SA Power Networks

Revised Tariff Structure Statement 2017 - 2020 Part B

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Executive summary

This revised Tariff Structure Statement (**TSS**) has been prepared by SA Power Networks under the requirements of the National Electricity Rules[1] (**NER, or the Rules**). It provides details of our proposed approach to network tariffs over the period from July 2017 to June 2020. Our objective in this initial transition phase (ie 2017-20), has been to achieve an appropriate balance between implementing cost-reflective tariffs and minimising customer pricing impacts.

When developing tariffs and tariff structures our aim is to better reflect the costs incurred by SA Power Networks that result from customer decisions to use electricity at specific times and locations. Our forward looking costs are primarily driven by network augmentation works required to rectify a future network constraint to ensure we provide a safe and reliable network during periods of peak demand.

The purpose of 'cost-reflective' tariffs is to provide a pricing signal to retailers and their customers during periods of peak demand, so that customers can be appropriately rewarded if they respond by moving some of their electricity usage out of the peak demand period. Reducing peak demand will reduce the need for future augmentation investment and future network prices will be lower as a consequence. The cost-reflective tariffs also provide better signalling of future costs for those customers wishing to use more electricity.

The pricing principles in the NER require us to demonstrate an incremental movement towards more cost-reflective tariffs in our TSS, whilst taking into consideration customer pricing impacts. To help us understand our customers' views on pricing impacts, we undertook extensive customer and stakeholder engagement throughout the development of our TSS.

Following our initial TSS submission in December 2015, we established an Electricity Advisory Panel (**the Panel**) consisting of a broad demographic of our customers and stakeholders. In February 2016 we engaged The Energy Project (a consultancy company) to facilitate a tariff education session and engaged DemocracyCo (an engagement consulting company) to facilitate a deliberative session with the Panel to determine a set of Customer Impact Principles[2]. The Australian Energy Regulator (**AER**) published an Issues Paper in March 2016 and a Draft Decision in August 2016. In August 2016 we tested these principles in another deliberative session with the Panel to seek views on how we should recover solar photo-voltaic (**PV**) feed-in tariff (**FiT**) charges from our customers. We listened to feedback in submissions to the AER Issues Paper and undertook targeted consultation sessions with some of our solar industry customers, small business customers and retailers to better understand their concerns and to seek feedback on our revised TSS approach.

Our customers have clearly told us they would like a measured and methodical approach to tariff reform. Many customers are concerned they will not be in a position to make an informed decision as to whether demand based tariffs will be suitable for them in the initial period out to 2020. However, they do recognise customers should be able to opt-in to cost-reflective tariffs if they choose to do so.

In developing this revised TSS we have taken into consideration the additional findings from our recent stakeholder engagement, the stakeholder submissions to the AER's Issues Paper and the AER's Draft Decision. We have also taken into consideration the pace of tariff reform in other states.

[1] Specifically, the Distribution Pricing Rules of Chapter 6 Part I

[2] For more information on our Customer Impact Principles, refer to Part B, Section 4.

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As a result, we have made changes to some of the tariff structures proposed for residential and smaller business customers in our initial TSS. Overall the changes reflect a slower pace of change for small customers, and a greater focus on an opt-in approach. In particular, we are no longer proposing that residential customers or single phase business customers be mandatorily assigned to cost-reflective tariffs. A summary of the key changes from our initial TSS to our revised TSS are outlined in the following tables.

Table 1: Summary of changes from SA Power Networks' initial TSS for residential customers

Initial TSS	AER Draft Decision Aug 2016	Revised TSS
Mandatory assignment to a transitional kW demand tariff from 1 July 2017 for all new residential customers and all residential customers who request a significant supply alteration	Approved providing mandatory assignment commences 1 December 2017 and the alteration requires a new meter	We are no longer proposing a mandatory assignment to a cost-reflective tariff in the 2017-20 period for residential customers. These customers will be assigned to the residential single rate tariff
Mandatory re-assignment to a transitional kW demand tariff from 1 July 2018 for residential customers (> 20 MWh pa)	Did not approve	Reflects the AER's decision
Opt-in to a fully cost-reflective kW demand tariff for residential customers	Approved, however the explanation of residual cost allocation/LRMC[3] costs needs to be improved	The minimum 1.0kW demand charge in the existing opt-in tariff is being removed and replaced with a fixed charge
Solar PV tariff for customers with Type 6 metering	Did not approve	Accept the AER's decision
Social tariff for customers on a hardship scheme	Did not approve	Accept the AER's decision

Table 2: Summary of changes from SA Power Networks' initial TSS for small LV[4] business customers

Initial TSS	AER Draft Decision Aug 2016	Revised TSS
Mandatory assignment to a transitional cost-reflective demand tariff from 1 July 2017 for all new small business customers and all small business customers who request a significant supply alteration	Approved, provided that mandatory assignment commences 1 December 2017 and the alteration requires a new meter	We are no longer proposing a mandatory assignment to a cost-reflective demand tariff for single phase small business customers. We will continue to mandatorily assign multi-phase small business customers to a transitional actual demand tariff, per current practice

[3] Long Run Marginal Cost
[4] Low Voltage

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Initial TSS	AER Draft Decision Aug 2016	Revised TSS
Mandatory re-assignment to a transitional cost-reflective demand tariff from 1 July 2018 for small business customers (> 40 MWh pa)	Did not approve	Reflects the AER's decision
Opt-in to a fully cost-reflective kW demand tariff and transition kW demand tariff	Approved, however consider business customers' concerns regarding the time window of 12:00 to 21:00 for small business	We are no longer proposing a separate cost-reflective kW demand tariff for small business customers. For customers opting in to a demand tariff, the existing agreed kVA demand tariff and transition demand tariff will be used. These tariffs have a shoulder (12mths) time window of 12:00 to 16:00 hrs workdays and a separate peak (Nov-Mar) window of 16:00 to 21:00 hrs work days

While we are of the view that our initial TSS approach would have provided strong cost-reflective signals to customers at the critical time they are making important demand-side investment decisions for the future (eg large air conditioning units, solar PV, and so on), we recognise our residential and smaller business customers may require more time to better understand their electricity usage patterns before transitioning to a demand based tariff.

It is also questionable as to whether the energy industry is in a position to implement cost-reflective pricing for larger volumes of residential and small business customers in this current regulatory control period as there are key issues yet to be resolved such as ongoing upgrading of billing systems to accommodate new tariff structures.

We have also considered the Australian Energy Market Operator's (**AEMO**) demand forecast for the coming years. With a forecast for flat demand, we can accommodate a slower transition to cost-reflective tariffs than we originally proposed in our initial TSS because the level of effective demand response we would be seeing in this 2017-20 period would be low.

Notwithstanding the slower pace of change reflected in our revised TSS approach, SA Power Networks has already achieved a measurable step forward towards implementing cost-reflective pricing for our residential and small business customers in this regulatory control period. Since 2015 we have established a tariff class for small businesses and large LV businesses that better reflect their size, consumption characteristics and supply voltage. We have moved towards more simplified tariff structures by reducing the inclining blocks in our single rate tariffs and we have streamlined the number of available tariffs. We have also established a suite of demand tariffs for each tariff class that are more reflective of our LRMC. These demand based cost-reflective tariffs offer customers who are willing to change behaviour a tool to reduce their costs.

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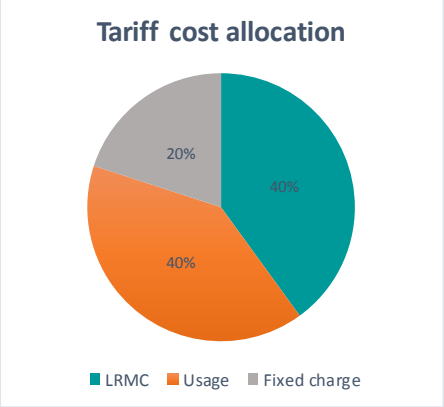
SA Power Networks was the first Distribution Network Service Provider (**DNSP**) to implement a mandatory cost-reflective kVA demand tariff for new 'larger' small business customers requiring a three phase supply or altering their supply requirements eg existing single phase customers converting to a three phase supply. This also applies to other multi-phase (ie two or three phase) customers where an alteration of supply requires a meter upgrade. To ease customer pricing impacts a transitional version of this tariff has become available from 1 July 2016.

Through this revised TSS we are also looking to progress the take up of opt-in cost-reflective tariffs for our existing larger small business customers by proactively identifying and advising those who will benefit from a demand based tariff and have a retailer that will pass through our pricing structure. With the opt-in tariff we also hope to target residential 'prosumers'. The response of this cohort will provide a valuable insight before we transition our residential and smallest business customers to cost-reflective pricing in the 2020-25 regulatory control period.

We have revised our LRMC calculations using the AER's final decision for SA Power Networks' determination 2015-16 to 2019-20.

We have also revised our residual cost allocations, in particular for residential demand through the use of a fixed charge in combination with the usage charge as shown in Figure 1, and removing the previously proposed minimum quantity for demand. This will benefit our prosumers more. We will further consider the impact of a demand tariff on customers with significant diversity (eg very small customers) as part of our 2020-25 TSS proposal.

Figure 1: Tariff cost allocation



We will investigate the preferred time interval for demand measurement in our 2020-2025 proposal. We believe that a single measurement of demand per month is adequate for the monthly actual demand tariffs, but that improvements could be made to the annual agreed demand measure by using multiple measurements, perhaps including only severe weather demand days in those measurements. This is a matter for further consultation with our large customers.

We will follow advice from our recent customer collaboration, and continue to recover PV-FiT costs according to a split of about 63% residential and 37% business.

A summary of our revised network tariff structures and charging parameters for the 2017-20 period is set out in Tables 3 to 7.

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Table 3: Residential tariff structures and charging parameters

Network tariff	Status	Components	Measurement	Charging parameter
Residential single-rate (RSR)	Default	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage, inclining block: • Block 1: 0-4MWh pa • Block 2: >4MWh pa**
		Controlled load*	$/kWh	Based on usage
Residential monthly actual kW demand (MRD)	Opt-in	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kW/day	Maximum demand charge based on monthly maximum kW demand measured: • Over a 30 minute time period • Between 16:00-21:00hrs local time • All days except Christmas day • Higher charge from November to March (Peak) • Lower charge April to October (Shoulder)
		Controlled load*	$/kWh	Based on usage

* Controlled load is an optional tariff component used to control permanently installed hot water services and other appliances consuming less than 25A, during off peak times between 23:00-07:00 hours. A solar sponge version is also available between 10:00-15:00 hours.

** We plan to merge block 1 and block 2 into a single block in 2019/20.

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Table 4: Small Business tariff structures and charging parameters (<160MWh)

Network tariff	Status	Components	Measurement	Charging parameter
Business two-rate (B2R)	Default single phase Closed to multi-phase	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Based on usage: • Higher rate for peak 07:00 to 21:00 hrs CST workdays; and • Lower rate for off-peak 21:00 to 07:00hrs CST workdays and all hours non-work days.
		Controlled load*	$/kWh	Based on usage
Business monthly actual kVA demand transitional (SBDT)	Default multi-phase also Opt-in	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Based on usage: • Higher rate for peak 07:00 to 21:00 hrs CST workdays; and • Lower rate for off-peak 21:00 to 07:00hrs CST workdays and all hours non-work days.
		Demand	$/kVA/day	Maximum demand charge based on actual monthly maximum kVA demand measured: • Over a 30 minute time period; and • 12:00 to 16:00hrs local time, workdays, 12 months (Shoulder); 16:00 to 21:00hrs local time, workdays, Nov-March (Peak).
Business monthly actual kVA demand (SBD)	Opt-in	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Maximum demand charge based on actual monthly maximum kVA demand measured: • Over a 30 minute time period; and • 12:00 to 16:00hrs local time, workdays, 12 months (Shoulder); 16:00 to 21:00hrs local time, workdays, Nov-March (Peak).
Unmetered 12hr (LVUU) Streetlights	Special purpose	Usage	$/kWh	Anytime, based on usage
Unmetered 24hr (LVUU24)	Special purpose	Usage	$/kWh	Anytime, based on usage
Business single-rate (BSR)	Closed	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Controlled load*	$/kWh	Based on usage
Annual agreed	Closed	Fixed	$/customer/day	Fixed supply charge per annum

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Network tariff	Status	Components	Measurement	Charging parameter
kVA demand (SLV)		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed peak demand, declining block: • Block 1: 0-1000 kVA • Block 2: >1000kVA Additional demand applies outside of peak

* Controlled load was an optional tariff component used to control permanently installed hot water services and other appliances consuming less than 25A, during off peak times between 23:00-07:00 hours. The controlled load partner tariff is closed to new small business customers. Existing small business customers who have the controlled load partner tariff can opt-in[5] to a solar sponge partner tariff that controls load between 10:00-15:00 hours.

[5] A fee applies to alter the time clock.

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Table 5: Large LV Business tariff structures and charging parameters (>160MWh)

Network tariff	Status	Components	Measurement	Charging parameter
Business monthly actual kVA demand (BD)	Default	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Maximum demand charge based on actual monthly maximum kVA demand measured: • Over a 30 minute time period; • 12:00 to 16:00hrs local time, workdays, 12 months (Shoulder); and • 16:00 to 21:00hrs local time, workdays, Nov-March (Peak).
Business annual agreed kVA demand (LV)	Opt-in	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand, declining block: • Block 1: 0-1000 kVA • Block 2: >1000kVA
		Additional demand	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
Business single rate transition (LBSR)	Type 6 meters only	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Controlled load*	$/kWh	Based on usage
Business two rate transition (LB2R)	Type 6 meters only	Fixed	$/customer/day	Fixed supply charge per annum •
		Usage	$/kWh	Based on usage: • Higher rate for peak 07:00-21:00hrs CST workdays; and • Lower rate for off-peak 21:00-07:00hrs CST workdays and all hours non-work days.
		Controlled load*	$/kWh	Off peak, based on usage
Sportsground annual agreed kVA demand (LVSG)	Special purpose	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Dec-Feb, 12:00 to 19:00hrs local time, workdays, agreed demand, declining block • Block 1: 0-1000kVA • Block 2: >1000kVA
		Additional demand	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
		Fixed	$/customer/day	Fixed supply charge per annum

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Network tariff	Status	Components	Measurement	Charging parameter
Business annual agreed kVA demand back-up (LVB)	Special purpose	Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Anytime based on agreed demand
Business monthly actual kVA demand transition (BDT)	Closed**	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Based on usage: • Higher rate for peak 07:00-21:00hrs CST workdays; and • Lower rate for off-peak 21:00-07:00hrs CST workdays and all hours non-work days
		Demand	$/kVA/day	Maximum demand charge based on actual monthly maximum kVA demand measured: • Over a 30 minute time period; • 12:00-16:00hrs local time, workdays, 12 months (Shoulder); and • 16:00-21:00hrs local time, workdays, Nov-March (Peak).

* Controlled load was an optional tariff component used to control permanently installed hot water services and other appliances consuming less than 25A, during off peak times between 23:00-07:00 hours. The controlled load partner tariff is closed to new small business customers. Existing small business customers who have the controlled load partner tariff can opt-in to a solar sponge partner tariff that controls load between 10:00-15:00 hours.

** BDT is used where a customer has been mandatorily reassigned to a cost-reflective tariff post July 2015 and would otherwise face a larger price increase. It is not an opt-in tariff but customers can be assigned to this tariff by SA Power Networks. Customers can elect to transfer from BDT to cost-reflective tariff options eg BD and LV.

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Table 6: High Voltage Business tariff structures and charging parameters

Network tariff	Status	Components	Measurement	Charging parameter
High voltage business annual agreed kVA demand (HV)	Default	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand
		Additional	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
High voltage business annual agreed kVA demand <400kVA (HV400)	Opt-in	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand, declining block: • Block 1: 0-1000 kVA • Block 2: >1000kVA
		Additional	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
Business monthly actual kVA demand (HBD)	Opt-in	Fixed	$/customer/day	Fixed supply charge per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Maximum demand charge based on actual monthly maximum kVA demand measured: • Over a 30 minute time period; • 12:00 to 16:00hrs local time, workdays, 12 months (Shoulder); and • 16:00 to 21:00hrs local time, workdays, Nov-March (Peak).
High voltage business annual agreed kVA demand back-up (HVB)	Special purpose	Usage Demand	$/kWh $/kVA/day	Anytime based on usage Based on agreed (anytime) demand
High voltage business two-rate (B2R124H)	Closed	Fixed Usage	$/customer/day $/kWh	Fixed supply charge per annum Based on usage: • Higher rate for peak 07:00-21:00hrs CST workdays; and • Lower rate for off-peak 21:00-07:00hrs CST workdays and anytime non-workdays.

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Table 7: Major Business tariff structures and charging parameters

Network tariff	Status	Components	Measurement	Charging parameter
Sub-transmission annual agreed kVA demand non-locational (STN)	Default	Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand
		Additional	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
Sub-transmission annual agreed kVA demand locational (STNXXX)*	Locational	Fixed	$/customer/day	Supply charge reflecting a fixed amount per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand
		Additional	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
Sub-transmission annual agreed kVA back-up (STNB)	Special purpose	Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Based on agreed (anytime) demand
Zone substation annual agreed kVA demand non-locational (ZSN)	Default	Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand
		Additional	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
Zone substation annual agreed kVA demand locational (ZSNXXX)*	Locational	Fixed	$/customer/day	Supply charge reflecting a fixed amount per annum
		Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Peak period Nov-March, 12:00 to 21:00 local time, work days agreed demand
		Additional	$/kVA/day	Based on agreed demand that exceeds the peak agreed demand
Zone substation annual agreed kVA back-up (ZSNB)	Special purpose	Usage	$/kWh	Anytime based on usage
		Demand	$/kVA/day	Based on agreed (anytime) demand

* Zone substation and sub-transmission customers with locational transmission charges have an individual tariff identifier.

Shortened forms

Abbreviation	Definition or description
AER	Australian Energy Regulator.
Augmentation	Investment in new network assets to meet increased demand.
Capacity	The amount of electrical power that a part of the network is able to carry.
Capital Contributed Works	Works for which the customer(s) contribute towards the cost of supplying assets, typically because they are the sole users.
COAG	Council of Australian Governments.
Contestability	Customer choice of electricity or related service supplier.
Controlled Load	The DNSP controls the hours in which the supply is made available.
Cost of Supply Model	Theoretical and algorithmic model used to calculate prices, which conform to the pricing goals.
Cross subsidy	Where the price to a tariff class falls outside the range between the avoidable incremental cost of supply and the cost of stand-alone supply, an economic cross subsidy from or to other customers is said to exist.
Decision	The Australian Energy Regulator's Final Decision on South Australia - distribution determination 2015–16 to 2019–20, October 2015
Demand	Electricity consumption at a point in time.
Demand Management	Attempt to modify customer behaviour so as to constrain customer demand at critical times.
Distribution Network	The assets and service which links energy customers to the transmission network.
Distributor, DNSP	Distribution Network Service Provider.
DUoS	Distribution Use of System. The utilisation of the distribution network in the provision of electricity to consumers (a component of NUoS).
DAPR	Distribution Annual Planning Report.
ESCoSA	Essential Services Commission of South Australia, a South Australian Regulator of energy and other infrastructure.
FiT	Feed-in Tariff, paid to customers that have solar PV generators.
High Voltage	Equipment or supplies at voltages of 7.6kV or 11kV.

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Abbreviation	Definition or description
IBT, Inclining Block Tariff	A network tariff energy rate in which the rate increases above specific consumption thresholds.
JSA	Jurisdictional Scheme Amount, a component of the Network Use of System charge to fund Feed-in Tariff payments to customers that have solar PV generators.
kVA, MVA	Kilo-volt amps and Mega-volt amps, units of apparent total electrical power demand. Usually the peak demand is referenced. See also PF for the relationship between power demand quantities.
kVAr, MVAr	Kilo-volt amps (reactive) and Mega-volt amps (reactive) units of instantaneous reactive electrical power demand. Usually the peak demand is referenced. See also PF for the relationship between power demand quantities.
kW, MW	Kilo-watts and Mega-watts, units of instantaneous real electrical power demand. Usually the peak demand is referenced. See also PF for the relationship between power demand quantities.
kWh, MWh	Kilo-watt hours and Mega-watt hours, units of electrical energy consumption.
Low Voltage	Equipment or supply at a voltage of 230V single phase or 400V, three phase.
Marginal Cost	The cost of providing a small increment of service. The Long Run Marginal Cost (LRMC) includes future investment, Short Run Marginal Cost (SRMC) considers only the costs involved without extra investment.
Market Participant	Businesses involved in the electricity industry are referred to as Market or Code Participants.
Supply Rate	The fixed daily cost component of a Network price.
NEL	National Electricity Law.
NEM	National Electricity Market.
NER	National Electricity Rules.
NUoS	Network Use of System. The utilisation of the total electricity network in the provision of electricity to consumers (NUoS = DUoS + TUoS).
PV	Photo-Voltaic

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Abbreviation	Definition or description
PF	Power Factor, a measure of the ratio of real power to total power of a load. The relationship between real, reactive and apparent power is as follows: Power Factor = Real Power (kW) / Apparent Power (kVA) Apparent Power (kVA) = √ [Real Power (kW)^2 + Reactive Power (kVAr)^2]
Price Signal	Prices set to convey a desired behaviour because of the costs associated with supplying the service.
Price Structure	The components that make up a Price available to customers.
Retailer	A Full Retail Contestability market participant (business) supplying electricity to customers.
Rules	National Electricity Rules.
Sub-transmission	Equipment or supplies at voltage levels of 33kV or 66 kV.
Tariff	Network price components and conditions of supply for a tariff class.
Tariff class	A class of customers for one or more direct control services who are subject to a particular tariff or particular tariffs with similar electricity demand and usage requirements.
ToU	Time of Use, a system of pricing where energy or demand charges are higher in periods of peak utilisation of the network.
Transmission Network	The assets and service that enable generators to transmit their electrical energy to population centres. Operating voltage of equipment is 275kV and 132kV with some at 66kV.
TUoS	Transmission Use of System charges for the utilisation of the transmission network.
Unmetered supply	A connection to the distribution system which is not equipped with a meter and has estimated consumption. Connections to public lights, phone boxes, traffic lights and the like are not normally metered.

Contents

Part B, Section 1
Introduction

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1. Introduction

SA Power Networks is submitting this revised Tariff Structure Statement (**TSS**) for 2017/18 to 2019/20 to the Australian Energy Regulator (**AER**). The revised TSS has been prepared in accordance with the requirements of the National Electricity Rules (**Rules**) and the AER's 2015-20 Final Determination made in October 2015.

This document covers all of SA Power Networks' standard control services (DUoS) and alternative control services (metering). In its final determination, the AER confirmed a change in the regulatory control mechanism for SA Power Networks for 2015-20, with a revenue cap replacing the previous weighted average price cap (**WAPC**) for standard control services and a price cap replacing the alternative control services' WAPC.

The structure of our revised TSS document is different to our initial TSS. Our revised TSS consists of two parts. Part A is an abridged version of Part B. It addresses the requirements of NER 6.18.1A(a) by specifying our tariff classes, tariff structures and charging parameters, along with the policies and procedures for applying our tariffs. Part A also includes an indicative pricing schedule as required by NER 6.8.2(d1). Part B (this document) is more comprehensive, incorporating sections that demonstrate compliance with the NER pricing principles and provides a detailed explanation of our overall approach for this revised TSS.

