricity in power stations and other service and retail costs. However, distribution is a significant component as shown in figure 1. It is forecast to be around 35 percent of an average residential customer bill in South Australia.

Distribution tariffs to date do not vary greatly according to the time at which electricity is used. The current charges have been based on the total electricity used over a given period. However, the costs of distributors are largely based on the maximum demand that the network must cater for at key points in time. 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 are 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. Air conditioners have become more affordable and their use in homes has increased. Consumers now use relatively more of their electricity at peak times. This imposes greater demand on the network. The network needs to be built to meet the higher peak demand. The increased investment that has resulted has been a key factor driving electricity price rises in the recent past. Price rises have in turn influenced a greater take-up of solar panels by households.

\(^1\) AEMC, Final rule determination, National Electricity Amendment (distribution network pricing arrangements) rule 2014.
Customers with solar panels use less electricity from the network in total. However, 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 required more network investment even though individual customers may be using less electricity from the network in total. Some consumers will change their pattern of use by installing battery storage at their premises. The increased popularity of electric vehicles may also increase the use of networks.

The tariff reforms will give consumers prices that better reflect the costs incurred by the use of the network. Customers have the knowledge and incentive to choose appliances and electricity plans that will lower the cost of the electricity services they use. This might mean that over time, 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.

Most 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 more transparent. Those who use electricity at peak times will pay rates that better reflect the impact their high use places on delivering electricity at those peak times. Those who change their use 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.

**SA Power Networks proposed strategy**

The new tariff rules require distributors to set out their tariff approaches in a new document, the Tariff Structure Statement (tariff statements), which we assess for compliance with the rules. The process of seeking to comply with the rules by designing tariffs to better reflect costs will likely be a long term iterative process. This process will need to recognise the specific challenges faced by each individual distributor. This is in seeking to manage impacts on customers and the specific constraints each distributor might have in terms of the availability of metering and other technologies to enable more cost reflective pricing.

SA Power Networks is proposing a long term plan to gradually transition all customers onto tariff structures that better reflect costs. These tariff structures are proposed to take the form of demand based tariffs. Changing tariff structures affects how customers pay for network costs, but does not allow SA Power Networks to earn more revenue overall from its customers.

Compared to existing tariffs, demand based tariffs will reduce the reliance on charging based on consumption volumes, which does not drive costs. Instead they increase the extent to which a customer is charged based on their demand at a specific point in time of the day and during months when the network is under most stress due to peak demand. We intend to further explore how closely the design of the proposed demand tariffs match the times, days and months when the network is under most stress. If the charging windows were significantly misaligned with when these periods occur, customers may be encouraged to reduce their use of electricity at times when this does not greatly reduce network costs or alternatively, encouraged to use more of the network when it is most stressed, thereby increasing costs.

SA Power Networks’ tariff reform has been underway for some years, commencing with large businesses (customers with enabling metering). Most of these customers are already charged time varying and peak demand based tariffs. The tariff statement now proposes the next

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reform stage by making changes affecting residential and small business customers. While the objective is to eventually have all customers on demand based tariffs, SA Power Networks’ proposal works within the constraints of available metering and attempts to manage the impacts of tariff changes on customers. Their proposal combines an opt–in approach but with mandatory tariff assignments when certain triggers or thresholds are met.

A key feature of SA Power Networks' proposal is a distinction made between existing customers and customers making new investments (such as new connections or alterations to their connection/supply arrangements). Existing customers (without enabled metering) will not be assigned a demand based tariff. This manages the impacts on customers who have made investments (appliance choice, decisions on business operating conditions etc.) based on current charging approaches. Only existing customers consuming above a large threshold will be assigned a demand tariff, if they have an enabling meter. Most customers will therefore remain on their current tariff. However, they can opt–into a demand tariff if they see value. The demand tariff will charge a higher rate based on a customer's highest 30 minutes of use at certain times of the day during summer, and a lower rate at the same times in winter.

Customers who might benefit from opting in could include those with:

- a relatively flat and non–peaky usage profile and who currently might be paying relatively more than they might otherwise under a peak demand reflective tariff.
- a peaky demand usage profile but who might be willing to alter their appliance use to outside of the peak rate times, and/or draw on devices such as battery storage during peak rate times while charging these units during the day at off–peak times.

For customers making new investments, a different approach is proposed. Those seeking a new network connection, or making a significant new investment in their premises such that they might need a new meter, would be assigned a demand based tariff. Under this proposal, the speed of tariff reform will be difficult to predict. It will depend on consumer and retailer driven factors, in establishing new connections, making new investments or acquiring new meters. We seek stakeholder views on whether this might be a reasonable way to reform tariffs in SA Power Networks' circumstances, if a view is taken that new investment customers should be treated differently to existing customers. We observe that:

- This approach might allow a customer to consider their new investment with regard to the implications of the new tariff they will be assigned—that is, the network cost implications of their usage. That said, a clarification is required on whether all the 'trigger' circumstances noted by SA Power Networks would in fact require a new meter.
- SA Power Networks still proposes to manage impacts on these (new) customers by assigning them onto a transitional demand tariff. Under this transitional approach, the demand component will be simplified to a single rate (peak) applying all year during certain times of the day. The peak rate will also be initially set at 40 percent of its level for the entire tariff statement period. We seek views on the merit of these or other measures such as temporary opt–out provisions applied to new investment customers.

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4 Currently, most of these customers will also not have an interval or smart meter to enable demand based pricing
5 SA Power Networks, Tariff Structure Statement proposal, pg.44.
6 SA Power Networks, Tariff Structure Statement overview paper, pg.41.
7 SA Power Networks, Tariff Structure Statement proposal, pg.68.
The proposal to offer all residential and small business customers a more cost reflective opt-in version of a demand tariff than the transitional demand tariff is sound. Customers willing to alter their use will be better empowered to take control of their bills and help lower network peak demand. We query if SA Power Networks might better forward the cost reflectivity goals of the pricing rules by also making available other, more cost reflective options that customers could opt into (via their retailers). The need for such tariff alternatives or other non-price measures such as demand management might be greater given that SA Power Networks is not proposing to implement locational distribution pricing for its business customers. In relation to residential customers, SA Power Networks has complied with a government obligation to not vary prices on the basis of location.\(^8\)

The ultimate implementation of more cost reflective pricing arising from 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 will drive a diverse range of energy packages being offered to consumers to suit their lifestyle choices and thereby manage their bills. Consumer interests will 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. We are interested in hearing from retailers on these issues as they might better inform on the likely impacts of network tariffs.

*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 in table 1, and intends to:

- Scan the key themes arising from SA Power Network’s proposal.
- 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 proposed by SA Power Networks.

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\(^8\) South Australian Treasurer, Electricity Act 1996 Section 35B Electricity Pricing Order, 11 October 1999. Cl 7.3 (f)-(h)
Table 1: Issues paper sections

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determination background</td>
<td>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.</td>
</tr>
<tr>
<td>Cost reflectivity of tariffs</td>
<td>The new tariff designs and our observations on these proposals.</td>
</tr>
<tr>
<td>Customer impacts of tariffs</td>
<td>SA Power Networks identification of customer impacts of their tariffs and their proposed approaches to manage the transition to more cost reflective tariffs. This includes our observations.</td>
</tr>
<tr>
<td>Appendix 1: Proposed tariff structures and transitions</td>
<td>Details the tariff structures and transitions being proposed by SA Power Networks</td>
</tr>
<tr>
<td>Appendix 2: Defining &amp; linking costs to customers</td>
<td>How SA Power Networks identified their forward looking costs, residual costs and apportioned these costs to customers by allocating customers into different groupings. This includes our observations.</td>
</tr>
<tr>
<td>Appendix 3: Impacts</td>
<td>Customer impact analysis undertaken by SA Power Networks.</td>
</tr>
<tr>
<td>Appendix 3: Pricing rules</td>
<td>Lists the rule requirements applying to distribution pricing.</td>
</tr>
<tr>
<td>Appendix 4: Questions</td>
<td>Lists all questions for stakeholders, raised in this paper.</td>
</tr>
</tbody>
</table>

We will review SA Power Networks’ compliance with the new pricing rules in deciding if to approve the proposed tariff statement. We encourage written submissions on the issues paper. Our key milestones are set out in table 2. Stakeholders are also encouraged to attend our public forum.