1.1 National Electricity Rules

Clause 6.1.1 of the Rules confers responsibility on the AER for the economic regulation of distribution services provided by means of, or in connection with, distribution systems that form part of the national grid.

1.1.1 *Classification of distribution services*

In accordance with clause 6.2.1 and 6.2.2 of the Rules, the AER has classified SA Power Networks' distribution services into the following two classes:

1. Direct control services; and
2. Negotiated distribution services.

Direct control services have been further divided into the following two subclasses:

1. Standard control services; and
2. Alternative control services.

This revised TSS applies to all of the direct control services provided by SA Power Networks.

1.2 Scope of SA Power Networks' revised Tariff Structure Statement

SA Power Networks' revised TSS sets out the proposed approach to tariffs required to comply with the revenue cap (direct control) and price cap (alternative control) approved by the AER, in particular the

new network pricing rule requirements of clause 6.18.1A (Tariff Structures Statement) and 6.18.5 (Pricing principles).

This revised TSS is submitted in accordance with, and complies with, the requirements of:

1. The National Electricity Law;
2. The National Electricity Rules, including the Transitional Rules for South Australia;
3. The AER's 'Final Decision SA Power Networks determination 2015-16 to 2019-20, October 2015'.

1.3 The requirements of our revised Tariff Structure Statement

In Part I of the Rules, clause 6.18 (Distribution Pricing Rules) sets out the requirements concerning Distribution Pricing that SA Power Networks' TSS must include. Key Rules are set out below:

6.18.1A Tariff structure statement

(a) A tariff structure statement of a Distribution Network Service Provider must include the following elements:

(1) the tariff classes into which retail customers for direct control services will be divided during the relevant regulatory control period;

(2) the policies and procedures the Distribution Network Service Provider will apply for assigning retail customers to tariffs or reassigning retail customers from one tariff to another (including any applicable restrictions);

(3) the structures for each proposed tariff;

(4) the charging parameters for each proposed tariff; and

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

(b) A tariff structure statement must comply with the pricing principles for direct control services.

(e) A tariff structure statement must be accompanied by an indicative pricing schedule which sets out, for each tariff for each regulatory year of the regulatory control period, the indicative price levels determined in accordance with the tariff structure statement.

Other relevant Clauses of the Rules that are addressed in formulating this TSS Proposal comprise:

6.18.3 Tariff classes

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

6.18.5 Pricing principles

6.18.6 Side constraints on tariffs for standard control services (this is more of an annual pricing proposal matter to control the changes in average prices between different tariff classes, but is included here for completeness)

6.18.7 Recovery of designated pricing proposal charges (for transmission use of system services)

This revised TSS has been structured so as to allow compliance with the specific requirements of the Rules and the AER's Final Decision to be readily ascertained. The substantive sections of this revised TSS are set out in Table 8 below.

Readers are directed to Part B, Appendix D for a detailed compliance matrix that sets out the relevant Rules and where we have specifically addressed these Rules in our revised TSS.

Table 8: Structure of SA Power Networks' Revised TSS Proposal

Part A – Section:		Purpose
Executive summary		Provides an introduction and a summary table of the revised TSS outcomes
Shortened forms		Provides a description of shortened forms used within the revised TSS
1	Residential tariff class	Defines the conditions for assignment to the residential tariff class. Defines the tariffs applying in the 2017-20 TSS period, including: the tariff components, charging parameters, charging windows for time varying tariffs, along with the conditions for assigning customers to each tariff
2	Small business tariff class	Defines the conditions for assignment to the small business tariff class. Defines the tariffs applying in the 2017-20 TSS period, including: the tariff components, charging parameters, charging windows for time varying tariffs, along with the conditions for assigning customers to each tariff
3	Large LV business tariff class	Defines the conditions for assignment to the large LV business tariff class. Defines the tariffs applying in the 2017-20 TSS period, including: the tariff components, charging parameters, charging windows for time varying tariffs, along with the conditions for assigning customers to each tariff
4	HV business tariff class	Defines the conditions for assignment to the HV business tariff class. Defines the tariffs applying in the 2017-20 TSS period, including: the tariff components, charging parameters, charging windows for time varying tariffs, along with the conditions for assigning customers to each tariff
5	Major business tariff class	Defines the conditions for assignment to the major business tariff class. Defines the tariffs applying in the 2017-20 TSS period, including: the tariff components, charging parameters, charging windows for time varying tariffs, along with the conditions for assigning customers to each tariff
6	Pricing of Standard Control Services	Demonstrates how SA Power Networks' 2017-20 prices comply with the NER Pricing Principles, in particular determining Stand-alone and Avoidable costs for tariff classes, and long run marginal and total efficient costs for tariffs
7	Pricing of Alternative Control Services	Sets out SA Power Networks' tariffs for alternative control metering services

8	Customer assignment and re-assignment	Sets out SA Power Networks' tariff assignment and re-assignment strategy, in line with the AER's requirements from its Final Decision (Attachment 14)
9	Our revised indicative pricing schedule	A schedule that lists the indicative pricing we expect to see for the 2017-20 period
Part B – Section:		**Purpose**
Executive summary		Provides a summary of the revised TSS. Includes changes from the initial TSS and a summary of the proposed tariff structures and charging parameters for each tariff class
Shortened forms		Provides a description of shortened forms used within the revised TSS
1	Introduction	Introduces the TSS, its regulatory framework and its purpose
2	Our context	Summarises the characteristics of SA Power Networks' network that provide the context for our network tariff approach
3	Changes from our initial TSS	Explains what has changed since the submission of our initial TSS
4	Our stakeholder engagement	Sets out how we have engaged with our stakeholders and customers and the findings from this process
5	Our network tariffs	Defines the tariff classes and tariffs into which SA Power Networks' customers for direct control services are divided and their charging parameters
6	Pricing of Standard Control Services	Demonstrates how SA Power Networks' 2017-20 prices comply with the NER Pricing Principles, in particular determining Stand-alone and Avoidable costs for tariff classes, and long run marginal and total efficient costs for tariffs
7	Pricing of Alternative Control Services	Sets out SA Power Networks' tariffs for alternative control metering services
8	Transitioning to cost reflectivity	Explains how we have and propose to continue to transition towards fully cost-reflective tariffs
9	Customer impacts	Explains how we have taken into consideration customer impacts arising from our revised TSS
Appendices		
A	Our revised indicative pricing schedule	A schedule that lists the indicative pricing we expect to see for the 2017-20 period
B	Customer assignment and re-assignment	Sets out SA Power Networks' tariff assignment and re-assignment strategy, in line with the AER's requirements from its Final Decision (Attachment 14)
C	LRMC calculation methodology	Explains in detail how our LRMC have been calculated
D	Compliance matrix	A detailed compliance matrix that sets out the relevant Rules and where we have specifically addressed these Rules in our revised TSS

1.4 Confidential information

Clause 6.19.2 of the Rules classifies as confidential all network pricing information about a Distribution Network User used by a DNSP for the purposes of network pricing. SA Power Networks does not consider that this revised TSS contains any such confidential information.

SA Power Networks advises that the AER may disclose the information contained in this revised TSS to any person outside of the AER.

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Part B, Section 2

Our context

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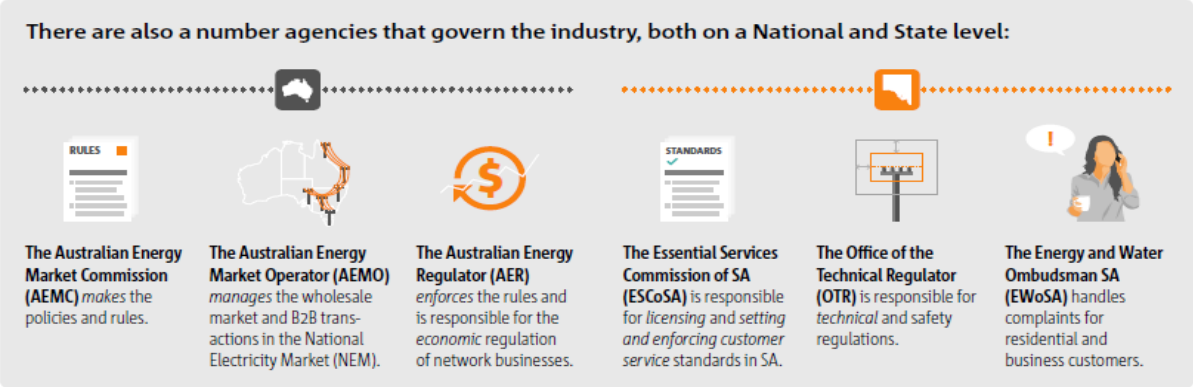
2. Our context

This Section of our revised TSS provides contextual information about SA Power Networks and our customers.

2.1 Who we are

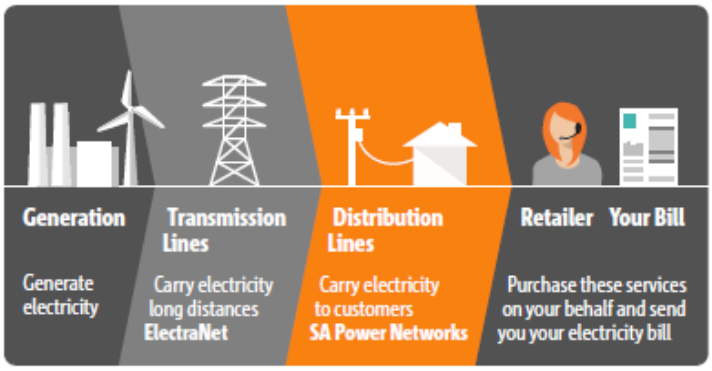
SA Power Networks is a Distribution Network Service Provider (**DNSP**) which operates within the National Electricity Market (**NEM**). We are governed by a number of agencies at the National and State levels as shown in Figure 2 below.

Figure 2: SA Power Networks' governing agencies



The electricity supply chain consists of generation, transmission, distribution and retailers as shown in Figure 3.

Figure 3: Electricity supply chain



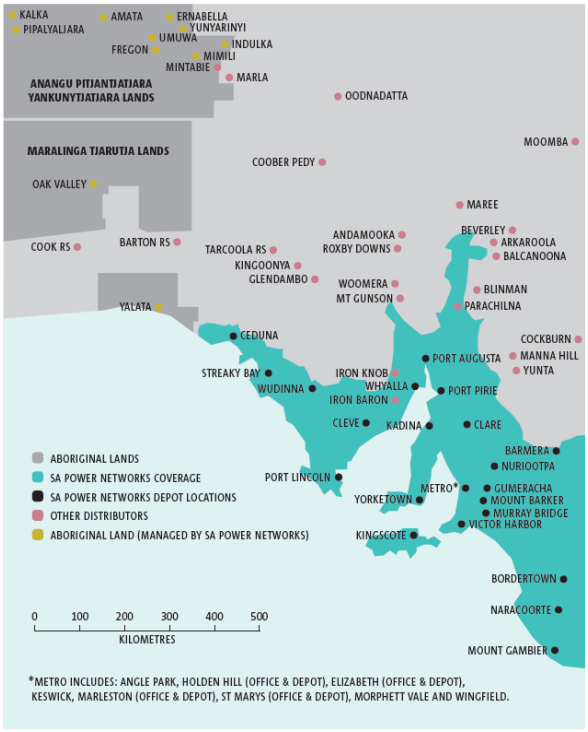
In South Australia ElectraNet provides electricity transmission services and we provide electricity distribution services to around 850,000 customers ranging from isolated farms in rural areas to industry precincts, regional and metropolitan residential homes, businesses and city centres.

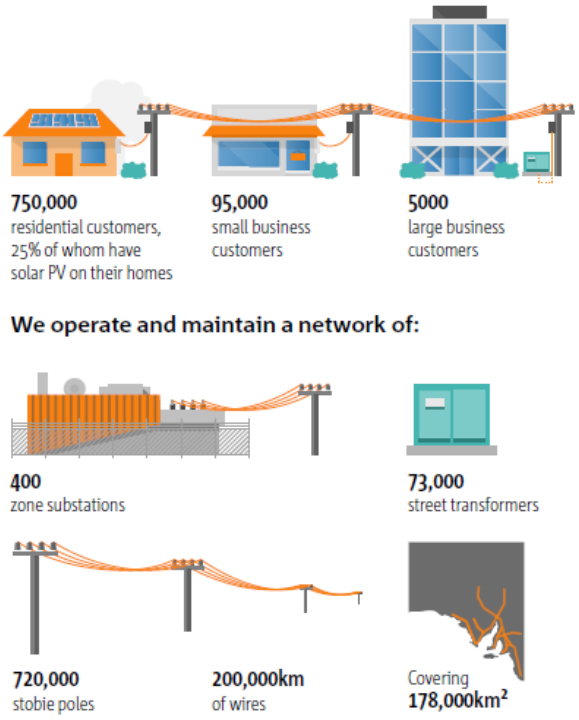
2.2 Our network

SA Power Networks' distribution network serves the State of South Australia, with a service territory of about 178,200 km^2, with a coastline of over 5,000 km. The network's route length extends to more than 87,000 km, with approximately 19% underground. The network includes 403 zone substations, 72,600 distribution transformers, approximately 723,000 poles and 1.1 million meters. The extent of SA Power Networks' operations in South Australia is shown in Figure 4.

SA Power Networks

Figure 4: SA Power Networks' service area





The South Australian distribution network is a predominantly three-phase system, with single-phase used mostly in rural and remote areas. A sub-transmission network supplies and links zone substations, operating at 66 kilovolts (kV) and 33 kV. In rural and remote areas, the single-phase system operates at 19 kV. 30% of the network is comprised of these long 'single wire earth return' (SWER) lines. In higher density rural and urban locations, the three-phase feeder system operates at 11 kV. The standard low voltage customer supply is 230V at 50Hz.

With the exception of much of the coastal area and the hinterland, South Australia is very sparsely settled. Approximately 70% of customers reside in Adelaide, including the great majority of business and commercial customers. However, the extensive area serviced by distribution results in 70% of the network infrastructure delivering energy to the remaining 30% of customers. Compared with other states, there are relatively few regional centres, and they are generally small and sparsely located. As a result, the average customer density across the State is very low.

2.3 Our operating environment

Adelaide and much of South Australia has a dry climate featuring greater extremes of summer temperature than most other Australian capitals. Extended periods of heatwave conditions can occur in summer (November 2009 and January 2014 are recent examples of extended heatwaves).

During these heatwave periods, summer daytime temperatures can exceed 40°C for several days in a row and overnight minimums can remain above 30°C for some of those days.

2.4 Our customer density

As mentioned above, we supply electricity to around 850,000 customers ranging from isolated farms in rural areas to industry precincts, regional and metropolitan residential homes, businesses and city centres.

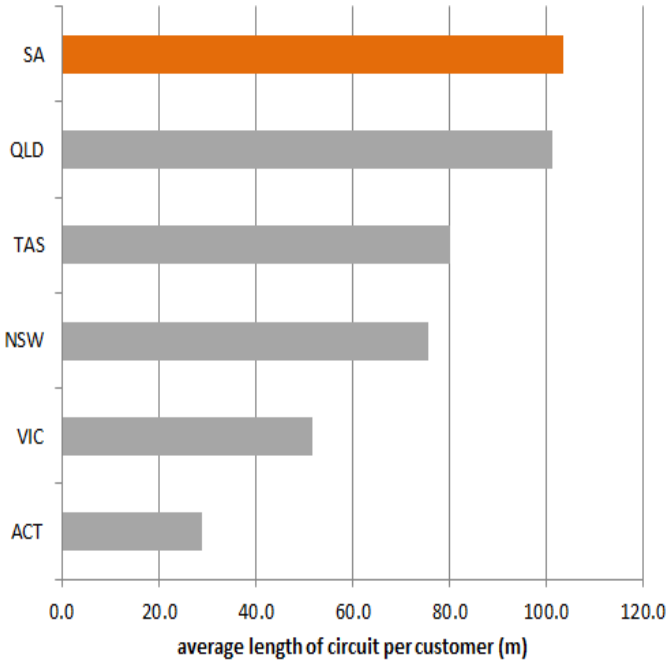
The average customer density per kilometre of distribution line in South Australia is the lowest in the NEM as indicated in Figure 5[6]. Put another way, we provide more network per customer than the other regions. The only distributors with lower customer densities are the largely rural networks operated by Ergon in Queensland and Essential Energy in NSW. South Australia is the only mainland NEM state to have a single distribution business for the entire state.

The South Australian Government has imposed a requirement on SA Power Networks to maintain State-wide pricing for small customers (with annual consumption not exceeding 160 MWh)[7]. As a consequence, all of SA Power Networks' distribution tariffs are averaged[8].

Without this 'country equalisation scheme', cost-reflective network charges would mean a significant increase in network costs for many rural customers.

This long-standing policy commitment from the Government effectively precludes us from incorporating locational price signals into our tariffs for small customers[9] and so pricing reform in South Australia must be primarily based on peak demand.

Figure 5: Circuit length per customer for each State



2.5 Our customer demand profile

The South Australian climate has led to an extraordinary demand for air conditioning. Over 90% of homes are air-conditioned with the air-conditioned floor space of these homes increasing each year. The consequent high peak network demand occurs for only a small part of the year. At other times in summer, milder weather often occurs which requires no air conditioning in most homes.

[6] The following chart is taken from data provided by the distribution businesses and published by the AER.
[7] South Australian Treasurer, Electricity Act 1996 Section 35B Electricity Pricing Order, 11 October 1999. Cl 7.3 (f)-(h)
[8] For larger business customers with energy consumption in excess of 40 GWh or a demand greater than 10 MW, locational transmission use of system (TUoS) charges apply.
[9] However, large sub-transmission and zone substation customers are subject to locational pricing.

SA Power Networks

Extremely 'peaky' conditions such as those during heatwaves require network assets and capacity that is under-utilised during much of the year, driving distribution costs higher on a per unit of energy served basis than comparable interstate networks.

A recent development has been the customer uptake of PV systems by small customers. About 25% of residential customers in South Australia now have PV systems operating, reducing their use of energy when the sun is shining. The incentives of the solar PV Feed-in Tariff (**FiT**) schemes have been popular, and customers have responded to the incentives provided.

Figure 6 and Figure 7 show the demand profile for SA Power Networks from residential and business customers (it excludes the major business). Figure 6 shows the extreme outcome from the January 2014 heatwave and Figure 7 from the 2009 heatwave. The charts show that gross demand has not changed significantly over the intervening years but the output of solar PV has made an impact. We have used the metered loads as the basis for our network pricing calculations and the sharing of network costs between customer segments (tariff classes). However, we also have regard to the change in daily peak profile that has occurred post-PV, with the co-incident system peak now occurring late afternoon and early evening. We still have business networks peaking at noon through mid-afternoon and residential networks peaking in the evening but the co-incident peak has shifted to later in the day after adjusting for PV export. We have incorporated these time issues into our cost-reflective demand charging periods. We also note the impact that solar PV has in reducing load during sunny periods to levels lower than overnight minimums, leading to our 'Solar Sponge' initiatives that were implemented in July 2015 to encourage additional load during the 10am-3pm period (11am to 4pm during daylight saving).

Figure 6: Customer Segment MW Demands on 16 January 2014

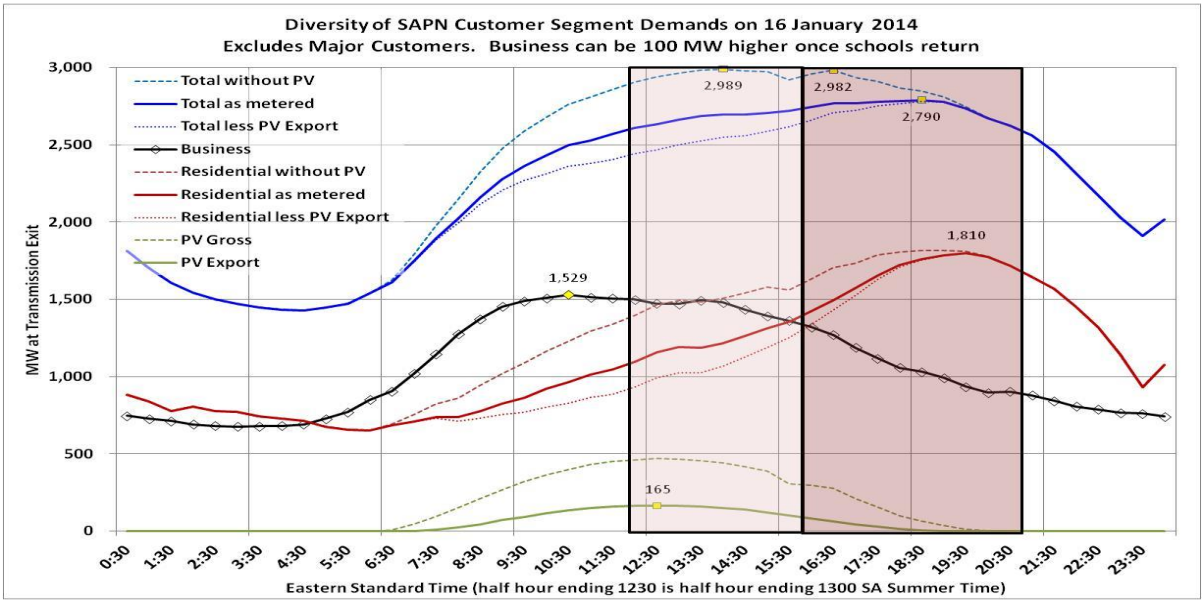


Figure 7: Customer Segment MW Demands on 29 January 2009

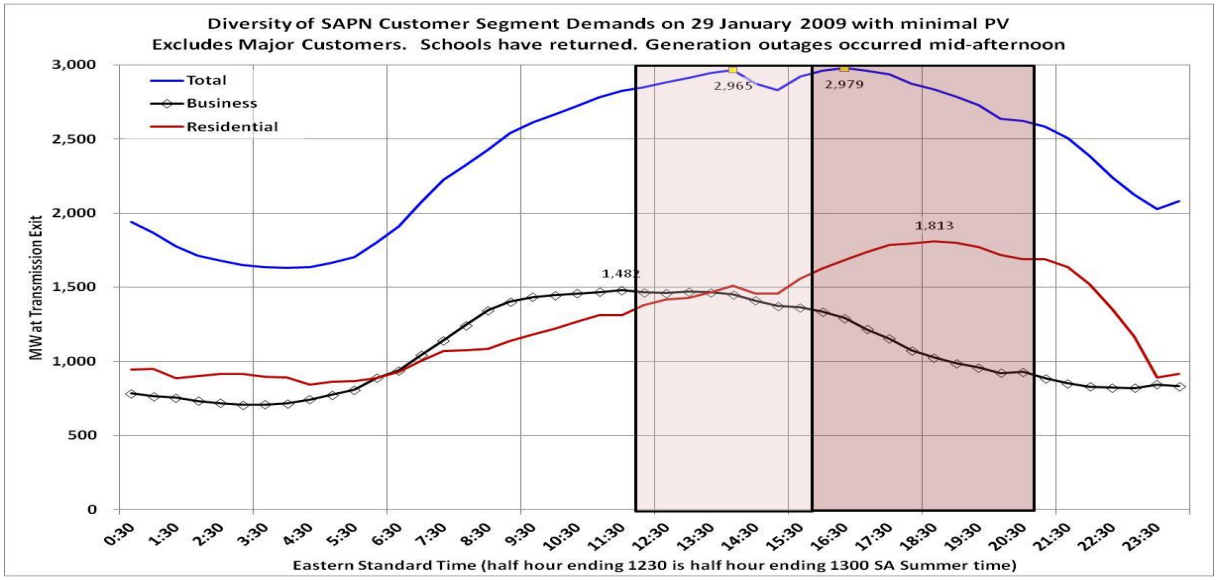
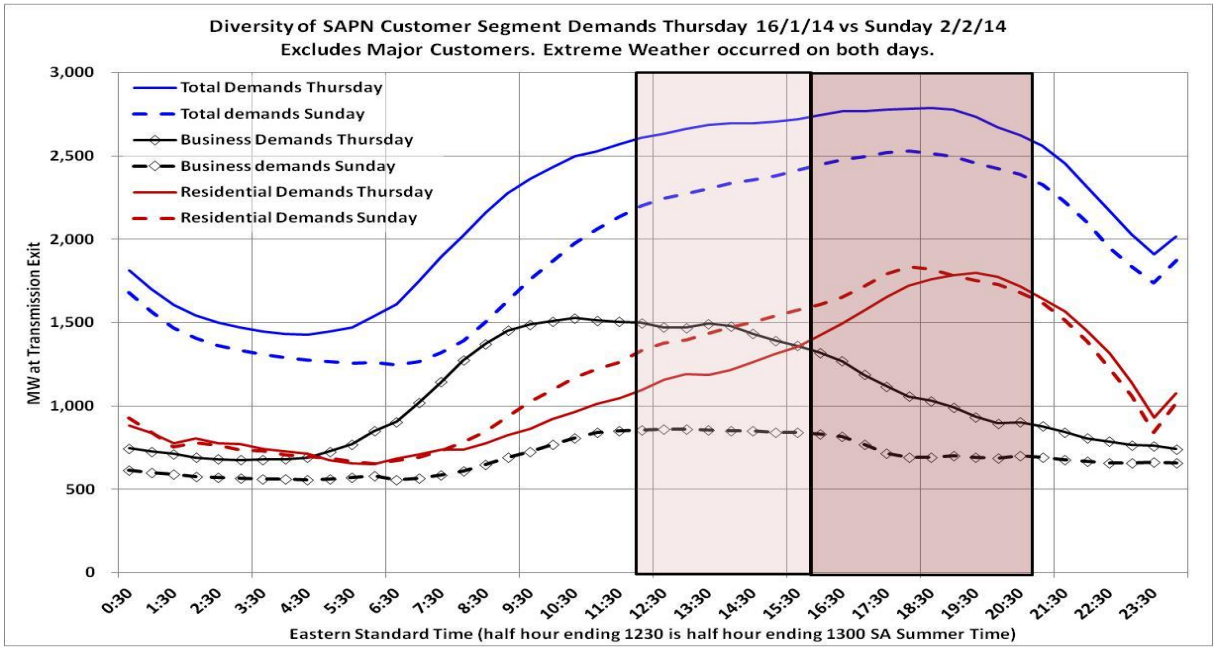


Figure 8 compares the extreme outcome during the January 2014 heatwave on a workday to a similarly extreme day a fortnight later on a Sunday in February. Because South Australia has such a high proportion of demand serving air-conditioning, peak demands on a Sunday can reach over 90% of the maximum demand reached on a workday. There are locations on the network such as coastal areas, the southern suburbs of Adelaide and the eastern suburbs of Adelaide (excluding the CBD) which can have demand as high on a Sunday as on a workday with similar weather. Consequently, we have adjusted the residential peak demand charging periods to include non-work-days, whereas business peak demand is measured solely on work-days.

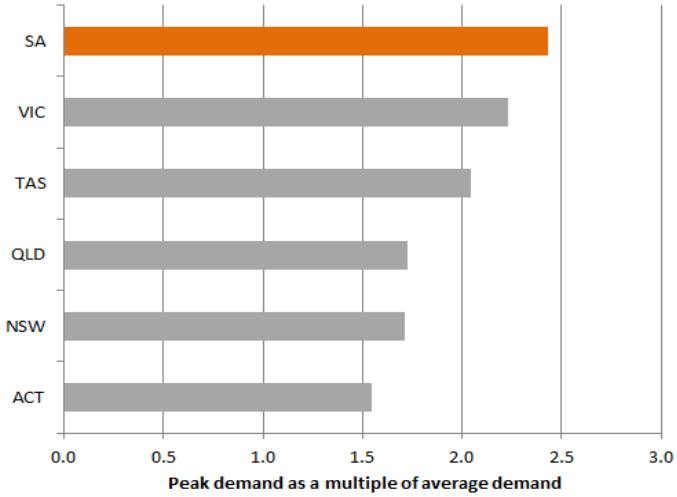
Figure 8: Customer Segment MW Demands in 2014 Heatwave – 16 January workday versus 2 February Sunday



2.6 Coincident demand

The South Australian distribution network has the highest ratio of peak to average demand across the NEM distribution businesses as shown in Figure 9[10].

Figure 9: Peakiness of State Distribution Systems' Demand

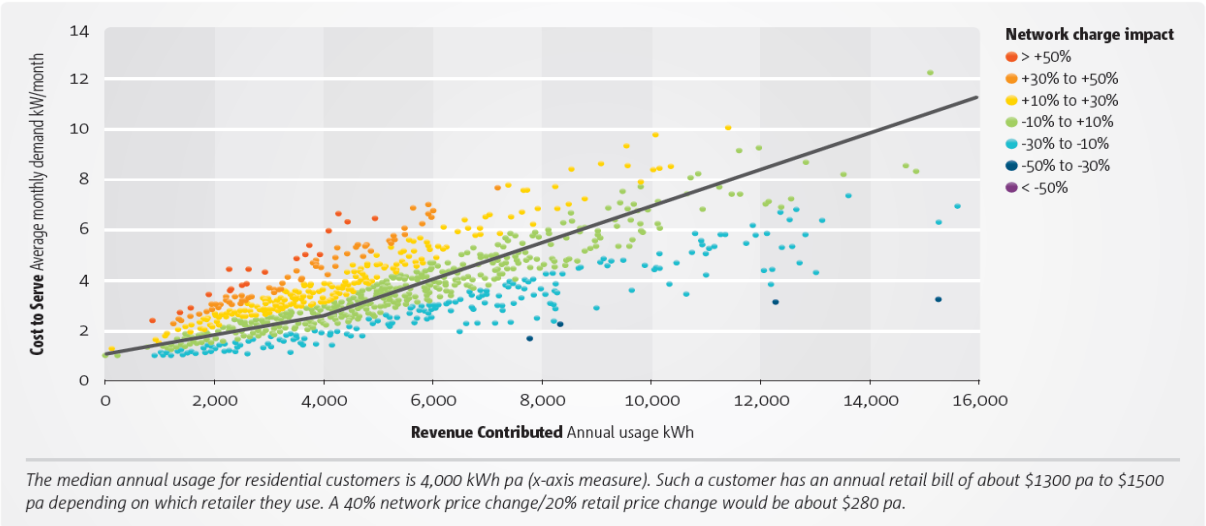


As discussed in our *Electricity Tariff Reform in South Australia Consultation Paper* released in October 2015, a change to more cost-reflective pricing means that we need to incorporate a price based on peak demand. The analysis of customer loads that we presented in the Consultation Paper illustrated the diversity in peak demand for customers with the same annual consumption.

With such a difference between peak demand and average demand (the latter being the pricing basis for our current tariffs) it is inevitable that reforming tariffs to involve peak demand measures will have a significant customer impact in terms of distribution of charges across diverse customers.

In Figure 10 below, the vertical axis shows the summer peak demand recorded for these customers - it is labelled as 'cost to serve' to reflect that peak demand is the underlying cost driver of the network. The horizontal axis shows the total annual consumption of these same households. Since our current prices are based on consumption and not demand, this axis reflects 'revenue contributed'.

Figure 10: Residential Customers' (excl. PV) Annual usage vs Summer Peak Demand showing cost-reflective pricing impacts.



The median annual usage for residential customers is 4,000 kWh pa (x-axis measure). Such a customer has an annual retail bill of about $1300 pa to $1500 pa depending on which retailer they use. A 40% network price change/20% retail price change would be about $280 pa.

Note, network costs are approximately 50% of the retail bill. The breakeven line is shown in black.

[10] Figure 7 data is taken from data published by the AER and shows that on a state by state basis, SA has the most pronounced peak demand (relative to average demand).

For example, customers consuming the median 4,000kWh per annum (and therefore paying the median network bill of $638 inc GST in 2015/16) have average monthly peak demands from around 2kW to around 6kW.

With such a diverse range of peak demands it is inevitable that the impacts on customers will be similarly wide-ranging. Analysis for business customers using the actual kVA demand tariff revealed even more variation in cost-reflective impacts as the peak demand variation in turn is more severe. We have found that small business customer diversity of peak loads is greater on average as the customer gets smaller therefore there is a risk we may unintentionally impose a higher pricing signal than necessary, on small customers. This is one of the reasons why we have proposed to make demand based tariffs optional for residential customers and existing single phase small business customers.

2.7 Metering in South Australia

Since demand for electricity from our network varies across the year and across the day, if we are to change the way we price we will need to be able to measure more precisely when each customer uses electricity and how much at any particular point in time. An advanced interval meter is required to do this. Currently in South Australia less than 1% of customers (around 30,000) have this type of meter, with most customers having a traditional accumulation meter that simply measures total energy use between readings. Unlike the approach taken by the government in Victoria, there will not be a compulsory roll-out of advanced interval meters to all customers in South Australia.

Nevertheless, these advanced interval meters will increasingly appear in South Australia under a new competitive framework for metering announced on 26 November 2015 by the AEMC[11]. The new Rules aim to facilitate a market-led (eg retailer-led) approach to the deployment of advanced interval meters. The changes to the Rules also include provisions to ensure customers can have free access to their interval meter data. We are already observing a retailer-led roll-out, with AGL already undertaking an aggressive smart meter roll-out at a rate of around 5000 meters per month.

If retailers continue to install smart meters at a similar rate, by 2020 South Australia is likely to have in the order of 200,000 advanced interval meters. This will provide a critical mass of data that will assist us to develop cost-reflective tariffs for smaller customers. This supports deferring mandatory tariffs for small customers to 2020.

From 1 December 2017, retailers will be responsible for arranging metering services for all small customers (< 160MWh pa), not SA Power Networks. From this date, all new and replacement meters must be advanced interval meters that meet the 'minimum services specification' included in the NER.

[11] AEMC, Expanding competition in metering and related services, Rule Determination, 26 November 2015, Sydney

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Part B, Section 3

Changes from our initial TSS

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3. Changes from our initial Tariff Structure Statement

This Section describes changes that have occurred since our initial TSS submission and how these changes have influenced our revised TSS. This section, together with Part B, Section 4 seeks to address clause 6.8.2(c1a) of the Rules.

3.1 Changes that have occurred since the submission of our initial TSS

On 3 December 2015 we submitted our initial TSS to the AER for approval. Since our initial TSS submission the AER has made its Draft Decision, the Victorian Government has announced a policy change relating to tariffs, further information from our stakeholders has become available, and the Australian Energy Market Operator (**AEMO**) has released its latest energy forecasts, as outlined below.

The AER's Draft Decision on our initial TSS and our response

The AER's Draft Decision was to not approve our initial TSS. While our initial TSS incorporated all of the required elements, the AER did not consider it to be fully compliant with the Rules. This was because there were some elements of our initial TSS where the AER was not satisfied that it complied with the distribution pricing principles. There were also elements where insufficient detail had been provided to enable the AER to make a decision. A summary of the AER's Draft Decision and our response follows.

Compliance with the Rules

The AER was satisfied that our initial TSS contained each of the broad topics as required under the Rules, however it was not satisfied that all elements were complete or had been described with sufficient clarity. Specifically:

- The AER was unclear which tariffs applied to customers in the proposed new distribution transformer business tariff class (now referred to as the large LV business tariff class), and it was unclear from our tariff assignment/re-assignment policy precisely what type of supply alterations would and would not trigger the re-assignment of a customer to a transitional demand tariff.

  During its review process the AER issued an information request to SA Power Networks to clarify these matters. In response we provided a detailed explanation clarifying our assignment/re-assignment policy. This additional information has been incorporated in our assignment/re-assignment policy in our revised TSS, refer to Part B, Appendix B. Our 2016/17 APP incorporated the large LV business tariff class and was approved by the AER in June 2016.

- The AER considered that our LRMC calculation and residual cost recovery methodologies were not entirely clear or complete.

  In our revised TSS we have revised our LRMC estimate and have explained in detail our LRMC calculations and residual cost recovery methodologies, refer to Part B, Section 6 and Part B, Appendix C.

The AER was satisfied the following elements of our initial TSS complied with the Rules.

SA Power Networks

- The AER accepted our proposed expansion of demand based tariffs for residential and small business customers through the mandatory assignment of new residential and small business customers to demand tariffs, along with customers who make major alterations to their supply.

  Notwithstanding the AER's initial acceptance, SA Power Networks has also taken into consideration the additional findings from our recent stakeholder engagement along with the various stakeholder submissions to the AER's Issues Paper. As a result, we are no longer proposing to introduce mandatory demand based tariffs for residential and single phase small business customers in this revised TSS.

- The AER accepted the use of transitional demand tariffs for those new or altered supply customers who are assigned to a demand tariff.

  In our revised TSS a transitional demand tariff applies to our small business tariff class. From July 2016 the transitional tariff is now mandatory for new small business customers requiring a three phase supply or altering their supply requirements eg existing single phase customers converting to a three phase supply. It also applies to other existing multi-phase (ie two or three phase) customers where an alteration of supply requires a meter upgrade. The transitional demand based tariff is opt-in for all other customers in the small business tariff class, including those small business customers who are already on a fully cost-reflective demand tariff.

- The AER accepted the inclusion of more cost-reflective demand tariffs to which customers can voluntarily opt-in.

  SA Power Networks accepts the AER's decision.

- The AER accepted our proposed charging windows during which a customer's electricity demand and usage will be measured for the purposes of calculating the demand and usage charges, however it has encouraged SA Power Networks to review our charging windows in the 2020-25 regulatory control period.

  SA Power Networks accepts the AER's decision.

- The AER has accepted the tariffs offered to large LV business, high voltage business and major business tariff classes.

  SA Power Networks accepts the AER's decision.

Compliance with the distribution pricing principles

The AER was not satisfied that the following elements of SA Power Networks' initial TSS comply with the distribution pricing principles.

- The AER did not accept our proposed mandatory re-assignment on to transitional demand tariffs of existing residential and small business customers who have advanced interval meters and whose annual consumption is above a certain threshold.

SA Power Networks

SA Power Networks accepts the AER's decision.

- The AER did not accept the implementation date of our assignment policy for new and altered supply customers. The AER has required us to adjust the start date of our assignment policy to 1 December 2017 (instead of 1 July 2017) to coincide with the introduction of new metering contestability rules.

  SA Power Networks accepts the AER's decision.

- The AER did not accept the inclusion of solar and social tariffs and the mandatory re-assignment to these tariffs of existing customers who match the relevant criteria.

  SA Power Networks accepts the AER's decision.

- The AER did not accept the inclusion of transitional usage tariffs and the mandatory re-assignment to these tariffs of existing residential and small business customers whose annual consumption is above a certain threshold with accumulation meters.

  SA Power Networks accepts the AER's decision.

- The AER did not accept our proposed LRMC calculation and residual cost recovery methodology.

  In our revised TSS we have revised our LRMC and have fully explained our LRMC calculation and residual cost recovery methodologies in Part B, Section 6 and Part B, Appendix C.

For future consideration

The AER has encouraged us to make further improvements in the following areas in future, tariff structure statement (eg for the 2020-25 period):

- Provide for greater integration between our network pricing, network planning and demand management strategies;
- Review whether the use of a 30 minute window to measure demand is optimal;
- Review and potentially refine our charging windows; and
- Include replacement capital costs within our LRMC estimates.

The AER also asked us to give directional advice on our preliminary tariff policy positions for the 2020-25 period.

For the first three points we have given an undertaking to improve our TSS in these areas.

In this revised TSS we have updated our LRMC calculations to include a portion of replacement capital costs within our estimates. For further details on how we have calculated this refer to Part B, Section 6.

SA Power Networks

The Victorian Government policy announcement

Victoria's Minister for Energy and Resources wrote to the AER in December 2015 to advise that "… the new distribution network pricing arrangements will be implemented through an opt-in approach for the period 1 January 2017 to 31 December 2020." This applies to all Victorian residential customers and to small business customers using less than 40MWh pa.

This decision has important implications for other jurisdictions and specifically South Australia. The vast majority of electricity retailers active in South Australia are based in Victoria and it is our experience that there is strong reluctance to develop new products and services exclusively for this State. The Victorian Government policy is a clear barrier to early development of cost-reflective retail offerings for small customers.

Considering this, the case for mandating cost-reflective network tariffs for residential customers and single phase small business customers is greatly diminished, as it is likely that many retailers will not be in a position to pass through the structure of our pricing signals for the smaller customer segments. As a consequence, we consider a more prudent approach is to adopt a slower pace of reform consistent with that of other states. In the case that some retailers do develop (in the short-term) cost-reflective retail offerings that adequately reflect our network pricing signals, there will still be potential for many customers to benefit by opting in to those cost-reflective offers.

Stakeholder submissions on our initial TSS

On 11 March 2016 the AER published its Issues Paper on SA Power Networks' initial TSS, inviting stakeholders to provide submissions on our proposal. Seventeen submissions addressing the AER's Issues Paper were subsequently lodged with the AER. With a few exceptions, the submissions were broadly supportive of our initial TSS.

There was general support for a slow and steady move to cost-reflective tariffs. While most submissions indicated comfort with moving customers to demand based tariffs on an opt-in basis, there were mixed views on the introduction of mandated demand tariffs for residential and small business customers.

The Department of State Development (**DSD**) recognised increasing the cost-reflectivity of network pricing and sending clear signals to electricity customers is particularly important in South Australia owing to our peaky demand profile. DSD were supportive of our mandatory demand tariffs and considered a sensible approach would be to use a phased approach which combines both opt-in and mandatory tariff roll-outs.[12]

The Energy and Water Ombudsman SA (**EWoSA**)was also supportive of our proposed mandatory demand tariffs, yet they recognised there were advantages in including a greater range of opt-in demand based tariff options.[13]

The South Australian Council of Social Service (**SACOSS**) were not supportive of mandated tariffs for residential customers, stating that in the context of their own engagement, "Consumer participants

[12] Department of State Development, AER Issues Paper submission, 5 May 2016, pgs 1 and 2.
[13] Energy and Water Ombudsman SA, Submission to AER Issues Paper, pg 2.

strongly indicated a high degree of fear and apprehension about the residential demand tariff and were very sceptical about behaviour modification to reduce demand being easy or possible. ….. However, consumers could see some of the positive outcomes of a demand tariff and were much more willing to consider it under a voluntary opt in approach."[14]

Retailer submissions were supportive of all customers transitioning to cost-reflective tariffs, however they did not support the introduction of mandatory tariffs for smaller customers in this regulatory control period. Retailers are concerned the complexity of cost-reflective tariffs and the lack of customer education will prevent their customers from responding to sharper pricing signals which will in turn result in bill shock (this is discussed in more detail later in this section). Retailers also raised concerns about implementing complex demand tariffs and their ability to upgrade their billing systems to accommodate these tariffs.

A consistent view in the majority of the submissions was that customer education is central to successful tariff reform. For example, Business SA stated "Consideration should be given into the possibility of allowing businesses the option of installing an advanced interval meter, without triggering a transition to a demand based tariff, and allowing them to monitor and understand their consumption and demand profile over the period of a year before they decide whether to opt-in to the fully cost-reflective tariff or transition demand tariff"[15]

There was minimal support for our solar and social tariffs. The Clean Energy Council (**CEC**) submitted that they are concerned our proposed solar tariff will be perceived as anti-solar and will generate a public backlash that could result in a set back of the distribution network tariff reform process. CEC believe a genuine opt-in approach would allow all customers to choose regardless of whether they invest in solar and that this approach would build public support for tariff reform.[16]

Similarly, the South Australian Small Business Commissioner stated "…customers who have taken measures to reduce their total use of electricity from the network by installing solar panels should not be disadvantaged."[17]

SACOSS had many concerns on our proposed social tariff, stating "Above all the issues we raised, we are still most highly concerned about the potential impact of the implementation of a social tariff to undermine our capacity to negotiate reform of the current concession from a fixed rate payment to a proportional one."[18]

We have considered the feedback from the AER's Issues Paper submissions and are no longer proposing to introduce mandatory demand tariffs for those residential and single phase small business customers who met the relevant criteria. While we acknowledge DSD and EWoSA are supportive of mandatory tariffs for certain residential and small business customers, the majority of our stakeholders and customers support a slower transition to cost-reflective tariffs. Stakeholders and customers are concerned that customers will not be in a position to respond to cost-reflective pricing signals in this regulatory control period and that voluntary opt-in demand tariffs are preferable in the

[14] South Australian Council of Social Service, AER Issues Paper submission, pg 2
[15] Business SA and the South Australian Wine Industry, Analysis of impacts of SAPN's 2017-2020 Tariff Structure Statement (TSS) on South Australian SME Businesses, Submission to AER Issues Paper, June 2016
[16] Clean Energy Council, AER Issues Paper submission, 19 April 2016, pg 1
[17] South Australian Small Business Commissioner, AER Issues Paper submission, 5 May 2016, pg 2
[18] South Australian Council of Social Service, AER Issues Paper submission.

short term at least. The ability for customers to respond to our tariff signals is a key consideration in applying the NER's customer impact principles.

We will take the views of Business SA regarding the availability of consumption and demand profile data into our future deliberations for potential mandatory assignment of customers to demand based tariffs in the 2020-25 period. We will also take our stakeholders' views into account when reviewing our charging windows for small business.

Our stakeholder engagement

We recognise implementing tariff reform including through this new TSS process is new for stakeholders, the AER and DNSPs alike. We have therefore been continually engaging with stakeholders on these issues throughout the TSS process to date, before and after lodging our initial TSS with the AER and the AER's draft decision (for our initial TSS).

In December 2015 SA Power Networks established an Electricity Advisory Panel (**the Panel**) consisting of a broad demographic of our customers and stakeholders. In February 2016 we engaged The Energy Project (a consultancy company) to facilitate a tariff education session and DemocracyCo (an engagement consulting company) to facilitate a deliberative session with the Panel to consider and refine a set of Customer Impact Principles[19] that were originally proposed by SA Power Networks in our initial TSS and which were largely based around the NER distribution pricing principles. In August 2016 the Panel tested these refined principles in another deliberative session to determine how we should recover PV-FiT charges from our customers.

In the Panel's first deliberative session in February 2016, it developed three main principles of 'Simplicity', 'Fairness and equity' and 'Empower the consumer' to sit alongside a fourth, 'Compliance'.

The Panel recognised that education is key to ensuring fairness, as it empowers people to make decisions. They were of the view that the introduction of new tariff arrangements need to coincide with an extensive and comprehensive education campaign along with the provision of supportive measures for vulnerable people.

It was also recognised that a sufficient transition timeframe is central to ensuring the tariff reform process is fair and equitable. The Panel wanted to avoid a repeat of the negative experience in Victoria when the Victorian Government mandated the introduction of smart meters without an appropriate timeframe, information or education.

In the interest of fairness, the Panel recognised that it was important we do not discourage investment in low carbon/renewable energy sources or the adoption of new technologies.