Table 2: Issues paper milestones

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>SA Power Networks submitted proposed tariff statement</td>
<td>December 2015</td>
</tr>
<tr>
<td>AER publishes issues paper</td>
<td>11 March 2016</td>
</tr>
<tr>
<td>AER public forum on tariff statement proposal</td>
<td>March/April 2016</td>
</tr>
<tr>
<td>Stakeholder submissions due on issues paper</td>
<td>28 April 2016</td>
</tr>
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</table>
2 Determination background

The requirement on distributors to prepare a tariff statement arises from a long process of reform to the National Electricity Rules (the rules) governing distribution network pricing, set out in table 3 below.\(^9\) The purpose of the rules is to empower consumers to make informed choices\(^10\) by:

- Providing better price 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 tariff approaches for a set period of time.\(^11\) 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.

Our role is to oversee if SA Power Networks has complied with the rules in setting the structure of proposed tariffs.\(^12\) The first tariff statement will apply for 3 years rather than the usual 5 years. The approved tariff statement will set out the tariff structures that will apply for the three years, and provide indicative tariff levels (the dollar amount). However, our tariff statement review will not decide on those levels:

- Approved tariff levels are subsequently determined through an annual pricing review, which is conducted after we set the revenue (based on efficient costs) that TasNetworks may recover from customers.
- In annual pricing reviews we examine how TasNetworks applied the revenues set in the determination to the tariff structures set out in their tariff statement. Changes in tariffs reflected in a tariff statement will not allow SA Power Networks to earn more revenue in total. SA Power Network's tariff statement will apply for three years.\(^13\)

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\(^9\) Further information on the reform process can be found in the AEMC's final rule determination, *National Electricity Amendment (distribution network pricing arrangements) rule 2014*, 27 November 2014.


\(^11\) A tariff statement must set out the tariff structures and the procedures for assigning and reassigning customers from one tariff to another, for a set period of time, typically a 5 year regulatory control period. For SA Power Networks, this first tariff statement will be in place for 3 years, clause 6.18.1A.

\(^12\) Under clauses 6.12.3(k) and (j) the AER must approve a tariff statement unless reasonably satisfied that the proposal does not comply with the pricing principles or other applicable rule requirements. If the AER does not approve the proposal, the AER's substitute tariff statement must be based on the distributor's proposal and amended only to the extent necessary to enable it to be approved in accordance with the rules.

\(^13\) This is unless a formal proposal is made to re–open the tariff statement, as per clause 6.18.1B.
Table 3: Reform implementation milestones

<table>
<thead>
<tr>
<th>Reform milestones</th>
<th>Date</th>
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<tbody>
<tr>
<td>AEMC recommends reforms to distribution pricing—Power of Choice review</td>
<td>November 2012</td>
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<tr>
<td>Governments propose rule changes to the AEMC</td>
<td>September 2013</td>
</tr>
<tr>
<td>AEMC makes final determination on new pricing rules—enacting proposals into</td>
<td>November 2014</td>
</tr>
<tr>
<td>specific rules applying to distributors</td>
<td></td>
</tr>
<tr>
<td>SA Power Networks submit proposed tariff statement</td>
<td>December 2015</td>
</tr>
<tr>
<td>AER publishes final determination on proposed tariff statement</td>
<td>30 April 2017</td>
</tr>
<tr>
<td>SA Power Networks submits annual prices complying with tariff statements</td>
<td>31 March 2017</td>
</tr>
<tr>
<td>Annual prices take effect</td>
<td>1 July 2017</td>
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Industry context

The electricity industry in Australia is undergoing 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, there is an increasing availability of new appliances that are able to 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 than necessary for safe and reliable electricity. If consumers are given prices that better reflect the efficient costs of their use of the network, they are more likely to invest in appliances and services that will lower the cost of the services they choose.

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 efficient 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 three years over which this tariff statement will apply. 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.¹⁴

¹⁴ Maximum demand is sometimes called peak demand. For the purposes of this issues paper, the terms are interchangeable.
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 influenced significantly by the specific time and location in which maximum demand occurs.

**Integrated network pricing, planning and management**

Demand growth can be met by expenditure on the network, procuring demand management services, or by sending price signals that encourage retailers, other service providers or customers to control customers' demand or some combination of these. While not explicitly required of distributors, it might be useful if tariff statements clearly identified the interactions between these approaches. This might better inform both the AER and stakeholders on the limits of what might be achieved with price signals and indeed those proposed in this initial round of tariff statements. Therefore, while the pricing rules require distributors to consider the time and location varying nature of network cost drivers, difficulties and concerns with locational pricing at this time might serve to indicate the role for other measures to deal with localised issues, including demand management.

**Reform requirements**

We will review if SA Power Networks' tariff statement can be approved as complying with the new rules, by considering pricing principles for direct control services located in clause 6.18.5 of the Rules (pricing principles) that it must apply, summarised below and listed in appendix 3.

*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. 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 in the network and in electricity services to power / connect 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 market as a whole.

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—it refers to costs of providing services to individual customers. 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. 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—both in terms of technology and the need to manage the specific impacts and concerns that might be anticipated for its customer base.

Achieving greater tariff cost reflectivity as required by the NPO, involves the processes, outlined in table 4 below. SA Power Networks’ proposal covering these points and our observations are set out in section 3 and appendix 2.

Table 4: Likely steps in defining and linking costs to customers

<table>
<thead>
<tr>
<th>Step</th>
<th>Approach</th>
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| (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, 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 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.

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15 Cost reflective tariffs might require differing information technology systems to allow the distributor to match the rates within a tariff to a customer’s usage. There might be other administrative challenges that arise if distributors seek to have an ever increasing variety of tariffs to create more specific distinctions between customers.

16 A key issue is whether a customer has a meter capable of measuring use in time intervals, i.e. an interval or smart meter. In South Australia most customers do not have such meters.

17 Clause 6.18.5(f) requires that tariffs be based on LRMC which is a forward looking concept of network costs.

18 Clause 6.18.3 specifies requirements in forming tariff classes, including that this be on an economically efficient basis.

19 Clause 6.18.4 specifies requirements upon which to base assignment and reassignment procedures, including that this account for the nature and extend of a customer's usage and their type of network connection.

20 Clause 6.18.5(f).
congestions—moving along the cost reflectivity spectrum.

(3) Recovering residual costs

How distributors recover non-forward looking costs (residual costs required to make up total required revenues) from tariffs designed primarily to reflect forward looking costs. These are treated differently because they don’t 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 tariff quantum. The objective in recovering these costs is minimising distortions to the forward looking signal and therefore distortions in consumer behaviour.\(^\text{(21)}\) With technological changes noted earlier, risks of inefficient network disconnection due to high 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.\(^\text{(22)}\) 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:

- 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.\(^\text{(23)}\)

- 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.\(^\text{(24)}\)

- Comply with jurisdictional obligations—there may be jurisdictional requirements.\(^\text{(25)}\) In South Australia, a government obligation requires that all small customers be charged a tariff that does not vary by their location on the network.\(^\text{(26)}\)

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. The impacts of tariff changes are likely to be more pronounced for existing customers given that they have made sunk investments in appliances or in terms of how they have structured their business operations in response to current charging approaches.

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. Stakeholders might want to consider the desirability of moving more

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\(^\text{21}\) 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.

\(^\text{22}\) Clauses 6.18.5(c) & (d).

\(^\text{23}\) Clause 6.18.5(h).

\(^\text{24}\) Clause 6.18.5(i).

\(^\text{25}\) Clause 6.18.5(j).

\(^\text{26}\) South Australian Treasurer, Electricity Act 1996 Section 35B Electricity Pricing Order, 11 October 1999. Cl 7.3 (f)-(h)
quickly to cost–reflective pricing for distributors where capital and operating expenditure are growing rapidly.\(^{27}\) We will review the extent to which SA Power Networks’ approach to manage impacts has:

- Complied with requirements to consider appropriate transitions, the ability of customers to respond and their ability to choose the tariffs they are assigned, by considering how the distributor’s approaches regarding these matters have sought to address concerns raised by retailer and consumer representatives.
- Been employed in a way that contributes to achieving the NPO.

*Expectations management—clarifying future tariff structures*

Tariff statements serve a key role in improving transparency, expectations and predictability for retailers and consumers on future tariff strategies of distributors. This is partly by maintaining the tariff structures distributors can offer, to those set in tariff statements for the duration of a regulatory period,\(^{28}\) which for SA Power Networks is 2017–2020.\(^{29}\) This is unless a formal proposal is made to reopen the tariff statement.\(^{30}\) Greater predictability allows consumers (with their retailers) to consider how to respond to new tariffs to mitigate impacts of changed tariffs. 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 determination.\(^{31}\)

Tariff statements also need to include other information that can help improve predictability:

- Information that retailers and consumers require to understand the strategies (tariff structures and charging parameters offered) proposed by distributors. This also includes their rationale (the approach taken to setting tariffs), 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).\(^{32}\) This information allows retailers, service providers and customers to plan investments in appliances and services, with greater predictability of costs. It is important here that information is set out in a way that allows customers to understand and relate their usage to network tariffs to be able to respond to them.
- An indicative tariff schedule on the forecast trajectory of tariff levels. While this is only for indicative purposes, distributors on an annual basis will be required to explain to the AER the reasons for any material departures from tariff levels indicated in the schedule.