In the second deliberative session in August 2016, the Panel recognised that when recovering PV-FiT charges from customers, we need to be mindful of the impact of cost burdens on the business sector, in particular our major businesses.

> *"We need to be careful of the impacts on large business – at this time in our economy where huge changes (and large cost increases) could have huge impacts".*

[19] For more information on our Customer Impact Principles, refer to Part B Section 4.

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In its report[20] the Panel asked SA Power Networks to demonstrate how we applied these principles when developing the tariff structures and transitions for our revised TSS. In response to the Panel's request, we have:

- Simplified and reduced the number of available tariffs in the residential and small business tariff classes. We propose to continue to simplify our tariffs where feasible in the next regulatory control period;
- Empowered the consumer by not introducing mandatory tariffs for our smallest customers in this revised TSS. This provides more time for customer education so they are empowered to make informed decisions in the future;
- Empowered consumers by providing a suite of fully cost-reflective tariffs that our residential and small business customers can voluntarily opt-in to. This facilitates those 'prosumers'[21] that can and want to maximise their use of the energy market to their own benefit;
- Been fair and equitable by treating customers consistently. We no longer propose to implement the solar and social tariffs in this revised TSS; and
- Adopted the Panel recommendations for recovering PV-FiT costs, whereby 70% of such charges will be recovered from residential customers, with 20% (of the 70% being applied on a per customer basis), with the balance on a usage basis.

In August 2016, we also undertook targeted consultation sessions with some of our solar industry customers, small business customers and retailers, to better understand their concerns and to seek their views on our revised TSS approach.

SA Power Networks presented our proposed tariff structure 'strawman' to customers and stakeholders from those key segments. The outcomes from this session are detailed in Part B, Section 4.

A summary outlining the key points of our proposed revised TSS was provided as feedback to these stakeholders on 22 September 2016, in advance of the submission of our revised TSS to the AER on 4 October 2016.

The role of our retailers in the tariff reform process

Our engagement experience with retailers, along with their submissions to the AER's Issues Paper, has highlighted the challenges facing these businesses in both incorporating changes into their business systems and communicating these changes to their small customers.

Energy Australia highlighted there are challenges for retailers (and customers) in implementing cost-reflective tariffs as follows:

[20] SA Power Networks Electricity Advisory Panel, February 2016
[21] A 'prosumer' is a term for energy customers who have the ability to generate and store their own electricity.

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> *"… the proposals by the majority of networks across the NEM involve new and complex tariff structures compared with those currently in place. This creates challenges for retailers and for customers"* [22]

Whilst retailers are supportive of the introduction of demand based tariffs to all customers, they are concerned that the complexity of cost-reflective tariffs and the lack of customer education will prevent their customers from responding to sharper pricing signals in the short term. For example, AGL is supportive of the general tariff reforms being proposed by us, however they view some areas of our initial TSS as being overly complex at this stage of the reforms and may impair the essential message and prevent effective implementation.[23]

Energy Consumers Australia (**ECA**) also recognises customer education is critical to the successful implementation of tariff reform and they encourage retailers to do more customer engagement on the transition to cost-reflective tariffs stating "We believe retailers need to do much more to engage with their customers on the transition to the new tariff structures. ECA strongly encourages retailers across the NEM to work with consumers to develop products and materials that allow consumers to make informed decisions about whether the early adoption of cost-reflective pricing is right for them."[24]

Retailers have suggested that a staged and moderate approach over a couple of regulatory control periods will offer more certainty and will provide time for retailers to develop service offerings for customers. For example, Energy Australia advised the following:

> *"We believe that the timeframe over which all customers face fully cost reflective tariffs should be two or possibly three regulatory periods, with some trade-offs between economic efficiency and simplicity in the short term. A staged and moderate approach offers more certainty and will enable retailers to develop service offerings and the majority of customers to become familiar with a challenging concept before facing sharper pricing signals"*[25]

Further, retailers (and the majority of our stakeholders) believe small customers should have a choice to opt-in to demand based tariffs when they are sufficiently informed to do so. Therefore, most retailers (including AGL, Red, Lumo and Origin), are saying an opt-in approach is more appropriate than a mandated approach at this stage of tariff reform:

> *"AGL supports the opportunity for residential and small business customers to opt-in to fully cost reflective demand tariffs."*[26]

> *"Customer choice is an important value at both Red and Lumo. As such, it is important that consumers are given the option to choose to opt in to cost reflective tariffs."*[27]

[22] Energy Australia, AER Issues Paper submission, 28 April 2016, pg 1
[23] AGL, AER Issues Paper submission, 28 April 2016, pg 2
[24] Energy Consumers Australia, AER Issues Paper submission, 28 April, 2016, pg 6.
[25] Energy Australia, AER Issues Paper submission, 28 April 2016, pg 1
[26] AGL, AER Issues Paper submission, 28 April 2016, pg 2
[27] Red energy/Lumo, AER Issues Paper submission, 28 April 2016, pg 1

> *"Origin considers that a model based on customer choice is preferable to support the reform process. This will allow time for a critical mass of necessary metering infrastructure to be installed which will produce actual and relevant customer usage data."* [28]

Considering the retailers' concerns regarding mandatory demand based tariffs we believe it is unlikely that many retailers will be in a position to develop retail offerings for the majority of their residential and small business customers that will pass through cost-reflective pricing signals.

We agree it is clearly questionable as to whether the electricity industry as a whole is in a position to implement cost-reflective pricing for larger volumes of residential and small business customers in this current regulatory control period, in light of the many issues yet to be resolved.

Importantly, we are cognisant of retailer concerns regarding customers having sufficient education to be in a position to make an informed decision to move on to cost-reflective tariffs. In this context we are also concerned that the size of the South Australian market may not be seen to justify a mass education program ahead of other jurisdictions.

Our response to the feedback from retailers and our customers is to propose to not impose mandatory cost-reflective tariffs on residential and single phase small business customers in this revised TSS.

Through this revised TSS we are also looking to progress the take up of opt-in cost-reflective tariffs for our existing small business customers by proactively identifying and informing those who will benefit from a demand based tariff, and have a retailer that will pass through our pricing structure, of the existence of an opt-in opportunity.

AEMO's National Electricity Forecast Report

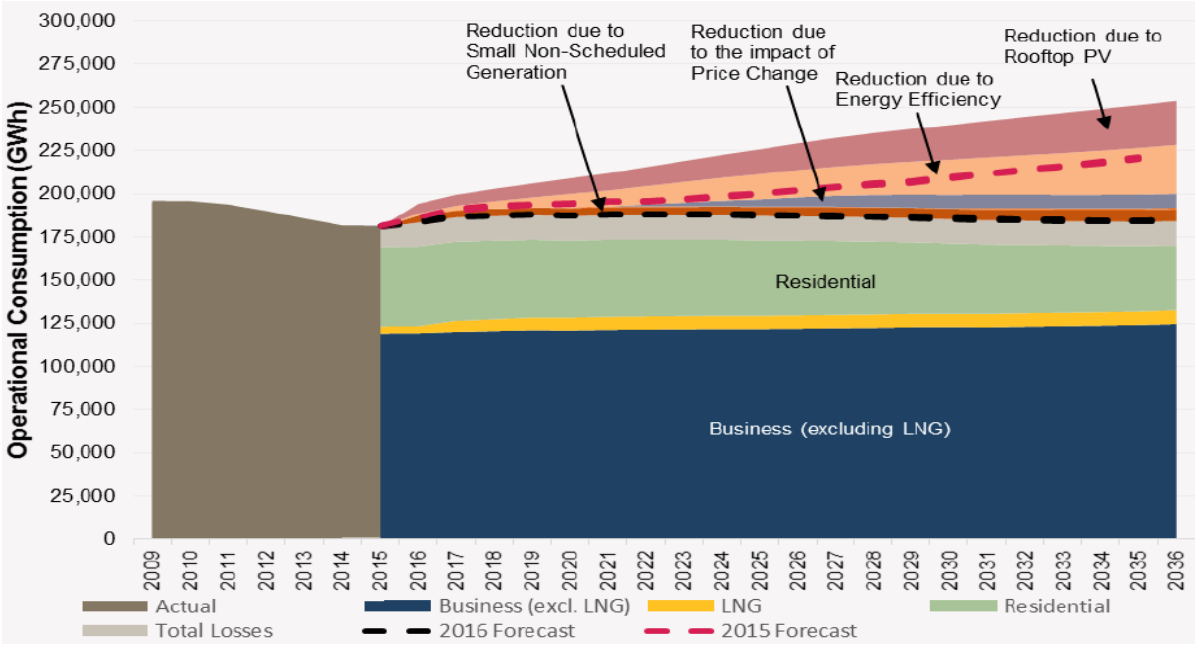
AEMO produces an annual National Electricity Forecasting Report (**NEFR**). The NEFR provides independent electricity consumption forecasts over a 20-year period for the NEM, and for each NEM region.

AEMO has observed that overall the amount of electricity consumed from the grid has declined across the NEM since 2009 due to solar PV, energy efficiency, and a range of other factors, which offset increased electrical appliance use.

Figure 11 shows how consumption in the NEM has declined from 2009/10 to 2013/14, but has started to increase with the commencement of Queensland's liquefied natural gas (LNG) export industry. The NEM operational consumption has declined almost 8% since 2009.

[28] Origin, AER Issues Paper submission, 28 April 2016, pg 1

Figure 11: Operational consumption 2008-09 to 2035-36



Source: AEMO, National Electricity Forecasting Report, June 2016

In South Australia both the annual consumption and maximum demand is forecast to decline across the forecast period. This decline is driven by projected high levels of growth in rooftop PV which is at a rate higher than typical in other regions, combined with a more significant projected decline in consumption from the business sector.

With a forecast flat demand in this regulatory control period, we can accommodate a slower transition to cost-reflective tariffs than we originally proposed in our initial TSS, because the level of effective demand response we would be seeing in this 2017-20 period would be low.

3.2 Summary assessment

While we are of the view that our initial TSS approach would have provided strong cost-reflective signals to customers at the critical time they are making important demand-side investment decisions for the future (eg purchasing large air conditioning units, solar PV, and so on), we recognise our residential and single phase small business customers require more time to better understand their electricity usage patterns before transitioning to a demand based tariff.

With our initial TSS, SA Power Networks did not have the benefit of the AER Issues Paper submissions. We have workshopped the issues raised in these submissions which clarified many concerns and uncertainties around the implementation of demand based tariffs for residential and small business customers, in this regulatory control period.

The outcome of our Federal Court appeal for our proposed solar and social tariffs was unknown at the time of the submission of our initial TSS.

Also, at the time of the submission of our initial TSS we were unaware of the pending Victorian Government policy change that will slow the pace of tariff reform in Victoria. As explained earlier, this has implications for South Australia as most of the South Australian retailers are based in Victoria and

will be slow to develop cost-reflective products for the South Australian market in advance of a slower pace of reform.

Our recent engagement with retailers has improved our understanding of their concerns around implementing complex demand tariffs and their ability to upgrade their billing systems to accommodate these tariffs, in this regulatory control period. For example, retailers who trialled our residential demand tariff in South Australia have had difficulty issuing timely and accurate retail bills.

Also, with the present level of uncertainty in the energy industry, retailers are generally not in a position to develop retail offerings for residential and small business customers that adequately reflect or manage network demand based tariffs.

Stakeholders and customers have emphasised education is key to successful tariff reform. The majority of our stakeholders and customers are of the view that customers should have the option of installing an advanced meter without triggering a transition to a demand based tariff as this will enable them to understand their consumption and demand profile before transitioning to demand based tariffs later. In July 2020 there should be sufficient customer data to develop customer information that will enable successful tariff reform to commence.

In developing our revised TSS we have undertaken further pricing analysis and have found that establishing precise LRMC pricing for many of the smaller customers is difficult due to their greater diversity. Therefore, we risk forcing a higher pricing signal on many small customers that may prove to be incorrect. Slowing the pace of tariff reform and encouraging prosumers who will benefit from opting-in to demand based tariffs, will provide more comprehensive data that will enable us to develop more appropriate LRMC pricing for these smaller customers. It may also be that our future analysis on an improved measurement of demand (ie refinements to the 30 minute interval) for such customers overcomes these issues for the 2020-25 regulatory control period.

Considering the information that has become available since we submitted our initial TSS, SA Power Networks is now concerned a fast pace of reform without appropriate customer education and the correct pricing signals, will introduce unnecessary risk in the 2017-20 period, partly because without adequate information customers may not know how to respond to sharper pricing signals and partly because the retail sector may not yet be in a position to efficiently and effectively support the tariff reform process. This may have negative repercussions for subsequent tariff reform in the 2020-25 regulatory control period.

We are also mindful that the AEMO forecasts of flat or declining demand affords a period of reduced criticality in terms of demand response needs.

For these reasons we do not believe the electricity industry in general is ready to adopt an aggressive approach towards cost-reflective pricing for larger volumes of residential and small business customers in this regulatory control period.

SA Power Networks proposes that in the short term there is more benefit in simplifying and streamlining our tariffs and focusing our efforts on prosumers and those larger small business customers who will benefit from fully cost-reflective tariffs. We view this regulatory control period as a trial period before cost-reflective pricing is mandated for larger volumes of residential and small

business customers in the 2020-25 regulatory control period. At the same time, we do propose to continue assigning new and alteration of supply multi-phase business customers to the transition actual demand tariff.

In 2020 SA Power Networks and the wider electricity industry will be better informed and therefore in a more advantageous position to implement a more aggressive transition to cost-reflective pricing.

Our approach to tariff reform over the 2015-25 regulatory control periods is outlined in Part B, Section 8.

3.3 Our revised TSS

In developing our revised TSS we have considered the matters discussed above and changed some of the tariff structures proposed for residential and smaller business customers in our initial TSS, as shown in Tables 9 and 10. Overall the changes reflect a slower pace of change for small customers, and a greater focus on an opt-in approach.

Table 9: Summary of changes from SA Power Networks' initial TSS for residential customers

Initial TSS	AER Draft Decision	Revised TSS
Mandatory assignment to a transitional kW demand tariff from 1 July 2017 for all new residential customers and all residential customers who request a significant supply alteration	Approved providing mandatory assignment commences 1 December 2017 and the alteration requires a new meter	We are no longer proposing a mandatory assignment to a cost-reflective tariff in the 2017-20 period for residential customers. These customers will continue to be assigned to the residential single rate tariff
Mandatory re-assignment to a transitional kW demand tariff from 1 July 2018 for residential customers (> 20 MWh pa)	Did not approve	Reflects the AER's decision
Opt-in to a fully cost-reflective kW demand tariff for residential customers	Approved, however the explanation of residual cost allocation/LRMC costs needs to be improved	The minimum 1.0kW demand charge in the existing opt-in tariff is being removed and replaced with a fixed charge
Solar PV tariff for customers with Type 6 metering	Did not approve	Reflect the AER's decision
Social tariff for customers on a hardship scheme	Did not approve	Reflect the AER's decision

Table 10: Summary of changes from SA Power Networks' initial TSS for small LV business customers

Initial TSS	AER Draft Decision	Revised TSS
Mandatory assignment to a transitional cost-reflective demand tariff from 1 July 2017	Approved, provided that mandatory assignment commences 1 December 2017	We no longer propose a mandatory assignment to a cost-reflective demand tariff

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Initial TSS	AER Draft Decision	Revised TSS
for all new small business customers and all small business customers who request a significant supply alteration	and the alteration requires a new meter	for single phase small business customers. We will continue to mandatorily assign multi-phase small business customers to a transitional actual demand tariff, as per current practice
Mandatory re-assignment to a transitional cost-reflective demand tariff from 1 July 2018 for small business customers (> 40 MWh pa)	Did not approve	Reflects the AER's decision
Opt-in to a fully cost-reflective kW demand tariff and transition kW demand tariff	Approved, however consider business customers' concerns regarding the time window of 12:00 to 21:00 for small business	We no longer propose a separate cost-reflective kW demand tariff for small business customers. For customers opting in to a demand tariff we The existing agreed kVA demand tariff and transition demand tariff will be used. These tariffs have a shoulder (12mths) time window of 12:00 to 16:00 hrs workdays and a separate peak (Nov-Mar) window of 16:00 to 21:00 hrs local time on work days

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Part B, Section 4

Our stakeholder engagement

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4. Our stakeholder engagement

This Section describes SA Power Networks' TSS stakeholder engagement process and the outcomes arising from our engagement. This section, together with Part B, Section 3 seeks to address clause 6.8.2(c1a) of the Rules.

4.1 An overview of our TSS engagement

Stakeholder engagement is crucial to the success and viability of any business and SA Power Networks is committed to working with stakeholders to better understand their needs and respond appropriately.

Engagement on our initial and revised TSS has been extensive, commencing in early 2015, comprising of a series of workshops with a wide range of stakeholders representing consumers, retailers and Government; bilateral meetings; the release of and consultation on a Discussion Paper, and customer impact modelling. Our engagement has included:

July to September 2015 – Initial Tariff Structure Statement engagement

- Held a series of workshops discussing:
  - tariff fundamentals;
  - residential customers – characteristics and incentives;
  - business customers – characteristics and incentives;
  - retailer incentives; and
  - ran a consolidated workshop;
- Conducted bilateral meetings with targeted stakeholder groups; and
- Published an *Electricity tariff reform in South Australia* Discussion Paper, and received 27 submissions in response.

September 2015

- Submission to the AER of our initial TSS

December 2015

- Established our Electricity Advisory Panel

February 2016

- Held a facilitated deliberative session with the Panel to refine a set of Customer Impact Principles

August 2016 – Revised Tariff Structure Statement engagement

- Held a briefing session;
- Ran a facilitated deliberative session with the Panel to determine how we should recover PV-FiT costs; and
- Held targeted consultation sessions with:
  - the solar industry and solar advocates;
  - business customers; and
  - retailers.

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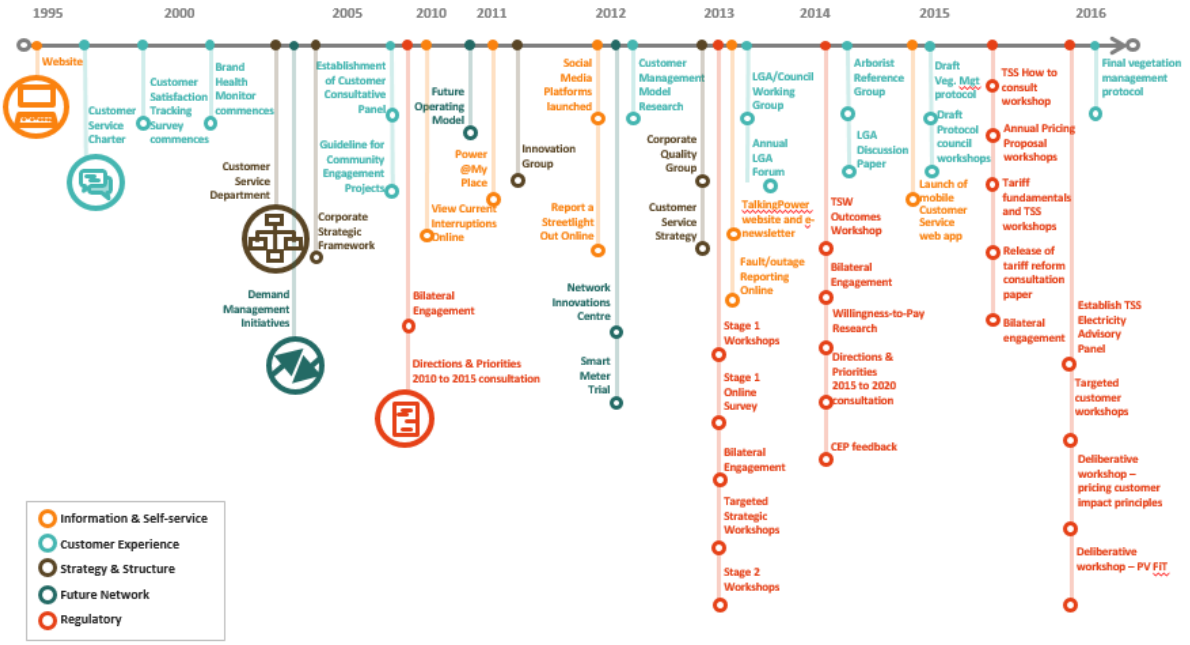
The engagement program developed for our TSS builds on our maturing customer engagement approaches and our genuine desire to better understand our customers and consider their views and preferences in our planning.

SA Power Networks has long recognised the importance of building effective relationships and dialogue with our customers and stakeholders. Figure 12 below outlines at a high level our history of customer and stakeholder engagement, spanning two decades. In recent years, our engagement efforts have increased significantly.

Figure 12: History of SA Power Networks' customer and stakeholder engagement



This engagement has been supported with a stakeholder communications strategy that has focused on the provision of comprehensive and timely communications delivered through a variety of channels, including the www.talkingpower.com.au website, TalkingPower e-newsletters, and regular email and phone dialogue.

Throughout our engagement, discussions have focused on the requirement for tariff reform; the design of cost-reflective tariffs that are suitable in the South Australian context; the impacts of the changes on both residential and business customers; what is an appropriate transition timeframe; and what 'complementary measures' need to be in place to support the reform program.

4.2 Our stakeholders concerns

Throughout the engagement program, we have captured stakeholder views and preferences in relation to a number of topics, considered these views, and responded accordingly. While much of the feedback we have received has been diverse, even opposing at times, we have tried to balance those views and give consideration to all perspectives and pertinent information to arrive at our positions.

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The key issues raised by stakeholders have mainly related to:

- The **proposed tariffs** and the 'signals' they send and their impacts on customer bills;
- The **complementary measures** that will need to be considered, including education;
- The **transition schedule** for the period out to 2025 and the ability to opt-in/opt-out of tariffs; and
- The need to keep it **simple**.

Throughout the consultation, stakeholders and customers told us that a coordinated approach to educate customers about tariff changes would be essential to the success of the reform program. Retailers and the State Government have key roles to play in this regard:

- **Retailers** - stakeholders want retailers to take a proactive role in the provision of online portals, 'ghost' billing and other products and services that will support a seamless transition to cost-reflective tariffs; and
- **State Government** - the State Government, in conjunction with other major stakeholders such as SA Power Networks, the AEMC and energy retailers, have a role to play in the coordination and delivery of an information/education campaign to customers.

4.3 Deliberative engagement

SA Power Networks believes that customer impacts should be considered alongside the economic impacts in the setting of electricity network tariffs. The mechanism we chose for doing this was through the development and application of a set of Customer Impact Principles using a facilitated deliberative process.

Deliberative engagement is a relatively new process, not widely used in the utility sector, which involves customers and stakeholders actively engaging in a process aimed at collaboratively developing shared solutions or outcomes.

Tariff design and implementation is a complex issue and the deliberative process enabled quick understanding of the issues and the development of an agreed set of Customer Impact Principles. Participants gained a shared understanding of the trade-offs involved in different approaches to distributing costs between various types of consumers and provided a way forward that is balanced and reasonable. Furthermore, it demonstrated the value for the business of innovative new approaches to enlisting our stakeholders and customers in the development of preferred options and the solving of complex problems.

Customer Impact Principles

A set of draft Customer Impact Principles were developed by us as part of our initial TSS to help guide the numerous decisions involved in tariff reform. These principles aimed to build on the Pricing Principles contained in the NER to provide guidance on how customer impacts should be considered in an objective way.

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SA Power Networks subsequently committed to running a deliberative process with a broad cross-section of the community to refine these draft Customer Impact Principles so they could be refined for further use in decision making around tariff design and implementation for the revised TSS.