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\(^{27}\) This contrasts to other approaches, such as fixing quantitative limits on price levels within legislation.

\(^{28}\) Tariff statements require information on: tariff classes, policies and procures for assignment/reassignment of customers to tariffs, tariff structures, charging parameters for each tariff, descriptions of approaches taken to setting each tariff.

\(^{29}\) 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.

\(^{30}\) Clause 6.18.1B.

\(^{31}\) The revenue expected to be recovered from all tariffs must equal the revenue determined in the distribution determination as per clause 6.18.5(g).

\(^{32}\) These requirements are set out in Clause 6.18.1A of the NER, as set out in appendix 4.
3 Cost reflectivity of tariffs

SA Power Networks proposes changes to their tariffs and existing charging practice. Tariff design is the end product of a process of defining future and residual costs and attempting 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

SA Power Networks has been reforming its approaches over several years. Some tariff structures are already offered that are designed to better reflect the costs imposed by maximum demand at times of network peaks. Large businesses already face a demand based tariff, and opt–in demand tariffs are offered to residential and small business customers. The tariff statement now proposes more significant and wide–spread changes, mostly for residential and small business customers with low voltage network connections.

Current approaches

Appendix 1 details the existing and new tariff structures and the transition path proposed for residential and small business tariffs. At a broad level, residential and small businesses currently face:

- Optional (opt–in) tariffs designed to charge higher rates at times when the network peaks:
  - Time of Use based tariffs (for business customers)—two part tariffs, with charging parameters including a fixed charge and a consumption usage charge varying by time of use. A variant of this tariff, "Solar Sponge", is available with a peak and off–peak consumption charge rather than a single block consumption charge—charging a lower off–peak price at times when solar PV output is at its maximum.
  - Demand based tariffs—two part tariffs, with charging parameters including a consumption usage charge (flat) and a maximum demand charge.

- Standard tariffs that are not time varying and charge mostly on the basis of consumption volumes. These have various charging parameters, including a fixed / standing charge, and a consumption charge (in blocks—higher prices for higher consumption volumes). Most small customers are on these standard tariffs.

Proposed approaches:

Optional (opt–in) tariffs proposed:

- Existing demand based tariffs for residential and small businesses will continue to be offered on an opt–in basis. This includes the "Solar Sponge" variant.

- A demand based tariff for multi–site customers ("price guarantee offer") is still being developed. Single customers with multi–sites and connection points, would be offered a

33 SA Power Networks, Tariff Structure Statement proposal, p.28.
34 Some customers with controlled load hot water heating devices face an additional charging parameter for the specific use of these devices.
guarantee of not paying more than they currently do, if they transition all their sites onto demand tariffs. This is to encourage these customers to install advanced meters in all sites, and to mitigate the possibility that a multi–site customer chooses to only migrate sites to demand tariffs where these receive lower bills under the demand tariffs.\textsuperscript{37}

**Mandated tariff changes proposed:**\textsuperscript{38}

- Existing standard tariffs charging predominantly on the basis of consumption usage volumes will be closed to new customers from 2017–18. New customers will be assigned to 'transitional' demand based tariffs.

- Business customers with low voltage network connections will be further segmented into a new tariff class, "Distribution Transformer business" claimed to better reflect their characteristics and demands on the network. The intention is to offer these customers tariff structures that mirror those available for other low voltage businesses. It is unclear how these tariffs are designed to better reflect the circumstances of these customers.

- Amended and 'transitional' versions of the existing demand tariffs will be automatically assigned to residential and small business customers as and when certain triggers and thresholds are met. The aim is to distinguish existing customers from customers making new investments. The components and application of these tariffs are set out in table 5. These tariffs will have simpler charging windows, a higher consumption charge and lower demand charge than the opt–in demand tariff.

- Amended and 'transitional' versions of the standard consumption usage based tariffs will be assigned to customers who surpass the threshold for a new demand tariff but who do not have enabling metering for these tariffs.

- Two new consumption usage based tariffs specific to customers with solar PV units, "solar tariff" and customers in financial hardship, "social tariff" were proposed to be assigned to these customers. At the time of submitting the tariff statement these were subject of Federal Court proceedings following an appeal made to the AER's rejection of these tariffs in the 2014-15 pricing proposal. The Court has now ruled in favour of the AER. SA Power Network's tariff statement indicates that it will likely need a comprehensive review of its approaches after the court's decision.

Table 5: Optional (opt–in) demand tariffs - Residential and small business customers

<table>
<thead>
<tr>
<th>Feature</th>
<th>Residential customers</th>
<th>Small businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment trigger</td>
<td>Consumer requests to be assigned to tariff</td>
<td></td>
</tr>
<tr>
<td>Charging parameters</td>
<td>Part 1: Consumption usage component ($/kWh)—single block or consumption with peak and off peak period (solar sponge option)</td>
<td>Part 1: Consumption usage component ($/kWh)—single block.</td>
</tr>
<tr>
<td></td>
<td>Part 2: Demand charge component ($kW/day). Minimum demand charge of 1kW.</td>
<td>Part 2: Demand charge component ($kW/day)—set at 100 percent of intended level. Minimum demand charge of 1kW.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Part 3: Fixed metering charge if</td>
</tr>
</tbody>
</table>


\textsuperscript{38} These are proposed to be mandated by SA Power Networks through this tariff statement. SA Power Networks, *Tariff Structure Statement proposal*, pp.42-55.
Part 3: Fixed metering charge if customers has a type 5 meter provided by SA Power Networks.

Charging windows—figure 2 provided to correlate windows with network demand on summer weekday & weekend

Peak charge (November–March).
Shoulder charge (April–October).
Time: peak & shoulder demand charges will apply from 4–9pm.  

Peak charge (November–March)
Shoulder charge (April–October)
Day: peak & shoulder rates apply workdays. Weekends/Public holidays excluded.
Time: Peak applies from 12:00–9pm; shoulder applies from 12:00–4pm.

Calculation

A customer’s demand is calculated in 30 minute intervals over 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 reset.

Figure 2: Weekday vs weekend comparison of total network demand

![Diversity of SAPN Customer Segment Demands Thursday 16/1/14 vs Sunday 2/2/14 Excludes Major Customers. Extreme Weather occurred on both days.](image)

41 SA Power Networks, Tariff Structure Statement overview paper, p.32.
Table 6: Mandated demand & usage tariffs - Residential and small business customers

<table>
<thead>
<tr>
<th>Feature</th>
<th>Residential customers</th>
<th>Small businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mandatory 'transitional' demand tariffs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment triggers$^{42}$</td>
<td>New and altered connections from 2017–18.$^{43}$ These triggers appear to require a new meter.$^{44}$</td>
<td>New and altered connections from 2017–18.$^{45}$ These triggers appear to require a new meter.$^{46}$</td>
</tr>
<tr>
<td></td>
<td>Customer's consumption exceeds 20mWh per annum, from 2018–19. Customers without enabling meter will be assigned to transition consumption usage based tariff.</td>
<td>Customer's consumption exceeds 40mWh per annum, from 2018–19. Customers without enabling meter will be assigned to transition consumption usage based tariff.</td>
</tr>
<tr>
<td>Charging parameters</td>
<td>Same as above except:</td>
<td>Part 1: Consumption usage component ($/kWh). Part 2: Demand charge component ($kW/day)—set at 40 percent of intended level for duration of tariff statement period. Includes deemed minimum demand charge of 1kW.</td>
</tr>
<tr>
<td></td>
<td>Part 2: Demand charge component ($kW/day)—set at 40 percent of intended level for duration of tariff statement period. Includes deemed minimum demand charge of 1kW.</td>
<td></td>
</tr>
<tr>
<td>Charging windows</td>
<td>One charge—applies throughout the year. No peak vs shoulder charges$^{47}$</td>
<td>One charge—applies through the year. No peak vs shoulder charges.</td>
</tr>
<tr>
<td></td>
<td>Day: rate applies 7 days per week. Christmas Day excluded.$^{48}$</td>
<td>Day: peak rate applies workdays. Weekends/Public holidays excluded.</td>
</tr>
<tr>
<td></td>
<td>Time: rate applies from 4–9pm.$^{49}$</td>
<td>Time: rate applies from 12:00–9pm.$^{50}$</td>
</tr>
<tr>
<td>Calculation</td>
<td>Same as above</td>
<td></td>
</tr>
</tbody>
</table>

**Mandatory 'transitional' consumption usage tariffs**

This tariff will be assigned to residential and small business customers with annual consumption volumes above the thresholds noted above, but which do not have metering enabling demand tariffs. These structures mirror current consumption based charges (fixed and consumption usage component charged as an inclining block). However, the level of the consumption usage component will be set higher than the current charge.$^{51}$ Information has not been provided on the rationale for why these are set at a higher rate.