Our Electricity Advisory Panel was convened in December 2015 and was asked to participate in a deliberative process facilitated by democracyCo. The Panel was recruited from a customer database and randomly selected to ensure that the final 20 customers broadly represented the South Australian population in terms of gender, age group, quarterly electricity bill, location and employment. The Panel also included 12 key representative stakeholders from the business sector, consumer advocacy groups, non-government organisations representing vulnerable communities, State Government representatives and primary producers. Many of these stakeholders had already been working with SA Power Networks on the development of our initial TSS and so had a good understanding of the TSS process and SA Power Networks.

When we make decisions about network charges, what are the impacts on customers that we need to consider?

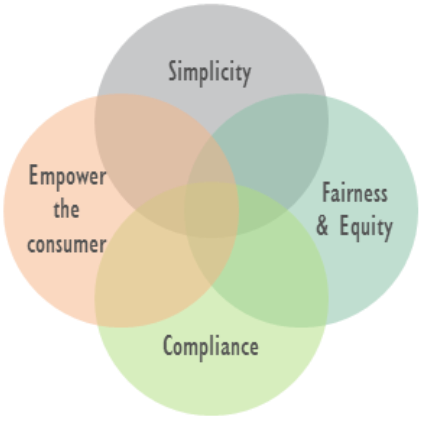
The Panel was posed the following question:

"when we make decisions about network charges, what are the impacts on customers we need to consider?"

The Panel developed three main Principles of 'Simplicity', 'Fairness and equity' and 'Empower the consumer' to sit alongside a fourth, 'Compliance'. These are represented in the diagram below. The Panel agreed that there is potential for conflicts between the three Principles but that there is a 'sweet spot' represented by the middle of the diagram where all four Principles overlap and this should be the aim when making decisions.

Principle 1: Empower the consumer

This Principle aims to ensure SA Power Networks makes decisions about network tariff setting that empower the consumer. Understanding, through the provision of information, is central to making tariff reform work. This is based on the premise that the consumer should be allowed to see, understand and manage their own behaviour.



Principle 2: Fairness and equity

Fairness requires SA Power Networks to recognise the diversity of consumers and that some households and some businesses are particularly vulnerable to sudden changes. Education, sufficient lead-in times and the provision of complementary measures are seen as having key roles.

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Principle 3: Simplicity (to inform decision making)

Tariffs have to be understandable if people are going to respond to them. To be understandable, the Panel believes tariffs need to be simple and transparent. For consumers, this is important because if tariffs are understood, people will be able to make better decisions about their behaviour (usage) and their investments (for home or business).

PV-FiT

A second deliberative process with the Panel was held in August 2016 to determine the best way to allocate costs of the State Government's PV-FiT schemes and to test options against the Customer Impact Principles developed in February 2016. The Panel was asked to consider the following question:

"Between now and 2028, SA Power Networks needs to collect $90m each year from customers and then pass this onto eligible solar customers. How do the Customer Impact Principles help us determine who pays what?"

The Panel considered three scenarios against the cost recovery approach which is being used in the 2016/17 tariffs.

- Scenario 1: Recovery as a fixed $ amount per customer. This would need to be around $102.46 per customer. This would result in 99% of revenue being recovered from those residential and small business customers eligible for the scheme.

- Scenario 2: Recovery based on total electricity consumption (c/kWh).

- Scenario 3: Recovery from residential customers only – either as a fixed charge per customer (approx. $116 per customer), as a fixed % of DUoS (approximately 24% of this component) or based on total consumption (approx. 2.3c/kWh).

The session provided an opportunity to interrogate the issue and test the Principles. The Panel could not see a good case for change from the status quo which is a PV-FiT recovery ratio of around 63% to residential and 37% to business, and after much deliberation concluded that our current approach best met the Principles.

The Panel considered it important that people who benefit financially from having solar panels should be within the main group of people who pay for that incentive scheme. The Panel also considered that a ratio of around 20% fixed price to 80% variable price would be appropriate for residential customers. This is of a similar ratio to the existing 2016/17 arrangement.

Throughout the deliberative session, the Panel gained a number of insights into the Customer Impact Principles as follows:

- The Principles were sound, robust and excellent tests for this type problem;

- It was useful to not just 'dive' into the problem but to properly consider the Principles first;

- It is important to look at the definition of each Principle – not just the title. It was the detail behind each Principle that helped the Panel understand the intent of the Principle; and

- The Principles work and promote consistency: when the Panel was split into two groups the same answers were developed through using the same Principles.

Copies of our Customer Impact Principles and PV-FiT reports can be found on our TalkingPower website at www.talkingpower.com.au.

4.4 What stakeholders told us and how we have responded

Throughout the TSS engagement, we have captured stakeholder views on our proposed tariff structures. As noted earlier, the feedback we have received has been diverse, and at times opposing. We have tried to balance those views and give appropriate consideration to all opinions to arrive at our current approach.

The following table provides an overview of what customers and stakeholders have told us and how we have responded in finalising our revised TSS.

Table 11: Customer and stakeholder concerns and how we have responded in our revised TSS

What our customers and stakeholders told us	How we responded
General	
Education is critical	• We will continue to engage and educate our customers, Government and stakeholders throughout the tariff reform process.
Complex pricing structures should be made as simple as possible	• We have developed tariff classes that reflect our customers' size, consumption characteristics and supply voltage. • We have reduced the number of available tariffs in each tariff class [29] and are progressing towards simpler tariff structures. • We have simplified our tariff structures and reduced the number of available tariffs.
Customers should be able to choose to go on a fully cost-reflective tariff	• We have established a suite of fully cost-reflective opt-in tariffs across all tariff classes excluding Major Business (because they are already on fully cost-reflective tariffs).
Communication in key	• We will continue customer engagement and communication when developing our 2020-25 TSS.
In recovering residual costs, there are concerns regarding the minimum kW demand charge	• We have revised our recovery of residual costs. We are proposing a transparent fixed charge instead of a minimum kW demand charge for residential demand tariffs.
Visibility of retail offers and ghost billing	• We have consulted with retailers in the development of our revised TSS and feedback has been passed on to retailers.

[29] Except the Major Business tariff class.

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Measured and methodical approach to tariff reform	• We now propose slowing the pace of tariff reform in South Australia. • We have developed opt-in demand tariffs for those small customers who will benefit. • We propose to use 2017-20 as a 'trial' period by learning from prosumers.
Meter change as a trigger will discourage smart meters	• We are not proposing meter changes as a trigger for tariff re-assignment except for small business customers where an alteration to supply would require a multi-phase meter change (ie no change from our 2016/17 current practice).
Customer Impact Principles to guide decision making	• We conducted a deliberative process to refine a set of Customer Impact Principles that was used to guide the development of our tariffs for residential and small business customers.
Explore opportunities for demand management and battery storage to address peak demand	• We have implemented a Battery Storage Trial in Salisbury to assess the suitability of this technology to defer network expenditure. • We are undertaking a Regulatory Investment Test for Distribution (**RIT-D**) process for the Kangaroo Island cable project to see if non-network options are feasible.
Access to data to inform decisions	• We have consulted with retailers and advised them of customer concerns regarding access to data. In the 2020-25 TSS we are considering mandating demand based tariffs only after a customer has had access to at least one or two years of advanced interval meter data.
Small business specific	
Do not support mandatory assignment to demand tariffs	• We are no longer proposing a mandatory demand tariff for single phase small business customers except where they upgrade to a two/three phase connection (ie no change from our 2016/17 current practice). • We are no longer proposing mandatory assignment for customers >40MWh.
Charging windows – concerns regarding extent	• We propose to review our charging windows for the 2020-25 TSS. • We are no longer proposing the kW actual demand tariff that had a 12:00 to 21:00hrs local time, year round window. • The kVA actual demand tariff has a 12:00 to 16:00hrs local time, year round shoulder plus a 16:00 to 21:00hrs local time, summer peak period.
Half hour peak demand measurement	We propose to review the 30 minute demand measure for the 2020-25 TSS.

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Residential specific	
Do not support mandatory assignment to demand tariffs	• We are no longer proposing a mandatory demand tariff for any residential customers.
Opt-in to a fully cost-reflective kW demand tariff	• This tariff already exists. The minimum 1.0kW demand charge is being replaced with a transparent fixed charge.
No support for social tariffs	• We are no longer proposing a social tariff in our revised 2017-20 TSS.
Solar PV tariff for customers with Type 6 metering	• We are no longer proposing a solar tariff in our revised 2017-20 TSS.
Half hour peak demand measurement	• We propose to review the 30 minute demand measure for the 2020-25 TSS.
Public holidays shouldn't be included	• Christmas Day is not included.

4.5 How we have measured and evaluated our engagement program

From the outset of the 2017-20 TSS engagement program, we were committed to continuous improvement and a key focus area was how we measured and evaluated our consultation. With the assistance of one of our consultants, KPMG Banarra, we developed a comprehensive set of engagement KPIs in order to measure the effectiveness of our engagement. These KPIs were based on our engagement objectives and principles, to ensure alignment with best practice, and were presented to stakeholders for feedback.

The TSS tariff reform engagement program has provided SA Power Networks the opportunity to consolidate our learnings from past engagement experiences, undertake deliberative engagement sessions and strengthen relationships with our stakeholders and customers. It has also reinforced the importance of continuous improvement and our commitment to effective, meaningful engagement that allows us to proactively respond and meet our customers' changing needs and preferences.

Part B, Section 5

Our network tariffs

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5. Our network tariffs

This Section describes SA Power Networks' standard control service tariff classes and related tariff structures. It sets out the way in which they have been constructed to comply with the requirements of the Rules and the AER's Final Decision (revenue determination).

5.1 Rule requirements relating to tariff classes and tariff structures

5.1.1 *Rule requirements*

SA Power Networks' TSS must contain the information on tariff classes, tariffs and charging parameters set out in clause 6.18.1A of the Rules.

6.18.1A Tariff structure statement

(a) A *tariff structure statement* of a *Distribution Network Service Provider* must include the following elements:

(1) the *tariff classes* into which *retail customers* for *direct control services* will be divided during the relevant *regulatory control period*;

(2) the policies and procedures the *Distribution Network Service Provider* will apply for assigning *retail customers* to tariffs or reassigning *retail customers* from one tariff to another (including any applicable restrictions);

(3) the structures for each proposed tariff;

(4) the *charging parameters* for each proposed tariff; and

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

SA Power Networks is required to comply with the following requirements of clause 6.18.3 of the Rules with respect to tariff classes.

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:

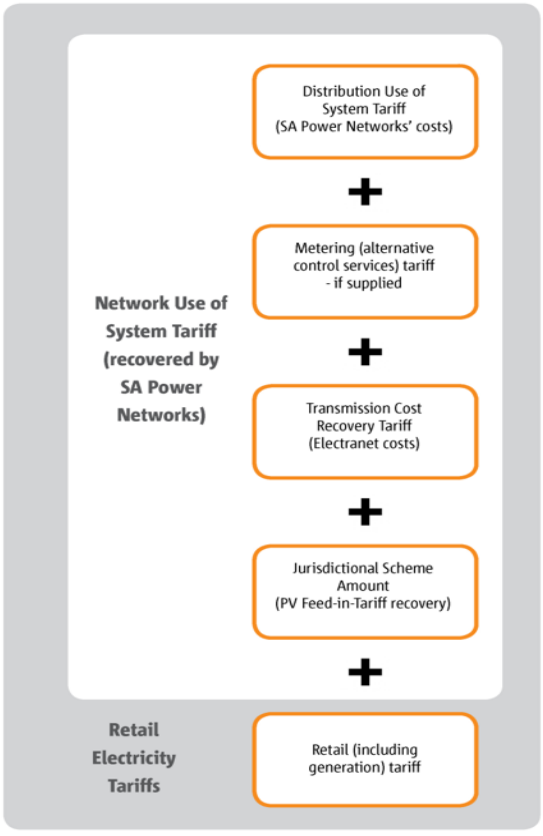
(1) the need to group *retail customers* together on an economically efficient basis; and

(2) the need to avoid unnecessary transaction costs.

5.2 How we recover revenue

SA Power Networks' network use of system tariffs are an aggregation of distribution use of system tariffs, metering service tariffs and transmission cost recovery tariffs. The components of these tariffs are illustrated in Figure 13, which also indicates their relationship to retail tariffs.

Figure 13: Components of our network tariffs



Retailers may pass through the components of SA Power Networks' network tariffs to customers directly, or modify their structure by bundling with the retail component, which includes the cost of purchasing generated energy from the NEM and retail costs.

This Section outlines the distribution tariff structures, which are designed to recover the cost of providing standard control services to customers.

Part B, Section 7 of this revised TSS outlines the arrangements for SA Power Networks' alternative control service (metering) tariffs which, in accordance with clause 6.18.3(c) of the Rules, has been constituted as a separate tariff class with separate charging parameters.

The process by which SA Power Networks recovers the SA Government Solar PV-FiT payments through the PV Jurisdictional Scheme Amount (**JSA**) is described in Part B, Section 6.

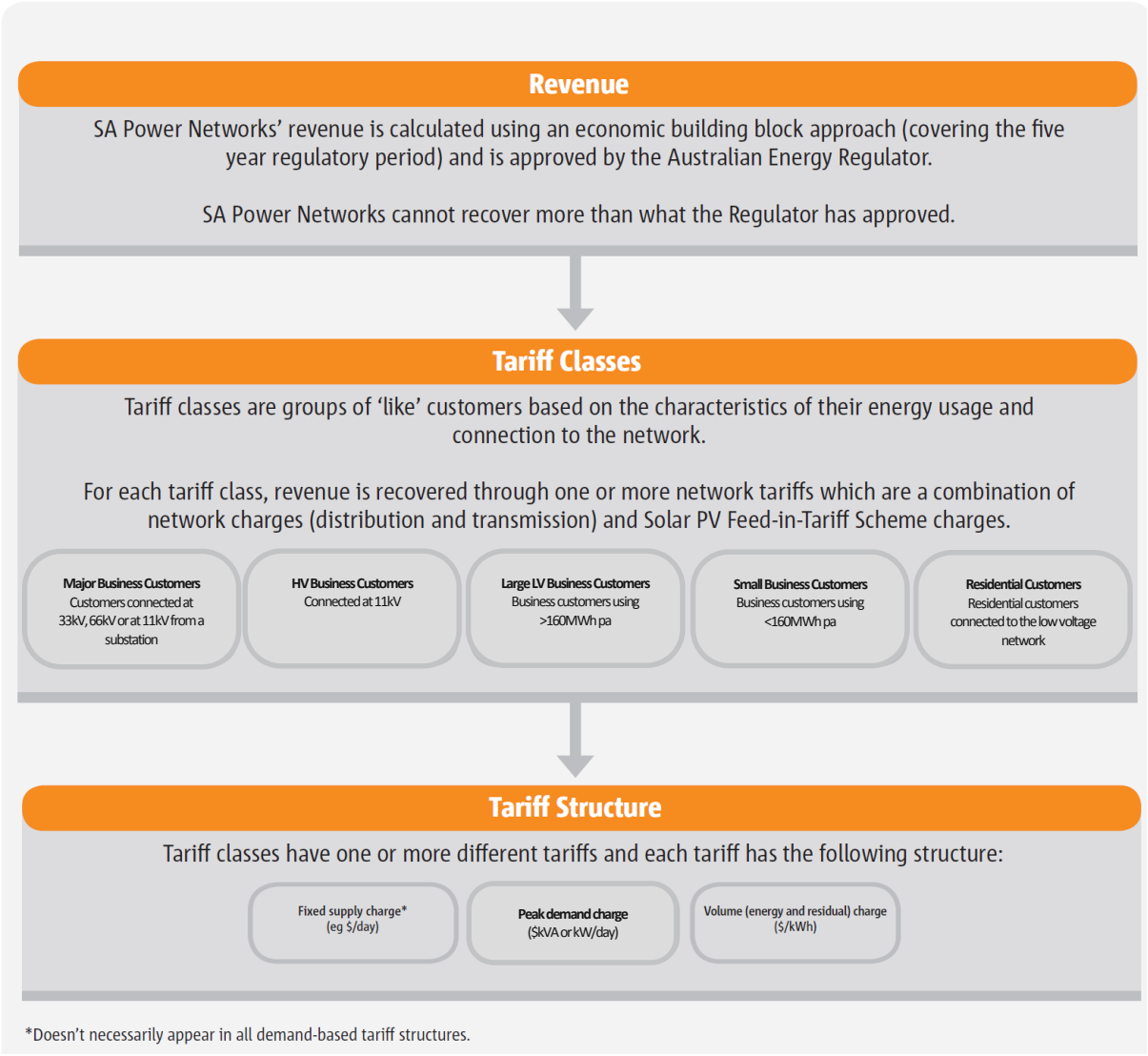
The Rules require tariff structures to have two main functions:

- send a 'price signal for efficient consumption'; and
- recover revenue in a way that as much as possible reflects the total efficient cost of supplying the customer in question without distorting the efficient price signal.

Our allocation of revenue requirements to tariff classes and then tariffs is illustrated below in Figure 14. It is a three-stage process, involving determining the allowed revenue, splitting that revenue

across the five tariff classes (and their tariffs) and finally setting prices for each tariff parameter to recover from customers the revenue allocated to that tariff class (and their tariffs).

Figure 14: Allocation of Revenue to Tariff Classes/Tariffs and to Tariff Parameters



The grouping of customers into standard control services tariff classes and the tariffs therein has historically distinguished between customers on the basis of the following factors:

- The nature and extent of usage of different types of customer;
- For business customers, the nature of connection to the network, including the voltage of connection;
- Whether the customer also receives a controlled load service; and
- The type of meter installed at the premises.

5.3 Our tariff classes

SA Power Networks' network tariff classes and tariffs for 2017-20 are summarised in Table 12 below. The tariff classes have been constituted with regard to the provisions of clause 6.18.3(d) of the Rules concerning economic efficiency and transaction costs. The suite of tariffs provides:

- A range of tariffs which are dependent upon a customer's size, consumption characteristics and voltage of connection (these factors are generally related); and
- More LRMC cost-reflectivity in the demand tariff options, facilitated by the metering arrangements.

In our 2016/17 Annual Pricing Proposal (**APP**) we included a fifth tariff class for large LV business customers (in our initial TSS this tariff class was called the distribution transformer tariff class).

The previous LV business tariff class has been separated into small business and large LV business because large LV business customers have certain key characteristics that are different to small businesses. This enables more efficient pricing outcomes to be achieved because:

- Large LV business customers use less network assets as they are normally of a size that warrants connection from a transformer and not from LV mains; and
- Large LV business customers are generally large customers with similar load factors and diversity of demand to other large customers whereas small business customers (generally consuming) below 160 MWh pa have poorer individual load factors but greater diversity of demand.

Table 12: SA Power Networks' tariff classes and associated tariffs

Tariff class	Customer type	Tariffs
Residential	Low voltage residential customers, single phase and three phase	RSR, MRD
Small business	Low voltage businesses consuming less than 160MWh per annum, single phase and multi-phase	B2R, SBDT, SBD, LVUU, LVUU24, BSR, SLV
Large LV business	Low voltage businesses consuming more than 160MWh per annum	BD, LV, LBSR, LB2R, LVSG, LVB, BDT
High Voltage business	High voltage businesses generally supplied at 11kV	HV, HV400, HBD, HVB, B2R124H
Major business	High voltage businesses connected to the sub-transmission network or a zone substation	STN, STNXXX, STNB, ZSN, ZSNXXX, ZSNB

The structure of our tariffs and the associated tariff charging parameters for each tariff within a tariff class, follows in Part B, Section 5.4. Note that, for completeness and simplicity, those components of charging parameters associated with standard control services, transmission recovery and PV-FiT recovery have been shown in a summary table in Part B, Section 6.

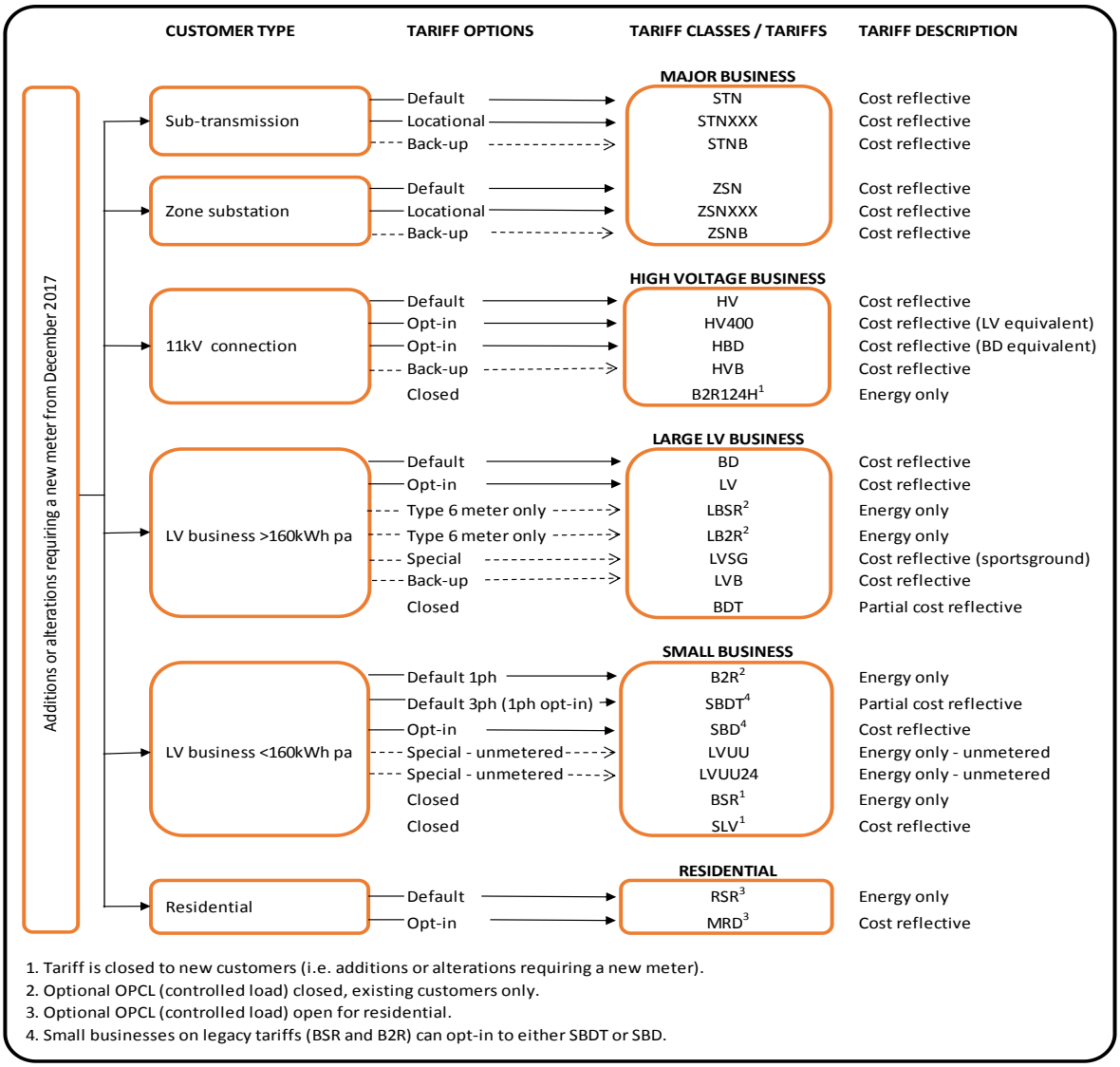
5.4 Our tariff assignment, structures and charging parameters

Within each of our five (standard control services) tariff classes we offer a number of different network tariffs. The basic structure of our tariffs is very similar to that of other electricity distributors in the NEM with three key tariff components:

- A fixed supply charge ($ per day, month or quarter);
- A peak demand charge to send a forward LRMC price signal ($ per kW or kVA per day); and
- A volume charge ($/kWh) to make up the residual contribution to costs not covered by the other two elements.

We have moved towards more simplified tariff structures and have streamlined the number of available tariffs. We have also established a suite of demand tariffs for each tariff class that are more reflective of our LRMC. As such, our tariffs range from energy based to fully cost-reflective demand based tariffs. Figure 15 shows our proposed tariff assignment options for each customer segment.

Figure 15: SA Power Networks' tariff assignment options



1. Tariff is closed to new customers (i.e. additions or alterations requiring a new meter).
2. Optional OPCL (controlled load) closed, existing customers only.
3. Optional OPCL (controlled load) open for residential.
4. Small businesses on legacy tariffs (BSR and B2R) can opt-in to either SBDT or SBD.

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In our 2016/17 APP we introduced a number of changes to our tariffs that have been reflected in this revised TSS. The key changes are as follows:

- New and existing residential customers and small businesses with a single phase supply will default to an existing energy based tariff;
- For new multi-phase small business customers or those small business customers requiring an alteration of supply to a multi-phase supply, we have introduced a transitional version of our cost-reflective kVA demand tariff. These customers have an option to opt-in to a fully cost-reflective kVA demand tariff should they elect to do so. Likewise, existing multi-phase customers on a fully cost-reflective tariff can transfer to the transitional demand tariff;
- The business single rate tariff (closed) has been simplified to a single block from an inclining block tariff;
- Electric vehicles with small chargers (<25A) that are hard-wired, are permitted to use the controlled load tariff; and
- Small customers with multiple properties are eligible to apply for a 'can't lose' 12 month trial on cost-reflective prices if the properties are currently on legacy tariffs (eg BSR and B2R).

In this revised TSS we are no longer proposing mandatory assignment/re-assignment to a cost-reflective transitional demand tariff for residential and single phase small business customers, nor for any existing customers with annual energy above a defined threshold.

Small business customers who require a two or three phase supply (either a new connection or an alteration that requires a new multi-phase meter), will be assigned to a transitional kVA cost-reflective tariff. This assignment has been in place since 1 July 2015[30].

In line with the AER's Draft Decision for our initial TSS, we are no longer proposing a solar PV tariff nor a social tariff in our revised TSS. Also, we no longer propose to apply a minimum kW demand charge, instead a fixed charge will apply for most customers. The elimination of the minimum demand charge and the use of a supply charge makes our LRMC charges more distinct from our residual costs that are recovered from the supply charge and our usage charge.

While we are not proposing any new changes in this revised TSS to those included in our 2016/17 APP, we are now looking to proactively progress the take up of opt-in cost-reflective tariffs for our existing small business customers and our 'prosumer' residential customers. We propose to do this by identifying and re-assigning small business customers who will benefit from a cost-reflective demand based tariff and who have a retailer that will pass through our pricing structure. This will be undertaken on an opt-in basis.

We will also review the potential for some residential customers with advanced interval meters to transfer to the demand based tariff providing they have retailers who will pass through the pricing signals.

For more information on our pricing reform strategy for the 2017-20 period, refer to Part B Section 8.

Our tariff structures and charging parameters for the 2017-20 period are shown in Sections 5.4.2 to 5.4.6.

[30] A cost-reflective kVA demand tariff for two and three phase customers became mandatory in July 2015, a transitional cost-reflective kVA demand tariff became available July 2016. The transitional tariff is open to any customer in the small business tariff class including existing three phase customers and single phase customers, however generally it is more suited to three phase customers.

5.4.1 Demand tariffs

We have established a suite of cost reflective demand tariffs for each tariff class. The purpose of 'cost-reflective' tariffs is to provide a pricing signal to retailers and their customers during periods of peak demand, so that customers can be appropriately rewarded if they respond by moving some of their electricity usage out of the peak demand period. Reducing peak demand will reduce the need for future augmentation investment and future network prices will be lower as a consequence.

The pricing principles in the NER require us to demonstrate an incremental movement towards more cost-reflective tariffs in our TSS, whilst taking into consideration customer pricing impacts. On this basis, we must ensure our charging windows reflect times of overall network stress, while considering the impact these demand tariffs will have on our customers.

Our charging windows reflect when our network has historically peaked. In practice, this equates to when demand exceeds 85% of peak demand. The rationale for our charging windows is summarised below.

The difference in peak and shoulder charges

As explained in Part B, Section 2, the South Australian climate has led to a high demand for air conditioning. Over 90% of homes are air conditioned and the air conditioned floor space of these homes is increasing each year. Because of this, our network demand typically peaks through the warmer months from November through to March. For this reason, we apply a higher charge through the peak period when our network is most stressed.

To manage customer impacts we have a shoulder period that applies for 12 months of the year. The shoulder period enables us to apply a demand charge throughout the year to manage customer impacts (ie to minimise the potential for bill shock) that may otherwise occur if our demand component was recovered through the summer months only. The shoulder period demand charges also reflect other periods of high non-summer usage of the local network (ie on both the LV and HV networks).

The charging window - time

As can be seen in Figure 16, residential demand builds steadily across the day before a pronounced peak occurs from around 4pm through to after 9pm. In contrast, business customers have a demand profile that builds rapidly at the start of the working day before a sustained peak from mid-morning through to around 4pm before tapering off into the evening.

Figure 16 illustrates why we need to reflect a peak demand that spans a relatively wide window of 12 noon to 9pm overall, and with a focus on residential customer demand across the window from 4pm to 9pm.

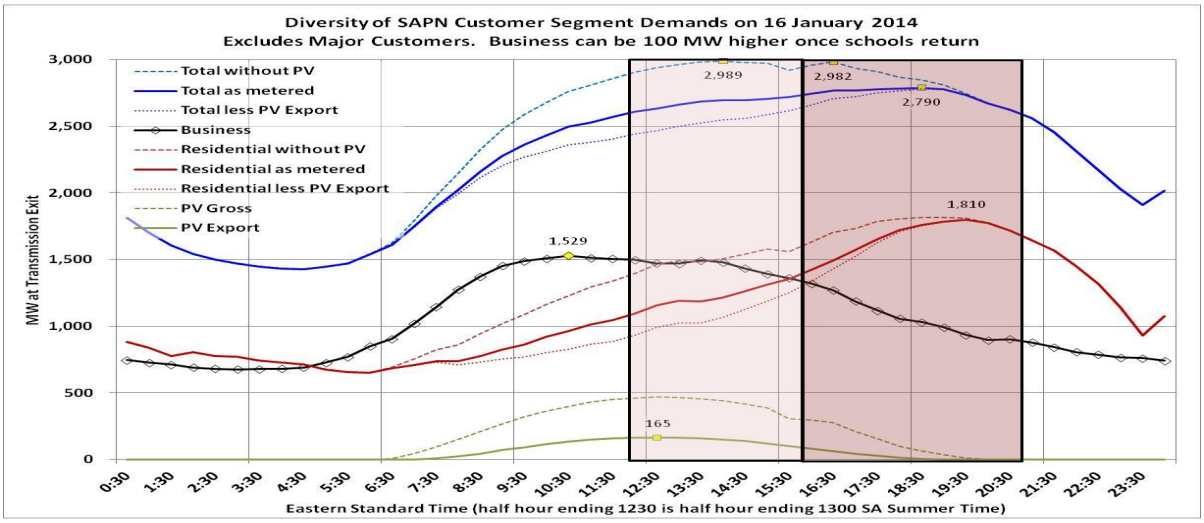
For residential customers the demand charge is based on the actual maximum demand between 4pm and 9pm local time. This reflects some of the residential peak in the winter period (April to October). In summer (November to March) this time period reflects the residential peak and co-incident peak.

For business customers on an actual demand tariff, during the shoulder period the demand charge is based on the actual maximum demand between 12pm and 4pm. This time period reflects the business

peak. An additional peak demand price applies during the peak period (November to March) between 4pm and 9pm reflecting the co-incident peak.

For business customers on an agreed demand tariff, a peak demand price applies during the peak period (November to March) between 12pm and 9pm reflecting the business peak and co-incident peak. An additional demand price applies at any other time (outside of the peak). This reflects the local network requirements.

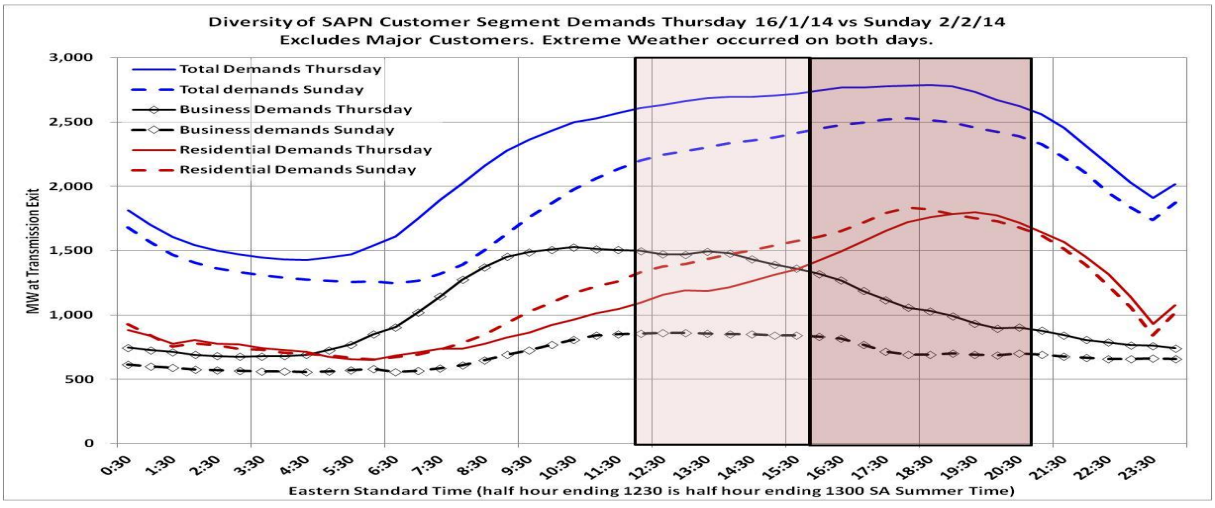
Figure 16: Customer Segment MW Demands on 16 January 2014



The charging periods - days

Figure 17 compares the extreme outcome during the January 2014 heatwave on a workday to a similarly extreme day a fortnight later on a Sunday in February. Because South Australia has such a high proportion of residential air conditioning, there are locations on the network such as coastal areas, the southern suburbs of Adelaide and the eastern suburbs of Adelaide (excluding the CBD) which can have demand as high on a Sunday as on a workday with similar weather. For this reason, residential peak demand charging periods include non-work days (excluding Christmas Day), whereas business peak demand is measured solely on work-days.

Figure 17: Customer Segment MW Demands in 2014 Heatwave – 16 January workday versus 2 February Sunday



5.4.2 *Residential*

The residential tariff class structure and charging parameters are set out in Table 13 and include:

- An inclining block energy tariff. This tariff consists of a fixed daily charge and an inclining two block energy component. A separate energy rate applies to the energy consumption within each block level. To simplify the tariff SA Power Networks aims to reduce the price difference between block one and block two over the 2017-20 period, with an aim to have a single block from July 2019;
- A fully cost-reflective opt-in actual kW demand tariff. The winter demand price will be half of the summer demand price. An initial version of this tariff was introduced in July 2014;
- There is a controlled load (hot water) partner tariff available with these residential tariffs. The controlled load tariff is used to control permanently installed hot water services and other appliances below 25A between 23:00 – 07:00 hours CST, with an option for use between 10:00 – 15:00 hours CST when high solar PV output typically occurs;
- The usage price of the actual kW demand tariff is proposed to be aligned with the controlled load usage price from July 2017;
- The demand tariff components will reflect the distribution LRMCs and the transmission demand based costs (exit price and locational capacity price);
- The NUoS supply charge for the inclining block energy tariff will recover 20% of the total NUoS charges on this tariff (excluding controlled load charges). The same supply charge applies to the actual kW demand tariff;
- All other residual costs will be recovered as non-Time Of Use (**TOU**) prices ($/kWh); and
- The PV-FiT recovery costs are recovered from the residential tariff class as 20% from the supply charge and 80% from usage charges, applied equally to all tariffs and tariff blocks, including controlled load usage.

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Table 13: SA Power Networks' residential tariff structures and indicative 2017/18 NUoS charges

RESIDENTIAL 2017/18				Tariff Components							
Tariff	Description	Assignment	Note	Fixed Charge	Demand		Energy				Customer Numbers
				$/day	$/KW/day		$/kWh				
					Peak Summer	Shoulder Winter	Anytime	Block 1	Block 2	Controlled load	
RSR	Single rate	Default	1,3	0.388	-	-	-	0.124	0.149	0.066	770,000
MRD	Monthly actual kW demand	Opt-in	2,3	0.388	0.390	0.193	0.061	-	-	0.066	1,000

Residential tariff notes:

1. The low voltage residential single rate tariff is currently available to eligible residential customers taking supply at less than 1 kV. These customers ordinarily use a Type 1-6 NEM compliant meter. The metered energy consumption is charged in two blocks. Block 1 is 0-4MWh pa, Block 2 is >4MWh pa.
2. The low voltage residential monthly actual demand tariff is available to eligible residential customers taking supply at less than 1 kV. These customers will require a Type 1-5 NEM compliant meter read at least monthly. The metered energy consumption is charged at a single rate. The maximum kW demand charge is based on the actual maximum demand measured over a half hour interval, on any day in the month between 16:00 and 21:00 hours local time[31]. A higher price applies during the summer period (November to March) than the winter period (April to October). Currently, there is no charge for demand that is higher outside of the peak 16:00 and 21:00 local time, time period. The demand charge is applied on a 'per day' basis according to the days in the month.
3. Controlled load is an optional partner tariff component used to control permanently installed hot water services and other appliances (including electric vehicles) below 25A, during off peak times between 23:00-07:00 hours CST. Operation anywhere within this window is permitted based on the customer's requirements but with a randomised start time. A solar sponge version is also available between and 10:00-15:00 hours CST.

[31] Local time refers to central standard time or central daylight savings time when daylight savings is in effect.

5.4.3 *Small business*

The small business tariffs cover a broad range of customer sizes and types of metering installations. This tariff class is the most diverse in terms of its consumption range and the variety of end uses. There is significant diversity in demand between these customers.

The small business customer tariff class structures and charging parameters are set out in Table 14 and include:

- A two rate energy tariff (peak and off-peak) with a fixed daily charge. Off-peak DUoS and TUoS is set at half of peak. This tariff applies to existing customers and new single phase customers;
- An actual kVA demand tariff with a fixed daily charge. The demand charges reflect LRMC costs, with shoulder demand priced at half of peak demand. This tariff is suitable for larger (eg three phase) small customers, particularly those with either a seasonal load that varies across the year or a flexible load;
- A transitional version of the kVA demand tariff is default (mandatory) for new multi-phase customers or existing multi-phase customers who alter their supply and require a new meter, including single phase customers converting to a multi-phase supply, effective July 2016. The transitional version of the kVA demand tariff is optional for all customers.;
- An unmetered 12 hour energy tariff. This tariff is typically used for overnight public lighting;
- An unmetered 24 hour energy tariff. This tariff is typically used for public phones, traffic lights and telecommunications installations;
- A single rate energy tariff (anytime) with a fixed daily charge. This tariff has been closed to new customers from July 2010 as it is more suited to large business customers;
- An annual kVA agreed demand tariff with a fixed daily charge. This tariff has been closed to new customers from July 2016; and
- There was a controlled load (hot water) partner tariff available with the business two rate and business single rate tariffs. This partner tariff is now closed to new applicants. The controlled load tariff is used to control permanently installed hot water services and other appliances below 25A between 23:00 – 07:00 hours CST, with an option for use between 10:00 – 15:00 hours CST when high solar PV output typically occurs.

Table 14: SA Power Networks' small business tariff structures and indicative 2017/18 NUoS charges

SMALL BUSINESS 2017/18				Tariff Components							
Tariff	Description	Assignment	Note	Fixed Charge	Demand		Energy				Customer Numbers
				$/day	$/KVA/day		$/kWh				
					Peak Summer	Shoulder Year	Anytime	Peak	Off-peak	Controlled load	
B2R	Two rate	Default (1ph)	1,7	0.388	-	-	-	0.0153	0.080	0.066	29,000
SBDT	Monthly actual kVA demand transition	Default (3ph) Opt-in (1ph)	2	0.388	0.189	0.094	-	0.100	0.066	-	1,170
SBD	Monthly actual kVA demand	Opt-in	3	0.388	0.348	0.173	0.054	-	-	-	4,400
LVUU	Unmetered 12 hr (streetlights)	Special	4	-	-	-	0.061	-	-	-	NA
LVUU24	Unmetered 24 hr	Special	4	-	-	-	0.061	-	-	-	NA
BSR	Single rate	Closed	5,7	0.388	-	-	0.137	-	-	0.066	58,400
SLV	Annual agreed kVA demand	Closed	6	10.040	0.277	Add 0.107	0.040	-	-	-	10

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Small business tariff notes:

1. The low voltage business two rate tariff has a TOU structure with peak and off-peak consumption charges. This tariff is the default tariff for new single phase customers. Peak charges (at a higher rate) apply work days 07:00-21:00 hours CST with all other times including non-work-days defined as off-peak (charged at a lower rate). Peak and off-peak is charged in single blocks. A Type 1-6 NEM compliant meter is required.
2. The small business monthly actual kVA demand transition tariff is mandatory for new multi-phase small business customers or existing small business customers who upgrade to a multi-phase supply and require a new meter. The usage portion has peak charges (at a higher rate) that apply work days 07:00-21:00 hours local time, with all other times including non-work-days defined as off-peak (charged at a lower rate). The demand charge is based on the actual maximum kVA demand measured over a half hour interval, on any day in the month between 12:00 and 16:00 hours local time, work days, for the shoulder period (12 months). An additional peak demand price applies during the peak period (November to March) between 16:00 and 21:00 hours local time, on workdays. Currently, there is no charge for demand that is higher outside of the peak 16:00 and 21:00 local time, time period. The tariff is a combination of 50% business 2-rate and 50% small business actual demand. These customers require a Type 1-5 interval meter read at least monthly.
3. The small business actual kVA demand tariff is optional to small business customers taking supply at less than 1 kV. Metered energy consumption is charged at a single rate. Shoulder demand (12 months) applies to the monthly workday maximum kVA demand (measured over a half hour interval) between 12:00 and 16:00 hours local time, for each month of the year. Peak demand prices also apply during the peak period (November to March) between 16:00 and 21:00 hours local time, on workdays. These customers will require a Type 1-5 interval meter read at least monthly.
4. Unmetered supply tariffs are applicable to supply points that are not metered. Unmetered tariffs comprise of an energy rate that is applied to the calculated electricity consumption using an agreed algorithm from the applicable Metrology Procedure. Unmetered supply tariffs are generally invoiced monthly.
5. The business single rate tariff is a closed tariff that was available for use before July 2010. The consumption is charged on a flat scale (previously inclining block until July 2016).
6. The low voltage agreed kVA demand tariff is a closed tariff that was available for use before July 2016. The peak demand is agreed, and measured on work days between 12:00 and 21:00 hours local time, during the summer months of November to March and is charged on an inclining scale in two demand blocks. Block 1: 0-1000kVA, block 2: >1000kVA. An additional demand applies where higher levels of demand are required during the year than are required during the peak demand period. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.

7. Controlled load is an optional partner tariff component used to control permanently installed hot water services and other appliances below 25A, during off peak times between 23:00-07:00 hours CST. Operation anywhere within this window is permitted based on the customer's requirements but with a randomised start time. A solar sponge version is also available between and 10:00-15:00 hours CST.

5.4.4 *Large LV business*

The large LV business tariff class covers a broad range of customer sizes and types of metering installations. All of the customers in this proposed tariff class are large customers (consuming 160 MWh or more each year) and these customers typically exhibit higher load factors than the small business tariff class, albeit with less diversity among each cohort. These customers typically do not use (or have minimal use of) the LV power-lines, unlike a typical small business customer. All customers in this tariff class are on cost-reflective tariffs (or a transitional version) as of July 2015.

Large Business customer tariff class structures and charging parameters are set out in Table 15 and include:

- An actual kVA demand tariff with a fixed daily charge. The demand charges reflect LRMC costs, with shoulder demand priced at half of peak demand. This tariff is the default tariff for large LV business customers and is suitable for larger customers, particularly those with either a seasonal load that varies across the year or a flexible load;
- A transitional version of the actual kVA demand tariff was created for customers on fully cost-reflective tariffs and were facing cost increases. As of July 2016 the transitional version of this tariff was closed to existing large LV business customers;
- An agreed kVA demand tariff with a fixed daily charge. This tariff is available on an opt-in basis for large LV business customers. The demand charge is stepped according to the customer's size, to reflect the LRMC of providing network capacity at the particular voltage level. There are variants of this tariff available for:
    - Back-up supply; and
    - Sportsgrounds with significant floodlighting. This variant uses a peak demand period of 12:00 to 19:00 local time, December to February on work days. This is because floodlights are not typically used during extreme heat;
- A single rate transitional tariff with a fixed daily charge. This tariff is for large business customers with a Type 6 meter only; and
- Two rate transitional tariff with a fixed daily charge. This tariff is for large business customers with a Type 6 meter only.