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$^{42}$ SA Power Networks, Tariff Structure Statement proposal, pp.43–47.
$^{43}$ Alterations include physical supply changes; new inverter approval; new major appliances > 25amps; change to three phase power.
$^{44}$ Following a rule change to expand competition in metering, new and replacement meters will need to be smart meters. These meters will enable time varying and peak reflective pricing.
$^{45}$ Alterations include physical supply changes; new inverter approval; new major appliances > 25amps.
$^{46}$ Following a rule change to expand competition in metering, new and replacement meters will need to be smart meters.
$^{47}$ Peak charge for demand is set at a lower price than the opt-in tariff option as demand is priced at 40% of LRMC.
$^{48}$ SA Power Networks, Tariff Structure Statement overview paper, p.28.
$^{49}$ SA Power Networks, Tariff Structure Statement proposal, pg.46.
$^{50}$ SA Power Networks, Tariff Structure Statement proposal, pg.53; and SA Power Networks, Tariff Structure Statement Overview paper, p.29.
$^{51}$ SA Power Networks, Tariff Structure Statement proposal, pg.43.
Options and complements:

Apart from the opt–in demand tariffs, other time–varying and demand reflective tariff structures are not proposed to be offered. Locational prices are not offered to residential customers as there is a government obligation to charge equally regardless of location on the network. Locational distribution pricing has also not been offered for customer classes not subject to this obligation.

To complement the pricing strategies, there is a stated intention to trial demand management options including battery storage. No detail has been provided on this or other plans for demand management activity designed to complement pricing and deal more directly with localised areas of potential network constraints.

3.2 AER observations

Proposed tariffs

The NPO requires that tariffs reflect costs, and these are driven by network congestion at peak demand times. There are various tariff options that distributors might seek to use, shown in figure 3. The cost reflectivity of each option and how it influences efficient investment and usage decisions at peak times varies according to assumptions as set out in figure 3.

Figure 3: Examples of different tariff options

For large businesses with high voltage network connections, most existing tariffs are already demand based. No new/alternative tariff structures are proposed. We want to explore if further improvement in these tariffs is possible and any practical constraints to doing so. That is, exploring whether these tariff structures can move further along the cost reflectivity spectrum required by the NPO and pricing principles.

For residential and small businesses with low voltage connections, the key changes proposed are the demand tariffs to be assigned to customers in certain situations over time and otherwise made available on an opt–in basis. In our view, these approaches:

- Appear a legitimate and sound step to move along the cost reflectivity spectrum as the NPO and pricing principles require. These tariffs depart from charging mainly based on consumption volumes as these are factors that do not drive network costs. While these

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structures still include a consumption usage component, they now include a demand component aiming to target times of anticipated network stress from peak demand.

- Include components with lower rates at off-peak times of the year, and higher rates at peak times. This empowers customers to consider switching off appliances, draw on battery storage or switch business operating shifts during these times to manage bills.

**Tariff design**

Table 7: AER observations on proposed tariff design and implementation approach

<table>
<thead>
<tr>
<th>Feature</th>
<th>Observations</th>
</tr>
</thead>
</table>
| Assignment triggers      | The tariff statement sets a long term strategy to transition all customers onto tariffs that better reflect the costs that their maximum demands place on the network. This will be a gradual implementation given the need to mitigate impacts on existing customers, and the constraints from a lack of enabling metering for most customers. Implementation will depend on the speed at which customers make new investments or acquire new meters. SA Power Networks refers to this as the "wait and see" model.  

The plan's merit in terms of how it might support customers making decisions on their energy use is discussed in section 4. The proposed model includes assignments based on triggers or thresholds being met. While triggers appear linked to the provision of smart meters, the rationale for why customers should be assigned a demand tariff on a consumption threshold basis has not clearly been set out—that is, what characteristics of the demand profile of these customers efficiently requires them to be assigned to the demand tariff? |
| Charging parameters      | Fixed component:                                                                                                                                 |
|                          | Most residential and small business customers are currently charged a consumption based tariff containing a fixed charge. A key feature of the 'opt-in' and 'transitional' demand tariffs is that they don't include a direct fixed charge to recover general / shared network costs. The only direct fixed charge that might be included covers metering costs. This only applies if a customer has a manually read interval meter (type 5) provided by SA Power Networks. 

Rather than apply a direct fixed charge, general network costs are proposed to be recovered via the consumption and demand tariff components. The latter, will include a deemed minimum level of demand for which customers will be charged. In our view:  

- A minimum level of demand might serve the same role as a fixed charge. That is, it is a cost that cannot be avoided through a customer's usage decisions, it will apply irrespective of actual use.  

- The tariff statement doesn't detail the economic rationale for why certain costs are efficiently recovered by a form of fixed charging parameter, be it a direct fixed charge or minimum demand level. This will be explored. It might be that a minimum level of demand is a more flexible approach for customers than a direct fixed charge. |

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54 SA Power Networks, *Tariff Structure Statement proposal*, pg.44.

55 It is unclear for example, if these are the costs in addition to the LRMC that are required by the distributor to make up its total efficient costs, referred to in clause 6.18.5(g).

56 That is, it might better ensure that signals for efficient pricing are not distorted, or that high fixed charges do not risk inefficient network disconnection.
The minimum level of demand was reduced to 1kW following stakeholder input. Other than for customers who might be away from their residence for some time (e.g. holiday homes), it might be that this level of demand will in most cases be surpassed by customers. The use of household lights and basic kitchen appliances might be sufficient to reach a demand of 1kW.

If most customers would surpass the minimum demand even if they alter the use of intensive appliances such as air conditioners, then the existence of a minimum demand level might not be noticed. This would provide the distributor with the cost recovery certainty that it might need for certain costs.

A challenge in designing demand and other time varying tariffs is linking these to times of anticipated network stress. Not doing so, risks creating a tariff that might over signal congestion at most network points and under–signal congestion at those (few) locations where a network investment might be needed. For this reason, demand tariffs are proposed to apply differently at certain times, days or months—‘charging windows’.

Different charging windows are proposed for opt–in demand tariffs compared to those that will be assigned to customers on a transitional basis. The latter are simplified to manage impacts on customers that are transitioned and who have an enabling meter.

**Opt–in demand tariffs**

For residential and small business customers, the windows will charge higher peak rates at certain times of the day, and in certain months—claimed to correspond to periods when the network is under most stress due to peak demand. Our observations are that:

- Figure 2 shows that at least for two chosen summer days in 2014, the time of day windows appear to correspond closely to when business and residential total demand peaks. However, this graph might suggest that the window for business customers might more effectively be set one hour earlier.

- While these windows appear intuitively sound, the tariff statement would benefit from more information and graphs showing demand across different days and months of the year. The information used to set the charging windows has not been stated.

- It might be informative to examine not only total demand across the whole network but also the number of assets (e.g. zone substations or terminal stations) that have reached their peaks during certain times, days, months.

Alternatively, it might be possible to examine how many major assets are likely to become constrained over a suitable forecast period and the times, days and months of demand that drive these assets to peak. As noted earlier, it is not necessarily the occurrence of maximum demand periods that drive networks to spend but rather, whether these periods mean particular assets will become constrained. A desire to avoid constraints and outages drives network expenditure.

**Mandatory transitional demand tariffs**

The choice of charging windows appears driven by a desire to manage impacts on customers that will be assigned this tariff. In contrast to the opt–in tariff, the transition tariff will not charge both a peak and shoulder rate during certain months. Only one charge will apply—a peak rate applying from 4–9pm (residential) and 12-9pm (small businesses) irrespective of month.