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Table 15: SA Power Networks' large LV business tariff structures and indicative 2017/18 NUoS charges

LARGE LV BUSINESS 2017/18				Tariff Components							
Tariff	Description	Assignment	Note	Fixed Charge	Demand		Energy				Customer Numbers
				$/day	$/KVA/day		$/kWh				
					Peak	Shoulder	Anytime	Peak	Off-peak	Controlled load	
BD	Monthly actual kVA demand	Default	1	0.349	0.348	0.173	0.052	-	-	-	1,280
LV	Annual agreed demand	Opt-in	2	10.000	Blk 1 0.277 Blk 2 0.226	Add 0.107	0.040	-	-	-	3,530
LVSG	Sports ground annual agreed demand	Special	3	10.000	Blk 1 0.277 Blk 2 0.266	Add 0.107	0.040	-	-	-	5
LVB	Annual agreed demand	Back-up	4	10.000	0.107	Add 0.107	0.040	-	-	-	5
LBSR	Single rate transition	Type 6 meter	5,7	0.349	-	-	0.160	-	-	0.066	15
LB2R	Two rate transition	Type 6 meter	6	0.349	-	-	-	0.180	0.092	0.066	70
BDT	Monthly actual kVA demand transition	Closed	6	0.349	0.232	0.115	-	0.085	0.060	-	100

Large LV business tariff notes:

1. The large LV business actual kVA demand tariff is the default tariff for large LV business customers. It has a fixed daily charge and a metered energy consumption charged at a single rate. Shoulder demand (12 months) applies to the monthly workday maximum kVA demand (measured over a half hour interval) between 12:00 and 16:00 hours local time, every month of the year. An additional peak demand price applies during the peak period (November to March) between 16:00 and 21:00 hours local time, on workdays. These customers will require a Type 1-5 interval meter read at least monthly.
2. The large LV business agreed kVA demand tariff is an opt-in tariff for large LV business customers. It has a fixed daily charge and a metered energy consumption charged at a single rate. The peak demand is measured on work days between 12:00 and 21:00 hours local time, during the summer months of November to March and is charged on a declining scale in two consumption blocks. Block 1: 0-1000kVA, block 2: >1000kVA. An additional demand applies where higher levels of demand are required during the year than are required during the peak demand period. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.
3. The sportsground agreed kVA demand tariff is a special purpose tariff for sportsgrounds with significant floodlighting. It has a fixed daily charge and a metered energy consumption charged at a single rate. The peak demand is measured on work days between 12:00 and 21:00 hours local time, during the summer months of December to February and is charged on a declining scale in two consumption blocks. Block 1: 0-1000kVA, block 2: >1000kVA. An additional demand applies where higher levels of demand are required during the year than are required during the peak demand period. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.
4. The back-up agreed kVA demand tariff is special purpose tariff. It has a fixed daily charge and metered energy consumption charged at a single rate. The peak demand is measured on work days between 12:00 and 21:00 hours local time, during the summer months of November to March and is charged on a flat scale. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.
5. The single rate transitional tariff has a fixed daily charge. The metered energy consumption is charged on a flat scale. This tariff is only available to businesses with a Type 6 meter.
6. The two rate transitional tariff has a fixed daily charge and a TOU structure with peak and off-peak consumption charges. Peak charges (at a higher rate) apply on work days from 07:00-21:00 hours local time, with all other times including non-work-days defined as off-peak (and charged at a lower rate). Peak usage and off-peak is charged in single blocks. This tariff is only available to businesses with a Type 6 meter.

7. A controlled load partner tariff is an optional tariff component used to control permanently installed hot water services and other appliances below 25A, during off peak times between 23:00-07:00 hours CST. Operation anywhere within this window is permitted based on the customer's requirements but with a randomised start time. A solar sponge version is also available between and 10:00-15:00 hours CST.

5.4.5 *High Voltage business*

There are over 200 customers that take supply at high voltage. They are predominantly manufacturing, utility, agricultural and commercial installations.

High Voltage customer tariff class structures and charging parameters are set out in Table 16 and include:

- A high voltage annual agreed kVA demand tariff which is suitable for larger high voltage customers above 400 kVA. This is the default tariff for the HV tariff class. There are variants of this tariff as follows:
    - 400kVA variant which is more suited to demands below 400kVA. This variant is the equivalent of the large LV business agreed demand tariff; and
    - A back-up tariff for customers who have a second supply source for a higher security of supply;
- An actual kVA demand tariff suitable for large customers, for seasonal large customers whose load varies across the year and also those large customers with very flexible load; and
- A high voltage business two rate tariff which is closed to new customers.

The boundaries between these three tariffs are approximate, with the customer able to elect any of the three tariffs through a request via their retailer.

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Table 16: SA Power Networks' high voltage business tariff structures and indicative 2017/18 NUoS charges

HIGH VOLTAGE BUSINESS 2017/18				Tariff Components						
Tariff	Description	Assignment	Note	Fixed Charge	Demand		Energy			Customer Numbers
				$/day	$/KVA/day		$/kWh			
					Peak	Additional	Anytime	Peak	Off-peak	
HV	Annual agreed kVA demand	Default	1	68.493	0.222	0.128	0.028	-	-	140
HV400	Annual agreed kVA demand <400kVA	Opt-in	2	10.000	0.277	0.107	0.038	-	-	5
HBD	Monthly actual kVA demand	Opt-in	3	0.349	Pk 0.348	Sh 0.173	0.050	-	-	45
HVB	Demand kVA	Back-up	4	-	0.128	0.128	0.028	-	-	35
B2R124H	Two rate	Closed	5	0.349	-	-	-	0.180	0.090	0

High voltage business tariff notes:

1. The high voltage annual agreed kVA demand tariff is the default tariff for this tariff class. It consists of a single block of peak demand, a single usage price for energy and a significant fixed daily charge. An additional demand applies where higher levels of demand are required during the year than are required during the peak demand period. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.
2. The high voltage annual agreed kVA demand <400kVA tariff is available on an opt-in basis however the customer's maximum demand must not exceed 400 kVA. It consists of a single block of peak demand, a single usage price for energy and a fixed daily charge.

An additional demand charge applies where higher levels of demand are required during the year than are required during the peak demand period. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.

3. The business monthly actual kVA demand tariff is an opt-in tariff. It has a metered energy consumption charged at a single rate. Shoulder demand applies to the monthly workday maximum kVA demand (measured over a half hour interval) between 12:00 and 16:00 hours local time, every month of the year. An additional peak demand price applies during the peak period (November to March) between 16:00 and 21:00 hours local time, on workdays. These customers will require a Type 1-5 interval meter read at least monthly.
4. The back-up annual agreed kVA demand tariff is a special purpose tariff. It consists of a single block of peak demand and a single usage price for energy. An additional demand applies where higher levels of demand are required during the year than are required during the peak demand period. Customers (through their retailer) can apply for agreed demand to be amended. Reduction requests require supporting evidence. This tariff requires a Type 1-5 interval meter capable of measuring both active and reactive power.
5. The two rate tariff is closed to new customers. It has a fixed daily charge and a TOU structure with peak and off-peak consumption charges. Peak charges (at a higher rate) apply during work days from 07:00-21:00 hours local time, with all other times including non-work-days defined as off-peak (charged at a lower rate). Peak and off-peak usage is charged in single blocks. This tariff is only available to businesses with a Type 6 meter.

5.4.6 *Major business*

The major business customers are the largest 20 customers connected to SA Power Networks' network. They comprise a range of industrial, manufacturing and commercial enterprises. Customers connected at 33kV or 66kV utilise the sub-transmission agreed kVA demand tariff while customers connected to a zone substation (generally at 11kV) use the zone substation agreed kVA demand tariff. Most of these customers have demand exceeding 10 MVA or usage exceeding 40 GWh pa and so their transmission tariff component is priced locationally. Once a customer has received locational transmission pricing, we continue to apply such prices unless we receive a customer request via their retailer to have postage stamp transmission pricing which would require their demand to have reduced below 10 MVA and their annual usage reduced to below 40 GWh pa.

Table 17: SA Power Networks' major business tariff structures and indicative 2017/18 NUoS charges

HIGH VOLTAGE BUSINESS 2017/18				Tariff Components						
Tariff	Description	Assignment	Note	Fixed Charge	Demand		Energy			Customer Numbers
				$/day	$/KVA/day		$/kWh			
					Peak	Additional	Anytime	Peak	Off-peak	
STN	Sub-transmission annual agreed kVA demand (non-locational)	Default	1	-	0.094	0.022	0.013	-	-	1
STNXXX	Sub-transmission annual agreed kVA demand (locational)	Locational	2	x	x	x	x	-	-	9
STNB	Sub-transmission kVA back-up	Back-up	3	-	0.022	0.022	0.013	-	-	2
ZSN	Zone substation annual agreed kVA demand (non-locational)	Default	1	-	0.171	0.099	0.016	-	-	2
ZSNXXX	Zone substation annual agreed kVA demand (locational)	Locational	2	x	x	x	x	-	-	7
ZSNB	Zone substation kVA back-up	Back-up	3	-	0.099	0.099	0.016	-	-	1

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Major business tariff notes:

1. The sub-transmission and zone substation kVA demand tariff is for business customers that take supply directly from the sub-transmission network or a zone substation but do not utilise locational transmission pricing (ie their demand is < 10 MW and their annual usage is below 40 GWh pa). It consists of a single block of peak demand and a single usage price for energy. The peak demand price applies during the peak period (November to March) between 12:00 and 21:00 hours local time, on workdays. An additional demand charge applies where higher levels of demand are required during the year than are required during the peak demand period. The minimum level of agreed demand (peak plus additional) for this tariff is 5,000 kVA. A Type 1-4 interval meter is required with the ability to measure both active and reactive power.
2. The locational sub-transmission and zone substation kVA demand tariff is for business customers that take supply directly from the sub-transition network or a zone substation and are subject to locational transmission pricing (ie their demand is > 10 MW and their annual usage is above 40 GWh pa). It consists of a fixed daily rate based on locational pricing, a single block of peak demand and a single usage price for energy. The peak demand price applies during the peak period (November to March) between 12:00 and 21:00 hours local time, on workdays. An additional demand charge applies where higher levels of demand are required during the year than are required during the peak demand period. The minimum level of agreed demand (peak plus additional) for this tariff is 5,000 kVA. A Type 1-4 interval meter is required with the ability to measure both active and reactive power.
3. The sub-transmission and zone substation kVA demand back-up tariff is a special purpose tariff for business customers that require additional security of supply. It consists of a single block of peak demand and a single usage price for energy. A Type 1-4 interval meter is required with the ability to measure both active and reactive power is required.

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General notes applicable to demand tariffs:

1. Agreed Demand charges for business customers are determined on the basis of the maximum half-hour trading interval for:

    a. Agreed Maximum Demand (Annual Peak Demand) on workdays between 1200 and 2100 local time, during November to March only;
    b. Agreed additional maximum demand (Additional Demand), as the difference between the customer's anytime maximum demand and the agreed maximum demand; and
    c. For business customers on the Sports Ground demand kVA tariff, the Agreed Peak Demand shall be determined on work days between 1200 and 1900 local time, during December to February only. Additional Demand shall be determined using all other times of the year.

2. Actual Demand charges for business customers are determined on the basis of the maximum half-hour trading interval since the last meter read (Type 1-4 meters are assumed to be read each calendar month) for:

    a. Summer Peak Demand on work days between 1600 and 2100 local time, during November to March only;
    b. Year-round Shoulder Demand on work days between 1200 and 1600 local time; and
    c. Off-peak Demand at all other times (the price is zero for actual off-peak demand).

3. Actual Demand charges for residential customers are determined on the basis of the maximum half-hour trading interval since the last meter read (Type 1-4 meters are assumed to be read each calendar month) for:

    a. Summer Peak Demand on all days between 1600 and 2100 local time during November to March only;
    b. Winter Shoulder Demand on all days between 1600 and 2100 local time; and
    c. Off-peak Demand at all other times (the price is zero for actual off-peak demand).

4. Peak energy is energy consumed on business days between the hours of 0700 and 2100 CST. Type 6 meters typically measure this component during week days whereas Type 1-5 meters will measure this in on work days. For customers with Type 6 metering that does not recognise specific days, peak energy is energy consumed on each day between the hours of 0700 and 2100 CST.

5. Off-peak energy is energy consumed other than peak energy.

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Part B, Section 6

Pricing of Standard Control Services

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6. Pricing of Standard Control Services

This Section demonstrates how SA Power Networks' network tariffs for 2017-20 will comply with the requirements of the Rules and the AER's Final Decision (revenue determination) in respect of the pricing X factors, side constraints and pricing principles.

6.1 Rule requirements relating to tariff classes and tariff structures

6.1.1 Rule requirements

Clause 6.18.1A (b) of the Rules specifies that SA Power Networks' Tariff Structure Statement must comply with the pricing principles for direct control services. These pricing principles are set out in Rule 6.18.5.

The network pricing objective has been specified in Rule 6.18.5 (a) which requires that our tariff charges should reflect our efficient costs of providing these services to customers using these tariffs. Note that efficient costs are determined by the AER in its regulatory determinations.

The pricing principles set out in clauses 6.18.5 (e) - (j) of the Rules are: -

Pricing principles

(e) For each *tariff class*, the revenue expected to be recovered must lie on or between:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

In respect of pricing side constraints, SA Power Networks is required to comply with Rules clause 6.18.6 of the Rules. This clause effectively limits the annual movement of revenue recovery between tariff classes such that any tariff class cannot face increases that are more than 2% higher than the average increase for all tariffs. Complying with this side constraint is a matter for Annual Pricing Proposals and not for this TSS.

SA Power Networks will ensure that the annual increase of each tariff class average DUoS price (c/kWh) is not more than 102% of the average DUoS price increase overall. There is potential tariff rebalancing required over the 2017-20 period so this side constraint will be carefully reviewed. Note that the side constraint applies to DUoS only and or the tariff class as a whole, and not to individual tariffs, tariff elements nor individual customer outcomes.

6.2 Compliance with pricing principles

This section demonstrates SA Power Networks' compliance with the pricing principles set out in clause 6.18.5 of the Rules, in particular the pricing principles set out in paragraphs (e) to (j).

Clause 6.18.5(e) Stand-alone and Avoidable costs

Paragraph (e) requires SA Power Networks to ensure that the revenue recovered for each tariff class lies between:

- An upper bound, representing the stand-alone cost of serving the retail customers who belong to that class; and
- A lower bound, representing the avoidable cost of not serving those retail customers.

The stand-alone and avoidable cost methodologies are consistent with those used for the 2010-15 regulatory control period, however the calculations have been updated as part of the LRMC recalculation. These approaches are used to calculate the revenues for each standard control services tariff class associated with each cost methodology. These costs are compared with the weighted average revenue derived from SA Power Networks' proposed tariffs.

The revenue expected to be recovered from each of SA Power Networks' tariff classes in 2017/18 is compared with the stand-alone and avoidable costs in Table 18.

Table 18: Stand-alone and Avoidable distribution network costs 2017/18 ($ M)

Tariff class	Stand-alone cost	Tariff revenue	Avoidable cost
Major business	$44	$9	$6
HV business	$57	$33	$5
Large LV business	$364	$175	$75
Small business	$560	$142	$103
LV residential	$648	$410	$246

SA Power Networks' tariff classes lie within the subsidy free range, in that the expected DUoS revenue collected from each tariff class lies between the avoidable and stand-alone costs of supply and therefore complies with clause 6.18.5(e).

Clause 6.18.5(f) Long Run Marginal Costs

Paragraph (f) requires each tariff to be based on the LRMC of providing the service to the customers on that tariff.

SA Power Networks has applied the average incremental cost (**AIC**) approach to determine the network LRMC for our tariff classes. The methodology has been set out in detail in Part B, Appendix C of this revised TSS. The calculation of our LRMC in our revised TSS is similar to our previous LRMC

calculations, however we have used a portion of the capital and operating expenditure forecast from the AER's Final Decision for SA Power Networks determination 2015/16 to 2019/20 to update the calculations. Our revised calculation includes:

- Augmentation expenditure by system level;
- A proportion of replacement expenditure (approximately 7%), assessed as providing a useable network capacity increase through the installation of modern equipment; and
- Operating expenditure associated with the above capital expenditure, based on a percentage of the asset costs.

These calculations are carried out at the following voltage and voltage transformation levels of the network:

- Sub-transmission (33 kV and 66 kV);
- Zone Substation (11 kV busbar);
- HV Feeder (11 kV system connected);
- Distribution Substation (Low Voltage, connected at the substation busbar); and
- LV Feeder (connected to the low voltage network).

The marginal cost at each network voltage level has been determined using the following relationship:

$$LRMC(AIC) = \frac{PV(growth\ \ related\ \ capex) + PV(growth\ \ related\ \ opex)}{PV(incremental\ \ demand)}$$

Where:

growth related capex is the annualised capital expenditure to meet the additional demand and new customer connections forecast over the forecast period;

growth related opex is the incremental annual cost of operating and maintaining the newly constructed network and connection assets over the forecast period; and

incremental demand is the forecast change in kVA demand compared with the base year.

The calculated AIC values derived from our capital and operating forecasts along with other assumptions (outlined in Part B, Appendix C) are shown in Table 19. These values are derived for each system level.

Table 19: AIC calculation

System level	Δ MW	Δ cost	ST	HV bus	HV net	LV bus	LV net	Alloc. cost	$/kW/ year	pf	$/kVA/ year
ST	**142**	**18.8**	3.3					**3.3**	$23	0.95	**$22**
ZSN	**104**	**27.5**	2.4	4.2				**6.6**	$64	0.90	**$57**
HV feeder	**37**	**14.2**	0.9	1.5	0.9			**3.3**	$88	0.90	**$80**
LV Substation	**41**	**12.2**	0.9	1.6	1.0	0.9		**4.5**	$111	0.90	**$100**
LV feeder	**493**	**6.0**	11.3	20.0	12.2	11.3	6.0	**60.9**	$123	0.90	**$111**
Totals		***78.6***	***18.8***	***27.5***	***14.2***	***12.2***	***6.0***	***78.6***			

The calculation of the AIC from the forecast kW demand is in $/kW/annum. The network is augmented to provide additional capacity kVA for the connection of additional load, rather than in kW terms. Accordingly, the LRMC has been converted to $/kVA per annum using the typical (and compliant) power factor for each voltage level.

In Table 20, the LRMC outcomes have been updated for individual tariff classes for 2017/18. The AIC results at the sub-transmission, high voltage and distribution transformer levels are directly applicable to the major business, high voltage business and large LV business tariff classes. At low voltage, the LRMC outcomes apply to both Small Business and Residential tariff classes.

Table 20: Calculated LRMC for SA Power Networks' network ($2017/18)

Tariff class	LRMC, $/kVA per annum
Major business	$22 (STR) - $57 (ZSN)
HV business	$80
Large LV business	$100
Small business	$111
LV residential	$111

To provide confidence in the reasonableness of these long-run estimates, we have compared these new LRMC calculations to those used by Victorian distributors in their 2017-20 TSS. The Victorian network is similar to SA Power Networks' with privatised ownership and similar network contingency design standards. (Queensland and NSW are government owned and have different design standards). The Victorian and South Australian networks also have similar weather, albeit slightly less extreme in summer in Victoria. Victoria has on average more customers per kilometre. Given that we are trying to prepare an LRMC for use with State-wide[32] pricing that reflects costs for the majority of customers, checking against LRMC prices with a network similar to ours provides a useful price comparison.

Figure 18 below compares SA Power Networks' updated estimate of LRMC with the average of the Victorian distributors and each Victorian distributor. Some assumptions have been made to enable this comparison. The chart indicates that the LRMC prices are reasonable.

[32] Note that SA Power Networks is required by SA Government legislation to use State-wide pricing of distribution services, therefore we have not considered locational LRMC differences.

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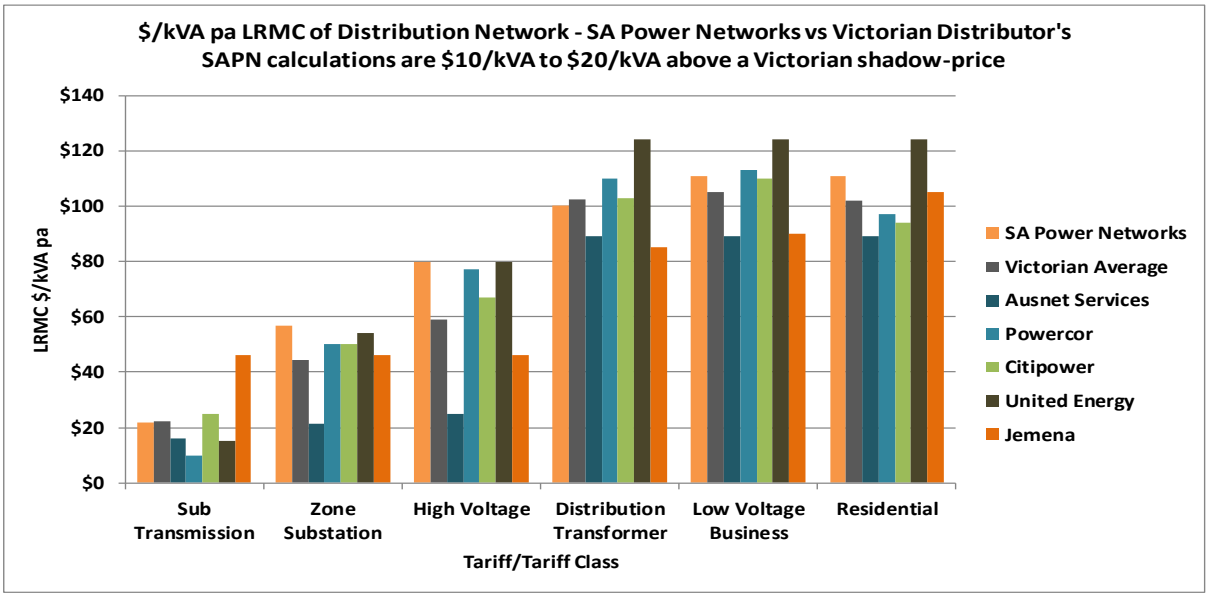
Figure 18: LRMC Cost comparison ($/kVA per annum) of SA Power Networks with Victorian Distributors



A demand based tariff parameter should indicate to customers the LRMC of their utilisation of the network. For simplicity, we have determined the demand charges to recover the same amount of money as indicated by the LRMC multiplied by that tariff's co-incident demand.

We have not endeavoured to analyse the degree to which the usage-based tariffs used by most customers of the small business and residential tariff classes signal LRMC, as the signal is poor. We do note though that these tariffs reflect the total efficient costs of serving the customers assigned to that tariff, as required by clause 6.18.5(g)(1) of the Rules. These costs comprise the LRMC and the balance of other efficient costs.

Clause 6.18.5(g) - Tariffs reflect total efficient costs

The way in which the LRMC and the balance of efficient costs has been taken into account by SA Power Networks in establishing the 2017/18 tariffs has involved the following considerations:

- ***Ensuring that demand price signalling components reasonably signal the LRMC:*** as discussed above;
- ***Use of price signalling components where practicable:*** In Type 6 metering situations where demand cannot be effectively signalled, energy rates have been structured to ensure that efficient costs are recovered. However, the metering does not indicate usage during high consumption periods so we have retained relatively simple tariff structures which recover the efficient costs for that tariff's assigned customers. We have a single block tariff for Business single, and a single block tariff for business two-rate (off-peak is set at 50% of the peak-rate price). For residential, the inclining two-block tariff has been set with the second block being 2.5 c/kWh above the first block in line with the 2016/17 tariff. We aim to combine these two blocks by 2019/20; and
- ***Revenue recovery through non-distortionary charging parameters:*** For cost-reflective tariffs, demand charging parameters recover a proportion of the total revenue reflecting high network utilisation period future costs. The balance of revenue recovery takes place in

the least distortionary manner possible, through fixed supply charges for the efficient costs of local assets and customer service with the balance recovered through energy usage rates. Lower rates apply to usage that is outside of high network utilisation periods for off peak periods (two-rate tariffs) and controlled load.

Table 21 below outlines how SA Power Networks allocates the revenue across tariff classes. This ensures that tariffs reflect the efficient costs incurred in supplying customers using those tariffs. A few key points of explanation are set out below. Note Table 21 shows how the direct control services costs are allocated and it also shows the methods for recovery of Designated Pricing Proposal Charges under clause 6.18.7 of the Rules (Transmission charges) and of Jurisdictional Scheme Amounts under clause 6.18.7A (the Solar PV FiT).