This appears to smooth the demand charge across the year rather than having higher

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rates in summer. The trade–off to consider is that this won’t assist in informing these customers on the importance of considering their usage during months when the network peaks, in order to avoid contributing to further network costs.

| Charge         | Calculating the demand charge component as the highest 30 minutes of a customer’s usage in a given month, sends a strong message that it is not total consumption volumes that drive network costs but total capacity requirements at a point in time. This appears reasonable and consistent with approaches proposed by other distributors. In response to apparent feedback from stakeholders that this calculation sends too sharp a signal, SA Power Networks is intending to explore the merit of averaging the calculation over two hours. Consideration is needed on whether this would derive much benefit by way of consumer impact protection, noting that it would serve to further average and weaken a price signal that itself is already highly averaged. |
| Design         | The tariff statement does not sufficiently detail the rationale for the design of the transitional consumption usage tariff that will be assigned to customers who consume above a threshold but which do not have enabling metering. |

**Tariff options and complements**

Distributors need to show that their tariff approaches progress along the spectrum of cost reflectivity required by the NPO and pricing principles. Practical challenges and concerns for existing customers will temper the degree of cost reflectivity that might be achieved with tariffs that are mandated. However, offering optional tariffs above a mandated tariff (that itself seeks to signal peak costs) for customers to choose from should they want to change their usage could overcome these challenges. These tariffs could more accurately signal network costs at particular times or even locations. Retailers with a customer willing more exposure to peak signals could approach distributors to access such an option from a menu. We are interested in stakeholder views on whether the cost reflectivity requirements in the NPO and pricing principles might be better achieved in a way that still manages customer impacts, by a tariff statement including a two–speed approach, as shown below.

**Figure 4: Menu of tariff options**

SA Power Networks’ tariff statement includes some examples of this, offering opt–in versions of its demand tariff with charging parameters that more closely signal peak periods on the network and which charge higher rates. However, it is worth considering if further options and/or different tariff structures could be made available. If there are customers willing to take on greater levels of cost reflectivity they should not be prevented from doing so. This would also serve to not inhibit innovation by retailers.

There are interactions between the degree of cost reflectivity achieved with proposed tariff structures and the need for other approaches. The prospect of future constraints on the
network due to peak demand can be met through a combination of options such as building more capacity on the network, sending pricing signals to motivate efficient use, or procuring of demand management solutions. In our view, the tariff statement would benefit from:

- Presenting these options in a more integrated way, allowing stakeholders to more effectively consider the interactions and the case for particular tariff options. For example, it might help stakeholders in their feedback to SA Power Networks on the appropriateness or implications of the proposed speed of tariff reform and transitions.

- Setting out if there are demand management initiatives intended to be procured to complement pricing approaches and deal more specifically with network pockets that might be facing more significant demands. An issue that appears particularly relevant here is the requirement in the pricing principles for SA Power Networks to consider how network costs might be driven by customer loads in different network locations. While locational pricing is not permitted in South Australia for small customers, there is no restriction on such options for large businesses. However, it might be that given possible practical or other concerns with locational pricing, that there is an increased need for demand management solutions to deal with localised constraints.

Table 8: Questions for stakeholders

<table>
<thead>
<tr>
<th>Questions for Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General issues</strong></td>
</tr>
<tr>
<td>(1): Does the tariff statement effectively present pricing strategies within the broader context of network planning and demand management options?</td>
</tr>
<tr>
<td>(2): What are the advantages and dis-advantages of using the times, days and months of anticipated constraints on network assets to set charging windows for a demand tariff, as opposed to observations of past demand on the network as a whole?</td>
</tr>
<tr>
<td>(3): Does the tariff statement sufficiently inform stakeholders on the times, days and months when the network is likely to be under most stress and therefore the ideal timing of the charging windows?</td>
</tr>
<tr>
<td>(4): What are the advantages and disadvantages of the proposal to have a minimum level of demand in demand based tariffs instead of including a direct fixed charge component?</td>
</tr>
<tr>
<td>(5): What are the advantages and disadvantages of calculating a demand tariff over a narrow 30 minute period as opposed to two hours as SA Power Networks intends to explore?</td>
</tr>
<tr>
<td><strong>Proposed mandatory tariffs</strong></td>
</tr>
<tr>
<td>(6): Do existing customers require greater protection from tariff change impacts compared to new customers or customers making new investments (such that they might require a new smart meter)?</td>
</tr>
<tr>
<td>(7): What are the advantages and disadvantages of assigning a demand tariff to customers consuming above a threshold or triggering an assignment by having a new/altered connection?</td>
</tr>
<tr>
<td>(8): Will customers sufficiently understand the proposed triggers and thresholds for being assigned a demand tariff at the time of making a new investment (e.g. solar panels, 3-phase power etc)? What practical challenges might result?</td>
</tr>
<tr>
<td>(9): What are the advantages and disadvantages of the 'transitional' demand tariff (being assigned to certain customers) not reflecting seasons (that is, not charging higher in summer vs winter)?</td>
</tr>
<tr>
<td><strong>Proposed opt–in tariffs</strong></td>
</tr>
</tbody>
</table>

(10): What are the advantages and disadvantages of SA Power Networks offering additional opt-in tariffs, including more cost reflective variants of the proposed demand tariff or other tariff designs?

(11): Are there practical impediments to offering a menu as opposed to a single set of opt-in tariffs?
4 Impacts of tariffs

SA Power Networks consulted extensively with its consumer and retailer stakeholders. This is an important process given that distributors must manage the impacts of tariff changes on customers and are allowed to depart from cost reflectivity goals in order to do so. 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 raised, and any unresolved issues.

4.1 Proposal

Impacts identified

The tariff statement only displays quantitative data on impacts for residential customers without solar PV units (figure 5). However, extensive, albeit sample based analysis appears to have been provided to stakeholders during the tariff statement's development, including:

- Case studies provided at workshops—examining impacts against particular customer characteristics (appliance use), and types of customers (residence, business, school etc).
- Information in a consultation paper that SA Power Networks published after several workshops, to allow stakeholders formal input. This information is displayed in appendix 3, with data for residential customers with PV units shown in figure 6.

As most customers in South Australia do not have access to interval/smart metering, the information presented has been based on a sample of customers with smart meters. The information also assumes no change in a customer’s behaviour in response to the new prices.

Figure 5: Residential without PV—impact of cost reflective network prices vs current prices.

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Clauses 6.18.5(c)&(d).

As most consumers in South Australia do not currently have access to a smart or interval meter, the data that SA Power Networks was able to draw on will be less precise than what might otherwise be available.


These charts from the consultation paper plot consumption volumes against average monthly demand, and for each customer class display impacts of moving from existing tariff structures to cost reflective prices—being the proposed opt–in demand tariffs. This shows that:

- There is a potentially large diversity in the peak demand profiles of customers in South Australia. Further, while some residential customers might consume relatively small annual volumes of energy, their peak demands can still be quite high.

- The percentage of residential customers that are likely to face increases in network charges will be greater for customers with solar PV units than for those without.

- While most residential customers might face increases in network charges, it appears that the most business customers will face decreases in network charges (see appendix 3).

**Transition methods—impact management**

Various methods are proposed to manage the impacts on customers of moving to more cost reflective tariff structures, set out in table 9.

Table 9: Transition methods proposed—impact management

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opt–in and opt–out of cost reflectivity</td>
<td>Demand tariffs designed to better reflect costs than current approaches will be mandatorily assigned to customers but only when certain triggers (new customers or new investments) or usage thresholds are met.</td>
</tr>
<tr>
<td>Opting into greater levels of cost reflectivity</td>
<td>For customers seeking to opt–into greater levels of cost reflectivity, demand tariffs with higher peak rates and demand components recovering 100 percent of their intended costs will be available to residential and small business customers.</td>
</tr>
<tr>
<td>Cost ramp up - transitional tariffs</td>
<td>For demand tariffs mandated to eligible customers, the demand component will recover 40 percent of its intended amount, in contrast to the 100 percent recovered in the opt–in tariff. This will remain constant for the tariff statement.</td>
</tr>
</tbody>
</table>

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period. From 2020, the level will increase annually by 20 percent until reaching 100 percent of its intended amount by 2023, representing a 6 year transition.\(^6^5\)

| Simplified windows - transitional tariffs | As discussed in section 3, there will only be one peak charge (no shoulder) and it will apply equally during peak times regardless of the month. |

4.2 AER observations

The role of retailers

Examining impacts on end-use customers by considering distribution tariffs is difficult as this is only one component of a customer's retail bill. The actual impact on a customer will depend on 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 SA Power Networks on these issues.

Assumed impacts of network tariffs

If we assume retailers simply passed on distribution tariffs, examining impacts becomes simpler. Any tariff changes will impact most significantly on existing customers who have invested in assets (e.g. air conditioning, hot water heating, swimming pools, solar panels etc) or based the timing of their business operating shifts on the basis of existing tariff structures.

The tariff statement generally lacks detail on the quantitative impacts of the proposed changes on customers. Having this information contained in a tariff statement would assist with ensuring that the tariff approaches are capable of being understood and provide context to understanding if the approaches to implement the new tariffs will mitigate customer impacts.\(^6^6\)

However, it does appear that SA Power Networks has undertaken extensive analysis and presented this information to stakeholders—albeit using current limited data—sets based on tariff trials and customers with smart meters. Their consultation paper sets out useful information on impacts by tariff class showing the spread of network bill impacts by customer characteristics (peak and total consumption). We are interested in stakeholder views on whether this information was sufficiently customised to inform their views on the merit of the proposed tariff reform implementation plan and methods by which to mitigate impacts.

\(^6^5\) SA Power Networks, Tariff Structure Statement Overview Paper, pg.28.

\(^6^6\) Required by clauses 6.18.5(h)&(i).
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 several possible objectives. We want to hear from stakeholders on our observations (set out in table 10) 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.67

2. Minimising the inequitable treatment of customers during the transition to greater cost reflectivity.68

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 customers desire.69

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.70

5. Allowing choice of greater levels of cost reflectivity and not constraining retailer innovation—customers willing and able to face greater signals (via retailers) of network cost drivers should not be prevented from doing so.71

Table 10: Transition methods proposed and AER observations.

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opt–in and opt–out of cost reflectivity</td>
<td>The proposed strategy for managing customer impacts appears a methodical approach to tariff reform, noting that:</td>
</tr>
<tr>
<td></td>
<td>• There might be greater benefit in assigning all customers onto more cost reflective tariffs, away from current consumption based tariffs, and then using other approaches to manage customer impacts such as allowing opt–outs or ramping up the level of the tariff components gradually. However, SA Power Networks is constrained in considering such options as most of its residential and small business customers currently do not have an interval or smart meter. For those that do, and consume above a threshold, new tariff assignment would be required.</td>
</tr>
</tbody>
</table>
| | • Given the lack of metering, focussing on key triggers appears sound. SA Power Networks will only assign more cost reflective tariffs to customers when they make new investments or establish new network connections. New connections and alterations requiring new meters would under new metering rules also trigger the need for that meter to be a smart meter, thereby enabling demand and time

67 Clause 6.18.5(h) requires distributors to manage impacts on customers of tariff changes.
68 Avoiding cross–subsidies is an outcome of achieving tariffs that reflect costs, as required by the NPO, and pricing principles in clauses 6.18.5(e)–(g).
69 While the rules do not explicitly refer to retailers, the task of implementing new prices that customers desire will be part of the retailer’s role. A transition that is too fast might risk retailers having insufficient time to effectively consider how to incorporate new network tariffs into their offerings and risk not achieving better price signals for customers.
70 Clauses 6.18.5(h)&(i) refer to a customer’s ability to understand and mitigate the impact of tariff changes.
71 Providing options with varying degrees of cost reflectivity might be a reasonable means of progressing along the cost reflectivity spectrum suggested by the NPO and pricing principles while managing impacts on customers and working within the constraints of the differing metering technologies that different customers might have access to.
varying tariffs to be provided. Clarification is however needed whether all the alterations specified by SA Power Networks would in fact require a new meter?

- The approach distinguishes existing customers who we consider need most protection as they have made investments based on current charging arrangements, from other customers who are considering making new investments. From an efficiency perspective it could be useful for customers to consider the demand tariff at the point of making the new investment. However, we seek stakeholder views on whether there is a lessened need to mitigate the impacts on customers making new investments (including new customers) such that they should be assigned to a full demand tariff. Further, whether additional protections such as a temporary opt-out measure need consideration.

Another issue that might need considering is whether customers receiving an advanced meter but for reasons other than SA Power Network’s specified triggers should also be assigned a demand tariff. This includes where a customer is required to receive a smart meter when its current meter fails, or where such a meter is provided to a customer as part of a retailer-led offer to the customer.

<table>
<thead>
<tr>
<th>Opting into greater levels of cost reflectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>As noted earlier, we consider there to be merit in exploring if customers should have access to a menu of more sophisticated tariff options that send stronger signals of network peaks, offered on an opt-in basis. We welcome the proposal to offer an opt-in version of a demand tariff, with a higher peak rate and seasonal distinctions in its charging windows. Customers willing to take on greater levels of cost reflective tariffs should not be prevented from doing so. It is also worth exploring if there are any further options that could be made available across all customer classes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost ramp up - transitional tariffs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradually ramping up the level of the demand component within the demand tariff assigned to customers on a mandatory basis appears a reasonable approach to mitigate impacts on customers. We observe that:</td>
</tr>
<tr>
<td>- There appears merit in the proposal to stagger the implementation between customers assigned the new demand tariff on a trigger as opposed to threshold basis. The need to mitigate impacts on threshold assigned customers might be greater as these customers might not necessarily have made new investments. Therefore, only assigning these customers from 2018-19 as opposed to 2017-18 (for trigger customers), and then ramping-up the level of the demand component over 5 years could provide a suitable period over which customers and retailers can become better informed and consider their response to the new tariff.</td>
</tr>
<tr>
<td>- For trigger assigned customers, we seek stakeholder views if a shorter transition than 6 years is warranted given that these are customers making new investments rather than existing customers (including those consuming above a threshold). A transition might not necessarily need longer than 2–3 years to enable information provision and time for retailers and customers to consider how to respond.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Simplified windows - transitional tariffs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simplifying the charging windows for the mandatory demand tariffs also appears a reasonable way of mitigating impacts on customers being assigned this tariff. However, consideration might be needed on whether this proposal, by not distinguishing between seasons might communicate an incorrect message to customers on cost drivers and how to consider usage decisions in response to these drivers. It might not assist customers in considering the implications of their choice of appliances that might be used predominantly in summer (e.g. air conditioners).</td>
</tr>
</tbody>
</table>
### Table 11: questions for stakeholders

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>(12): Have we accurately described the issues relevant to impact management, are there others?</td>
</tr>
<tr>
<td>(13): Are there any other key issues concerning impacts of tariffs not identified in this paper? In particular:</td>
</tr>
<tr>
<td>- Are there any matters that stakeholders raised with SA Power Networks and were inadequately addressed?</td>
</tr>
<tr>
<td>- Are there any other approaches to transition customers that should have been considered?</td>
</tr>
<tr>
<td>(14): Has SA Power Networks sufficiently customised its customer impact information identifying the benefits of opting-into a demand tariff, or the merit of proposed transitions for customers assigned a demand tariff?</td>
</tr>
<tr>
<td>(15): Will customers be able to understand the new tariffs to relate their use of electricity to these tariffs and decide how to respond?</td>
</tr>
<tr>
<td>(16): Do existing customers require a greater protection from the impact of tariff changes than customers who are new or making new significant investments?</td>
</tr>
<tr>
<td>(17): What are the advantages and disadvantages of new investment customers and customers consuming above a threshold being automatically assigned a new demand tariff?</td>
</tr>
<tr>
<td>(18): What are the advantages and disadvantages of the 'transitional' demand tariff (assigned to customers), having its level increasing over 6 years, and not reflecting a higher summer vs winter charge?</td>
</tr>
</tbody>
</table>
Appendix 1: Proposed tariff structures and transitions

Residential and Low Voltage Business tariffs:

Figure A.1.a: Residential and Low Voltage Business new and existing tariffs

<table>
<thead>
<tr>
<th></th>
<th>Fixed</th>
<th>Consumption</th>
<th>Monthly Demand charge ($/kW/day) (d)</th>
<th>Monthly demand charge ($/kVA/day)</th>
<th>Annual Agreed Demand Charge ($/kVA/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flat</td>
<td>TOU</td>
<td>Block</td>
<td>Controlled Load</td>
<td></td>
</tr>
</tbody>
</table>

### Residential - Existing Tariffs
- General:
  - Monthly actual kW demand solar sponge (b)
  - Monthly actual kW demand (b)

### Residential - New Tariffs
- Single-rate transition (a)
  - Monthly actual kW demand transition (c)
- Solar (a)
  - Monthly actual kW demand social (b)

### Low Voltage Business - Existing Tariffs
- Unmetered
- Single-rate
- Two-rate
  - Monthly actual kVA demand (c)
  - Monthly actual kVA demand transition (c)
- Annual agreed kVA demand (e)

### Low Voltage Business - New Tariffs
- Monthly actual kW demand (b)
- Monthly actual kW demand transition (c)
- Single-rate transition
- Two-rate transition

(a) Inclining two block tariff.
(b) Demand charge is higher for summer months (Nov-Mar) than non-summer months.
(c) Demand charge is consistent for all months.
(d) Minimum demand charge of 1kW applies.
(e) Demand charge includes two block and additional charge.
Distribution Transformer Business tariffs:

These customers have capacity requirements of 150 kVA and above and are generally supplied directly from a distribution transformer. The tariff structures applying to this tariff class mirror those applying to the low voltage business tariff class, and include:

- Agreed kVA demand tariff
- Monthly actual kVA demand tariff
- Monthly actual kVA demand transition tariff
- Business monthly actual kW demand tariff

High voltage business and Major business tariffs

Figure A.1(e) HV Business tariffs—existing tariffs (no change)

<table>
<thead>
<tr>
<th>SAPN - High Voltage Business</th>
<th>Fixed</th>
<th>Consumption</th>
<th>Annual Agreed Demand Charge ($/kVA/day)(a)</th>
<th>Monthly demand charge ($/kVA/day)(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flat</td>
<td>TOU</td>
<td>Block</td>
</tr>
<tr>
<td>Monthly Actual kVA Demand</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Agreed kVA Demand &lt; 400kVA</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Agreed kVA Demand</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) Includes two blocks and additional charging components.
(b) Includes summer, shoulder and off-peak charging windows.

Figure A.1(f) Major Business tariffs—existing tariffs (no change)

<table>
<thead>
<tr>
<th>SAPN - Major Business</th>
<th>Fixed(a)</th>
<th>Consumption</th>
<th>Annual Agreed Demand Charge ($/kVA/day)(b)</th>
<th>Monthly demand charge ($/kVA/day)(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flat</td>
<td>TOU</td>
<td>Block</td>
</tr>
<tr>
<td>Zone Substation Annual Agreed kVA Demand (non-locational)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub Transmission Annual Agreed kVA Demand (non-locational)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zone Substation Annual Agreed kVA Demand (locational)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub Transmission Annual Agreed kVA Demand (locational)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) Fixed charge is locational TUoS charge
(b) May include two blocks and additional block charging components
(c) May include summer, shoulder and off-peak charging components
Figure A.1.(g): SA Power Networks residential tariff overview table.

Presented below are the proposed changes to our residential tariffs.

<table>
<thead>
<tr>
<th>Demand window Months of the year</th>
<th>Days of the week</th>
<th>Hours of the day (all local SA time)</th>
<th>Fixed charges</th>
<th>Demand reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential (Actual) Demand – transition</td>
<td>Peak demand charges will apply throughout the year.</td>
<td>Peak demand charges will apply 7 days per week, Christmas Day is exempt.</td>
<td>Peak demand charges will apply between the hours of 4pm and 9pm SA local time.</td>
<td>No fixed charges apply. A minimum demand charge of 15kW applies.</td>
</tr>
<tr>
<td>Residential (Actual) Demand</td>
<td>Peak demand charges will apply from November to March. Shoulder demand charges from April to October.</td>
<td>Peak and shoulder demand charges will apply 7 days per week, Christmas Day is exempt.</td>
<td>Peak and shoulder demand charges will apply between the hours of 4pm and 9pm SA local time.</td>
<td>No fixed charges apply. A minimum demand charge of 15kW applies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff type</td>
<td>Existing single rate tariff</td>
<td>No new customers from July 2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solar tariff</td>
<td>Subject to Federal Court decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social tariff</td>
<td>Subject to Federal Court decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triggers</td>
<td>New and altered connections (approx. 20,000 pa)</td>
<td>Transition tariff – Demand charges at 40% of final value for 2012–20. Will increase to 100% by July 2023.</td>
<td>N/A</td>
<td>40% CR</td>
<td>40% CR</td>
<td>40% CR</td>
<td>Increases by 30% pa to 100% CR by 2022–23</td>
<td>100% CR</td>
<td></td>
</tr>
<tr>
<td>Thresholds</td>
<td>&gt;20MWh annual consumption (4000 customers)</td>
<td>Transition tariff – Demand charges at 40% of final value for 2012–20. Will increase to 100% by July 2023. When advanced interval meter acquired.</td>
<td>N/A</td>
<td>40% CR</td>
<td>40% CR</td>
<td>Increases by 30% pa to 100% CR by 2022–23</td>
<td>100% CR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repeat tariff (total tariff – no real changes for repeat)</td>
<td>Transition usage based tariff – for customers with an old accumulation meter.</td>
<td>N/A</td>
<td>40% CR</td>
<td>40% CR</td>
<td>Increases by 30% pa to 100% CR by 2022–23</td>
<td>100% CR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opt In</td>
<td>Residential demand tariff</td>
<td>100% cost reflective.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Residential demand tariff – solar sponge option**</td>
<td>100% cost reflective. Includes Time of Use (ToU) usage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential customer numbers on cost reflective tariffs (mandatorily – may be more with opt-in)</td>
<td>0</td>
<td>0</td>
<td>20,000 est</td>
<td>44,000 est</td>
<td>64,000 est</td>
<td>...</td>
<td>771,000 est</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of residential customers on cost reflective tariffs (mandatorily – may be more with opt-in)</td>
<td>0</td>
<td>0</td>
<td>2.6% est</td>
<td>6% est</td>
<td>8% est</td>
<td>...</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Alterations include physical supply changes; new inverter approval if Solar tariff permitted, approvals >2.5kW and new major appliances >5 kVA. **Solar sponge option: Lower usage charges apply 11am–9pm Central Standard Time (11am–9pm Central Summer Time). Usage prices at other times slightly higher than regular Residential demand tariff rates.


Tariff Structure Statement proposals
Figure A.1.(h): SA Power Networks small business tariff overview table.

<table>
<thead>
<tr>
<th>Actual Demand (kW) – transition</th>
<th>Demand window</th>
<th>Months of the year</th>
<th>Days of the week</th>
<th>Hours of the day (all local SA time)</th>
<th>Fixed charges</th>
<th>Demand reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak demand charges will apply throughout the year.</td>
<td>Peak demand charges will apply on working weekdays only.</td>
<td></td>
<td></td>
<td>A supply charge $100pa applies. A minimum demand charge of 1kW applies.</td>
<td>Maximum demand is reset each month, actual demand for the month applies.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actual Demand (kW)</th>
<th>Demand window</th>
<th>Months of the year</th>
<th>Days of the week</th>
<th>Hours of the day (all local SA time)</th>
<th>Fixed charges</th>
<th>Demand reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak demand charges will apply from November to March. Shoulder demand charges apply from April to October.</td>
<td>Peak and shoulder demand charges will apply on working weekdays only.</td>
<td></td>
<td></td>
<td>No fixed charges apply. A minimum demand charge of 1kW applies.</td>
<td>Maximum demand is reset each month, actual demand for the month applies.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actual Demand (kVA)</th>
<th>Demand window</th>
<th>Months of the year</th>
<th>Days of the week</th>
<th>Hours of the day (all local SA time)</th>
<th>Fixed charges</th>
<th>Demand reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak demand charges will apply from November to March. Shoulder demand charges apply all year around.</td>
<td>Peak and shoulder demand charges will apply on working weekdays only.</td>
<td></td>
<td></td>
<td>No fixed charges apply.</td>
<td>Maximum demand is reset each month, actual demand for the month applies.</td>
<td></td>
</tr>
</tbody>
</table>

**Timeline**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transition tariffs</td>
<td>No new customers from July 2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New and altered connections*</td>
<td>Transition tariff – Demand charges at 40% of final value for 2017-20. Will increase to 100% by July 2023.</td>
<td>N/A</td>
<td>40% CR</td>
<td>40% CR</td>
<td>40% CR</td>
<td>Increases by 20% pa to 100% (R by 2023)</td>
<td>100% CR</td>
<td></td>
</tr>
<tr>
<td>&gt;40MWh annual consumption (6,700 customers)</td>
<td>Transition tariff – Demand charges at 40% of final value for 2017-20. Will increase to 100% by July 2023. When advanced interval meter acquired. Transition usage based tariff – single rates or 2 rate for customers with an old accumulation meter.</td>
<td>N/A</td>
<td>40% CR</td>
<td>40% CR</td>
<td>40% CR</td>
<td>Increases by 20% pa to 100% (R by 2023)</td>
<td>100% CR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Opt in Multi-site customers</td>
<td>Price guarantee offer**</td>
<td>100% cost reflective.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual demand tariffs</td>
<td>100% cost reflective.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Business customer numbers on cost reflective tariffs (mandatory – may be more with ctp-in) | 3000 est | 4000 est | 5000 est | 11,700 est | 14,700 est | ... | 97,100 est |

| % of business customers on cost reflective tariffs (mandatory – may be more with ctp-in) | 3.1% est | 4.1% est | 5.1% est | 14% est | 15% est | ... | 100% |

*Customers include physical supply changes, new meter approval if Solar tariff permitted, approval >1.2kW and new major appliances >5amps. **Price guarantee offer**: Customers >40MWh currently on usage-based tariffs can participate in the program to June 2018. At that time, customers with advanced meters get assigned to a cost reflective tariff (the default tariff for this is the transition tariff however they can elect to continue with the full cost reflective tariff if they prefer). Customers >40MWh can participate in the program through to June 2020.

Appendix 2: Defining and linking costs to customers

Proposals

Grouping and assigning customers

SA Power Networks has 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 broad tariff classes based on the voltage level of their distribution network connection. The end result is that customers are distinguished as:
  - Major business—connected at 33–66kv or at 11kv from substation
  - High voltage (HV) business—connected at 11kv
  - Distribution Transformer Business—connected to distribution transformer at 150kv or more. This is a new tariff class definition for business customers with characteristics differing to LV businesses in that they use less network assets being connected to a transformer rather than a LV mains.\(^74\)
  - Low voltage (LV) business—connected to LV network
  - Residential LV—connected to LV network\(^75\)

- Further distinctions between customers are then made according to type of customer (existing or new), the type of meter installed and annual consumption and demand profiles

- Finally, the design of the proposed tariff (i.e. the demand based tariff) is relied on as the means of charging customers based on how their demand profile impacts network costs.

- Other distinctions between residential customers were proposed in order to derive a specific approach for customers with solar PV units or customers in financial hardship.

Forward and residual costs and causation links

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

- Applied the average incremental cost method to calculate LRMC because it is based on a long term planning period which takes a longer view of costs and provides more stable prices than other LRMC approaches.\(^76\)

- LRMC was calculated over a ten year period up to 2020:
  - Only 5 of those years are forecasts.
  - A forecast developed as part of the previous regulatory proposal in 2010 was used.

---

\(^74\) SA Power Networks notes that these customers are generally large customers with load factors and diversity of demand similar to other large customers, whereas LV business customers are generally small customers with poorer load factor but greater diversity of demand.

\(^75\) SA Power Networks, Tariff Structure Statement 2017-2020, p.41.

SA Power Networks notes that in its revised tariff statement proposal it intends to review its LRMC figures to reflect the AER’s final regulatory determination figures.\(^\text{77}\)

- The costs input to the LRMC calculations include forecast growth related capital expenditure, and forecast incremental growth related operating expenditure.
- LRMC was calculated at the tariff class level by examining expenditures on assets associated with particular voltage levels. A model is presented showing how revenues are allocated to tariff classes—apportioning distribution costs, PV FIT cost recovery and transmission costs at the asset level (sub-transmission lines, zone substations, HV lines, distribution transformers, LV lines and services).\(^\text{78}\)
  - Some assets are apportioned according to customer numbers, while tariff classes are only charged for asset categories that they use. 50 percent of asset charges are allocated to demand charging components as they reflect their LRMC.
  - For major business customers, SA Power Networks pass through the locational transmission charges for each individual business.\(^\text{79}\)

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. We expect the same rationale 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. SA Power Network’s overall approach by which to allocate the costs of particular network assets to customers that cause them appears reasonable. However, we observe that:

- The rationale is unclear for why customers who consume above the threshold amount (that would trigger the need for the transitional demand tariff) but which do not have an enabling meter, should be assigned to a different and transitional version of their existing consumption based tariff. That is, how the costs associated with the usage characteristics of these customers has been determined.

- The process by which SA Power Networks identified and linked costs to customers via its "Solar Tariff" and "Social Tariff" was subject of a federal court decision, which upheld the AER’s decision to reject these two tariffs in the 2015–16 annual pricing proposal. SA Power Network’s tariff statement, submitted prior to the court’s judgement indicates that SA Power Networks might need an extensive review of tariff statement proposal following the judgement. At this stage we do not comment further on these aspects of the tariff statement proposal.

- The tariffs applying to businesses in the new proposed tariff class of distribution transformer business appear to mirror those that also apply to customers within the low

\(^{77}\) SA Power Networks, Tariff Structure Statement 2017-2020, Appendix B, pg.5.
voltage business tariff class. Therefore, it is unclear how these tariffs are intended to better reflect the circumstances of customers connected to transformers.
Appendix 3: SA Power Networks customer impact information

The information below was not set out in SA Power Network’s tariff statement but instead in its consultation paper, published as part of their stakeholder engagement. The information is based on a sample of customers with smart meters. It compares SA Power Networks’ existing tariffs against their proposed opt–in demand tariffs.

Figure A3i: Business single rate customers—impact of cost reflective network prices vs current prices

Figure A3ii: Business 2–rate customers—Impact of cost reflective network prices vs current prices

The median annual usage for business customers is a little less than 4,000 kWh pa (x-axis measure). Such a customer has an annual retail bill of about $1200 pa to $1400 pa depending on which retailer they use. A 40% network price change/20% retail price change would be about $260 pa. However, there are some customers who use over 100 MWh as well.

The spread of outcomes for those on a business single rate tariff is less diverse than it is for those on a business 2-rate tariff. Typically, business single rate customers are paying a higher price today for their network usage than many business 2-rate customers.

The median annual usage for business 2-rate customers is about 3,000 kWh pa (x-axis measure). Such a customer has an annual retail bill of about $1000 pa to $1200 pa depending on which retailer they use. A 40% network price change/20% retail price change would be about $220 pa. However, there are customers that use over 100 MWh as well.

The spread of outcomes for business 2-rate is quite diverse. There are large numbers of customers sampled with significant network price reductions. There is also a large number of customers with significant network price increases. We are reviewing the network price increases to ensure that these pricing signals are warranted.
Figure A3iii: Small business customers—impact of cost reflective network prices vs current prices (saving vs current charge)

The first third of the chart shows the outcomes for the majority of small business customers (1 MWh to 10 MWh) with 36% of these customers facing network charge increases above 50%. This implies very high amounts of demand being used at peak times without a commensurate use of energy at other times. The second third shows the outcomes for sampled customers in the 10 MWh to 40 MWh pa category. 19% of these customers would incur a 50% or higher network charge increase under the current proposal. For customers using 40 MWh to 150 MWh, the number of customers that would incur an increase in network charges above 50% is 6%. Note that we are reviewing such charges to ensure that such increases reflect price signals that are warranted.

The chart also shows the spread of customers receiving other levels of price increases or reductions. Larger small business customers fare better on average than the smallest business customers with these current pricing proposals.
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:

(1) the need to group retail customers together on an economically 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 reallocated) 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 re-assignment 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).

(b) 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

General issues

(1): Does the tariff statement effectively present pricing strategies within the broader context of network planning and demand management options?

(2): What are the advantages and dis-advantages of using the times, days and months of anticipated constraints on network assets to set charging windows for a demand tariff, as opposed to observations of past demand on the network as a whole?

(3): Does the tariff statement sufficiently inform stakeholders on the times, days and months when the network is likely to be under most stress and therefore the ideal timing of the charging windows?

(4): What are the advantages and disadvantages of the proposal to have a minimum level of demand in demand based tariffs instead of including a direct fixed charge component?

(5): What are the advantages and disadvantages of calculating a demand tariff over a narrow 30 minute period as opposed to two hours as SA Power Networks intends to explore?

Proposed mandatory tariffs

(6): Do existing customers require greater protection from tariff change impacts compared to new customers or customers making new investments (such that they might require a new smart meter)?

(7): What are the advantages and disadvantages of assigning a demand tariff to customers consuming above a threshold or triggering an assignment by having a new/altered connection?

(8): Will customers sufficiently understand the proposed triggers and thresholds for being assigned a demand tariff at the time of making a new investment (e.g. solar panels, 3-phase power etc)? What practical challenges might result?

(9): What are the advantages and disadvantages of the ‘transitional’ demand tariff (being assigned to certain customers) not reflecting seasons (that is, not charging higher in summer vs winter)?
## Proposed opt–in tariffs

(10): What are the advantages and disadvantages of SA Power Networks offering additional opt–in tariffs, including more cost reflective variants of the proposed demand tariff or other tariff designs?

(11): Are there practical impediments to offering a menu as opposed to a single set of opt–in tariffs?

## Customer impacts

(12): Have we accurately described the issues relevant to impact management, are there others?

(13): Are there any other key issues concerning impacts of tariffs not identified in this paper? In particular:
- Are there any matters that stakeholders raised with SA Power Networks and were inadequately addressed?
- Are there any other approaches to transition customers that should have been considered?

(14): Has SA Power Networks sufficiently customised its customer impact information identifying the benefits of opting-into a demand tariff, or the merit of proposed transitions for customers assigned a demand tariff?

(15): Will customers be able to understand the new tariffs to relate their use of electricity to these tariffs and decide how to respond?

(16): Do existing customers require a greater protection from the impact of tariff changes than customers who are new or making new significant investments?

(17): What are the advantages and disadvantages of new investment customers and customers consuming above a threshold being automatically assigned a new demand tariff?

(18): What are the advantages and disadvantages of the 'transitional' demand tariff (assigned to customers), having its level increasing over 6 years, and not reflecting a higher summer vs winter charge?