Table 21: 2017/18 revenue cost allocation across network elements and to tariff classes

Allocation Basis to Tariff Class	Tariff Class				
	Major business	**High voltage business**	**Large LV business**	**Small business**	**Residential**
Number of Customers (NMI's)	20	192	4,910	92,970	771,000
Diversified Demand (MVA)	149	203	793	644	1,605
Usage GWh (at Pool Exit)	973	931	3,454	1,785	4,253
Distribution (SA Power Networks) $775M					
Sub-transmission lines	9% allocated half demand half usage				
Zone substations	17% allocated half demand half usage				
High Voltage Lines		32% allocated half demand half usage			
Distribution Transformers			20% allocated half demand half usage		
Low Voltage Lines				16% to NMI/demand/usage	
Services				6% NMIs only	
PV FiT Recovery (SA Government Scheme) $88M					
Sub-transmission lines	37% allocated on DUoS proportion				63%
Transmission (ElectraNet) $263M					
Transmission Exit	6% locational price pass-through	10% peak demand allocation			
Transmission Locational		35% peak demand allocation			
Transmission Non-locational		19% allocated on demand		30% allocated on usage	
Transmission Common Service					

Distribution costs of $775M are allocated across the tariff classes (and the tariffs) according to the usage by customers of the voltage steps involved. The efficient costs are apportioned across these asset categories, with customer use of these assets determined by the customers' diversified demand and usage. Some assets are apportioned according to customer numbers eg the connection services and a portion of the asset LV Lines reflecting house frontage needs. Customers are only charged for an asset category if they use it.

We allocate 50% of asset charges to demand as we have found that these amounts broadly reflect the LRMC of these assets. Note that we price the actual tariffs using the actual LRMC calculation, not the 50% cost allocation. The balance of asset charges are allocated in a non-distortionary manner using energy, apart from those costs which are driven principally by numbers of customers. As we have State-wide pricing requirements under South Australian Government legislation, we do not consider the issue of distance (eg long or short feeders) or location (eg urban or rural) in these calculations. If we need to consider pricing for a potentially constrained network, we will look at other variations to this for those specific locations, and consider an 'opt-in' tariff/rebate. The variation might have a

stronger demand signal reflecting the local LRMC. Customers would retain the right to access State-wide prices despite the constraint.

Residual Distribution Cost-Recovery

After pricing the LRMC signal in the DUoS demand tariff element, the balance of residual costs is recovered from usage and fixed (supply charge) tariff elements.

The residential supply charge has been set to recover the service wire cost and about half of the LV lines costs allocated to residential. Overall, the fixed charges (including PV-FiT recovery and transmission components) amount to 20% of the residential usage tariff NUoS charges. This is in line with the Panel's support for up to 20% of residential charges being fixed (this concept was first adopted for the PV- FiT recovery. We have used the same concept for providing a fair and equitable limit to NUoS fixed charges).

We have used the same supply charge for the other LV lines-connected tariffs, ie to all residential and small business tariff class customers (excluding unmetered customers).

The agreed demand tariffs for large LV business and HV business include some supply charges reflecting fixed costs associated with the connecting equipment eg the transformer for LV agreed demand. Over time, we will review the level of this fixed charge to reflect specific equipment used. For example, in 2017/18, the fixed charge for HV agreed demand of $20,000 pa is 80% of the amount charged in 2016/17. Refer to Table 22, which shows the proportion of an average customers distribution charge, recovering either LRMC reflective costs (demand charges) or residual costs (fixed and usage charges). Note that the residential and small business usage tariffs do not have any LRMC demand tariff element.

Table 22: Residual distribution cost recovery

Tariff element	Major Business	HV Business	Large LV Business	Small Business Demand	Small Business Usage	Residential Demand	Residential Usage
LRMC Demand	69%	50%	46%	48%	-	49%	-
Fixed Charges	-	11%	7%	3%	10%	19%[1]	24%[1]
Usage Charges	31%	39%	46%	50%	90%	32%	76%

Note:

1. The residential supply charge applies equally to the demand and usage tariffs. The demand tariff has (on average), a higher usage pa resulting in a lower fixed charges proportion (19% vs 24%).

PV-FiT Recovery

We discussed the relative level of PV-FiT recovery from different tariff classes at our deliberative session with the Panel in August 2016. The Panel decided that the proportion of costs borne by residential customers in 2016/17 (63%) was reasonable. The Panel also decided that 20% of the residential recovery should be on a 'per customer' basis with the balance recovered from usage.

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We have implemented the Panel's findings in this revised TSS, with the allocation to each business tariff class of the 37% business allocation based on the proportion of DUoS payable by that tariff class. This is consistent with the allocation made in 2016/17.

We have simplified the pricing of the PV-FiT recovery to a flat rate (c/kWh) with a single price set for each tariff class. The residential tariff class has 20% of the recovery priced on a $/customer basis and small business has a portion of their costs charged out at the same $/customer. This enables a similar spread across the tariff classes similar to the 2016/17 outcomes. Table 23 below shows the indicative prices for 2017/18 to recover $88M in PV-FiT recovery. The flat rates apply equally to all usage tariff elements, eg for residential tariffs the 1.15 c/kWh applies to the demand tariff usage, to the usage tariff block 1 and 2, and to the controlled load tariff usage.

Table 23: PV-FiT cost recovery

Tariff element	Major Business	HV Business	Large LV Business	Small Business	Small Business Unmetered	Residential	Controlled Load
Fixed Charges $pa	-	-	-	$14.45	-	$14.45	-
Usage Charges c/kWh	0.08	0.33	0.49	0.73	0.73	1.15	1.15

Transmission Recovery

We apply the ElectraNet pricing structure where possible as our basis for allocating and pricing the recovery of Designated Pricing Proposal transmission charges under NER clause 6.18.7. For our Major Business tariff class, each customer is priced individually according to their location and their demand/energy characteristics. They receive the same transmission price as if they were directly connected to the transmission network. For all other tariff classes, we apply a State-wide average price but pass through the intent of ElectraNet's prices, for example:

- The locational charges for transmission exits and locational TUoS are summed and allocated evenly across all customers according to their diversified demand. Where we have demand components in our tariffs, these costs are reflected in that tariff parameter. Where we do not have demand components, these costs are included in the usage charges.

- The non-locational and common service charges are allocated to tariff classes according to the load factor of that tariff class. ElectraNet has an a choice of price for these charges, with a maximum $/kW charge suitable for tariff classes with above-average load factor and a maximum $/MWh charge suitable for tariff classes with below average load factor. We allocate the demand tariffs classes on the $/kW basis (as these customers have above average load factor) with the charges recovered from a usage (c/kWh) basis that does not distort the TUoS demand signal. The balances of these costs are allocated to the usage based small customer tariff classes (as these have below average load factor) with the amounts split amongst the tariff classes according to energy usage. This results in a more optimal allocation of costs and resultant prices than if a combination of the ElectraNet $/MWh and

$/kW options were used. It also more closely reflects the intent of ElectraNet's pricing structure.

The revenue cost allocation model enables us to reasonably apportion our charges across customers in a manner which ensures good cost-reflectivity for State-wide prices. It also provides guidance for the subsequent conversion of allocated costs to prices.

Clause 6.18.5(h) and (i) - Customer impact and understanding of tariffs

Clause 6.18.5(h) requires us to consider the impact on customers of annual changes in prices. This will mainly be an Annual Pricing Proposal matter however this clause has relevance to the TSS.

We are required to balance the competing needs of having tariffs that comply with the pricing principles (ie are cost-reflective), the time necessary for a period of transition to such tariffs, the degree of customer choice available for tariffs and the extent to which customers can mitigate tariff impacts through usage decisions. Clause 6.18.5(i) goes further to require us to structure our tariffs in a way that can be understood by that tariff's customers, with some consideration of information available to and consultation with those customers.

In our revised TSS we have adopted a measured and methodical approach towards cost-reflective tariffs for residential customers and small business customers. In developing this revised TSS we have taken into consideration the additional findings from our recent stakeholder engagement outlined in Part B, Section 4, the stakeholder submissions to the AER's Issues Paper and the AER's Draft Decision on our initial TSS, outlined in, Part B, Section 3. Our revised tariff strategy for the 2017-20 period is outlined below.

- We anticipate that up to 94% of existing small business customers and up to 99.9% of existing residential customers will not utilise cost-reflective tariffs in the 2017-20 period;
- We propose to target residential prosumers with our fully cost-reflective opt-in tariffs in conjunction with supportive retailers;
- We propose to target those small business customers who would benefit from the use of the cost-reflective opt-in tariff where the customer's retailer has retail tariff offerings that pass the benefit on to the customer; and
- We propose to encourage small business customers to opt-in to the cost-reflective tariff with a 'can't lose' guarantee for customers with multiple National Meter Identifier (**NMIs**), to learn about their electricity requirements under cost-reflective tariffs with the possibility of making savings but without the risks of making losses.

We believe that slowing the pace of tariff reform in this regulatory control period and encouraging prosumers and businesses with multiple NMIs who will benefit from opting-in to demand based tariffs, will provide more comprehensive data that will enable us to develop more appropriate pricing signals for these smaller customers in subsequent periods. It will also support development of intermediaries that can provide advice to customers on optimal solutions for both network and energy procurement. Learnings from this experience will be important to any mandatory roll-out of cost-reflective pricing

to the larger volume of residential and small business customers who have advanced interval meters in the 2020-25 period.

SA Power Networks' 2017/18 to 2019/20 tariffs as outlined in this TSS have therefore been structured to comply with the pricing principles of clauses 6.18.5 of the Rules.

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Part B, Section 7

Pricing of Alternative Control Services

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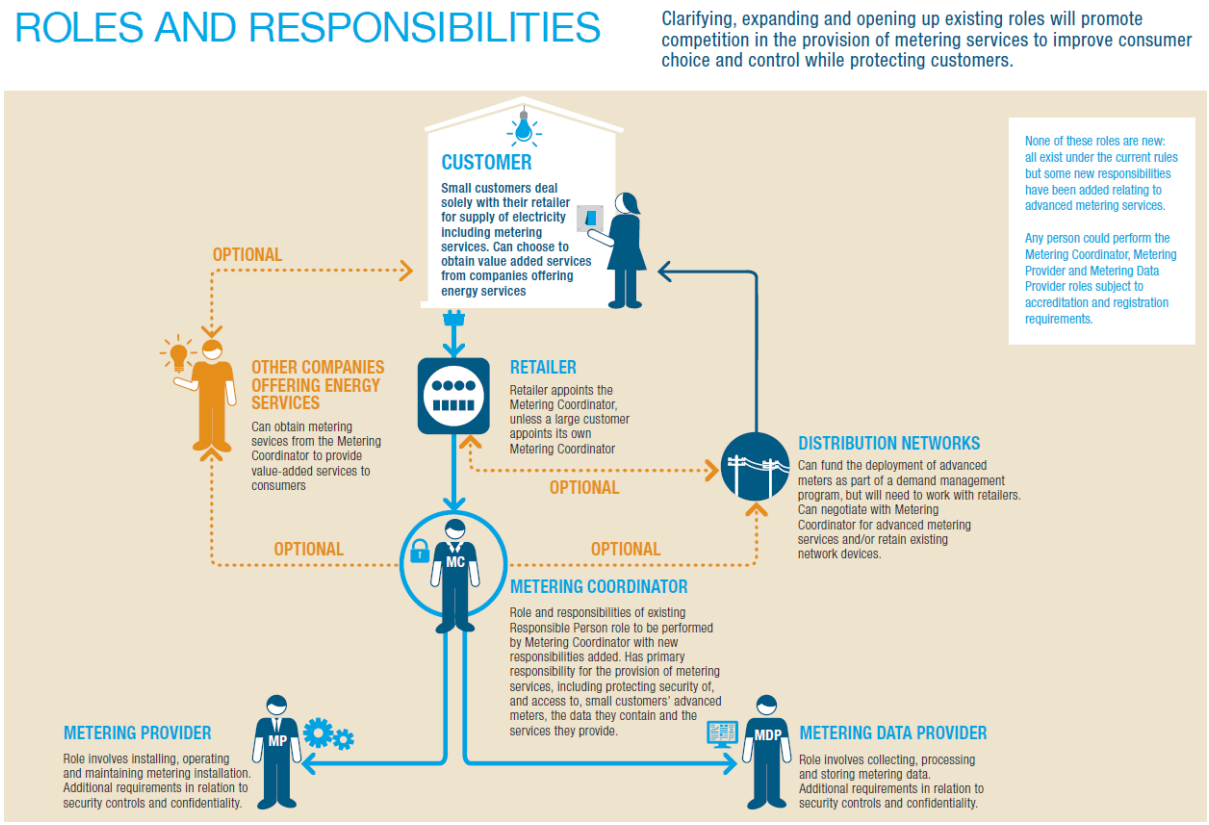
7. Pricing of Alternative Control Services

The approach to metering in the NEM is changing. The AEMC has introduced Rule changes that will come into effect 1 December 2017 that aim to facilitate a market-led approach to the deployment of advanced interval meters where consumers drive the uptake of technology through their choice of products and services. This means that as of December 2017 SA Power Networks will no longer be responsible for new and replacement metering services. Instead, these will be managed by retailers (and other potential competitors) in a competitive market. The new metering roles and responsibilities are shown in Figure 19.

Figure 19: NEM Metering roles and responsibilities effective 1 December 2017



Source: AEMC, Competition in Metering Services Information sheet

Under these metering Rule changes, there will not be a centrally-driven roll out of advanced interval meters. Instead, they will start appearing in the market in a number of ways, noting that from December 2017, only advanced interval meters can be installed:

- As new customers are connected or major alterations are made to an existing electrical supply[33];
- The replacement of ageing and failed meters;
- Customers choosing to have their electricity retailer arrange for the installation of an advanced interval meter; and
- Retailer-initiated advanced meter installation.

[33] That is, what are referred to in this revised TSS as 'Additions and alterations' which include new homes, major renovations, three phase upgrades, solar PV etc but not the simple replacement of a meter or relocating (but not upgrading) a switchboard

7.1 Rule requirements relating to metering

Given the new metering contestability Rules do not come into effect until December 2017, SA Power Networks' revised TSS must contain the information on our tariff classes, tariffs and charging parameters set out in the current Rules at the time of publishing this revised TSS. SA Power Networks' metering prices for 2015-20 will still continue to apply to customers that have used SA Power Networks' meters. These Rules are as follows.

6.18.1A Tariff structure statement

(a) A *tariff structure statement* of a *Distribution Network Service Provider* must include the following elements:

(1) the *tariff classes* into which *retail customers* for *direct control services* will be divided during the relevant *regulatory control period*;

(2) the policies and procedures the *Distribution Network Service Provider* will apply for assigning *retail customers* to tariffs or reassigning *retail customers* from one tariff to another (including any applicable restrictions);

(3) the structures for each proposed tariff;

(4) the *charging parameters* for each proposed tariff; and

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

(b) A *tariff structure statement* must comply with the *pricing principles* for *direct control services*[34].

(e) A *tariff structure statement* must be accompanied by an *indicative pricing schedule* which sets out, for each tariff for each *regulatory year* of the *regulatory control period*, the indicative price levels determined in accordance with the *tariff structure statement*.

SA Power Networks is also required to comply with the following requirements of clause 6.18.3 of the Rules with respect to tariff classes.

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

[34] Alternative Control Services metering is classified as a Direct Control Service.

(2) the need to avoid unnecessary transaction costs.

7.2 Our tariff class and tariffs for metering services

This Section of our revised TSS provides visibility of our metering charges for the 2015-20 regulatory control period. This pricing will continue to apply post December 2017 when retailers take over the responsibility for new and replacement meters for their customers.

In its Final Decision (revenue determination), the AER has determined that a price cap applies for Alternative Control Services (regulated metering services). Attachment 16[35] sets out all of the pricing arrangements and the final prices that will apply. Part A of Attachment 16 sets out the annual metering charges (AER Table 16.11) and the upfront capital charges (AER Table 16.14, with annual X-factors set out in AER Table 16.15).

The annual metering charges contain a Capital charge and a non-Capital charge, with different prices applying to the three categories of alternative control services metering, ie Whole Current (**WC**), Current Transformer (**CT**) Type 5 and 6 meters and Exceptional meters.

There are four different combinations of metering fees possible:

- Existing customers at June 2015 using SA Power Networks' meters. These customers continue to pay the Capital and non-Capital charges;
- Where an existing customer that was using an SA Power Networks' meter at June 2015 has the meter replaced by an alternate meter provider (eg a Type 4 meter), the customer will continue to pay SA Power Networks' Capital charge, but will cease paying the non-Capital charge;
- (From 1 July 2015), where a new customer connects to the network and elects to use an SA Power Networks meter, the customer incurs an upfront Capital charge, and also incurs the annual non-Capital charge. The customer is not liable for any ongoing Capital charges; and
- Where an existing customer at June 2015 was not using an SA Power Networks meter and is using a meter from an alternate meter provider, (eg a Type 4 meter), the customer is not liable for any annual metering charges to SA Power Networks.

We have implemented the AER's preferred system of meter service pricing. We have implemented a new meter charging system which can be separated from the standard control services tariffs. We will use separate, more manual systems to manage the exceptional and CT metering pricing, as occurs at present. We also use a separate manual process to manage the pricing where an existing customer's meter churns to another meter provider.

Table 24 sets out the tariff classes and tariffs that correspond to the price terms contained in the alternative control services metering services in the 2015-20 regulatory control period.

[35] Attachment 16 to the AER's Final Decision for SA Power Networks determination 2015-16 to 2019-20.

Table 24: Alternative Control Services indicative annual metering charges (excludes GST) $ p.a.

Meter type	2016/17	2017/18	2018/19	2019/20
Type 1-4 'Exceptional' remotely read interval meter				
Non-capital[4]	$187	$182	$177	$172
Capital	$217	$256	$250	$243
Non-capital + capital[6]	$404	$438	$427	$415
Type 5-6 CT[1] connected manually read meter				
Non-capital[4]	$102	$99	$96	$94
Capital	$118	$140	$136	$132
Non-capital + capital[6]	$220	$239	$232	$226
Type 5-6 WC[2] manually read meter				
Non-capital[4]	$12.40	$12.10	$11.80	$11.50
Capital	$14.50	$17.00	$16.60	$16.20
Non-capital + capital[6]	$26.90	$29.00	$28.40	$27.70

Note:

1. Current transformer metering applies for supplies over 100 amps.
2. Whole current metering applies for supplies up to 100 amps.
3. Prices assume an annual CPI movement of 2.5% per annum.
4. The non-Capital charge is paid by the customer/retailer who has paid an upfront capital fee (see below).
5. The Capital charge is paid by a customer/retailer using a regulated meter as of July 2015 but only when the meter has since churned.
6. The combined non-Capital/Capital fee is paid by a customer/retailer that continues to use a regulated meter as of July 2015.
7. Customers not using a regulated meter in the 2015-20 regulatory control period are not charged a regulated metering fee.

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Table 25 shows the upfront capital charges that apply in the 2015-20 regulatory control period. The AER set prices have been escalated by the actual CPI for 2016/17. For 2017/18 to 2019/20, an assumed CPI of 2.5% has been applied along with the AER's nominated X-factor.

Table 25: Alternative Control Services indicative upfront capital charges (excludes GST) $ p.a.

Meter type	2016/17[2]	2017/18[2]	2018/19[1]	2019/20[1]
Type 5 meters				
Single element	$197	$203	$210	$217
Two element	$283	$292	$302	$312
Three phase	$486	$501	$518	$535
Type 6 meters				
Single element	$113	$116	$120	$124
Two element	$283	$292	$302	$312
Three phase	$334	$345	$356	$368

Note:

1. Under the AEMC Rule change this pricing will not apply from 1 December 2017 as SA Power Networks will not be responsible for installing new meters.
2. These charges apply where a customer/retailer requests SA Power Networks to install a meter from July 2015 to November 2017.

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Part B, Section 8

Transitioning to cost-reflective network tariffs

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8. Transitioning to cost-reflective network tariffs

This Section contains the principles and objectives that SA Power Networks applies to the development of its network tariffs. It also outlines the strategies SA Power Networks proposes to pursue in developing tariffs during the remainder of the 2015-20 regulatory control period, and in the next 2020-25 period.

8.1 Rule requirement

The information in this Section concerning potential future network tariff developments is provided pursuant to clause 6.18.1A of the Rules.

6.18.1A Tariff structure statement

(a) A *tariff structure statement* of a *Distribution Network Service Provider* must include the following elements:

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

(b) A *tariff structure statement* must comply with the *pricing principles* for *direct control services*.

Clause 6.18.5, referenced above, sets out the pricing principles and the network pricing objective

8.2 Network tariff principles and objectives

This Section presents the high level framework that SA Power Networks applies to the development of its network tariff strategy.

The pricing principles of Clause 6.18.5 can be seen as presenting two broad aims:

- Cost reflectivity[36]; and
- Considering customer impact[37].

Our revised TSS has been prepared in response to changes to the Rules that require us to pursue cost reflectivity in our prices. We are also required to do this in a way that recognises the impacts on our customers of changing the basis for our prices.

It is the need to balance these two (ie what degree of cost reflectivity results in acceptable customer impacts) that has formed the basis of our consultation with customers in developing this revised TSS.

[36] Including the revenue boundaries of 6.18.5(e), the basis in LRMC at 6.18.5(f) and revenue sufficiency at 6.18.5(g).
[37] Including the customer impact and transition provisions of 6.18.5(h), the ability for customers to understand the tariffs at 6.18.5(i) and the compliance with other regulatory instruments at 6.18.5(j).

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Cost Reflectivity

Our proposed tariffs will, within the limitations of metering arrangements and efficient tariff structures, signal the costs associated with increased demand placed on the network by customers, including for example, that driven by the use of air conditioning.

Where metering arrangements do not allow efficient pricing structures to be used (eg where Type 6 meters are used) then we will endeavour to ensure that a fair level of cost-recovery occurs with those customers.

Consistent with clause 6.18.5, SA Power Networks' network tariffs aim to:

- Attain revenue sufficiency under the Revenue Cap;
- Signal the LRMC of supply clearly, where possible, through demand parameters;
- Improve cost reflectivity and reduce revenue variability by reducing the reliance on usage based tariff components where appropriate; and
- Pass on the cost of ElectraNet's transmission services to customers and of the South Australian Government's Solar PV Feed-in-Tariff Scheme as efficiently and in as non-distortionary a way as possible.

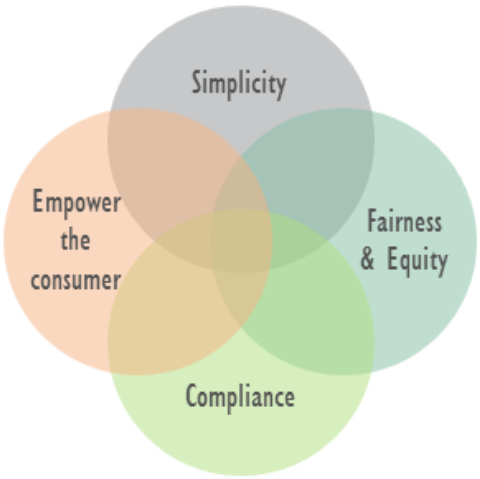
Customer Impact Principles

As explained in Part B, Section 4, an Electricity Advisory Panel was convened in December 2015[38] and asked to participate in a deliberative process facilitated by independent consultancy democracyCo.

The Panel developed three main Principles of **'Simplicity'** (to inform decision making), **'Fairness & equity'** and **'Empower the consumer'** to sit alongside a fourth, **'Compliance'**. These are represented in Figure 20. The Panel agreed that there is potential for conflicts between the three Principles but that there is a 'sweet spot' represented by the middle of the diagram where all four Principles overlap. This should be the aim when making decisions.

The guidance from these attributes has been very helpful in forming our approach to transitioning customers to our cost-reflective tariffs.

Figure 20: Customer Impact Principles



[38] The Panel consisted of a representative consumer group selected from our 'Talking Power' database, key business and community peak bodies as well as electricity retailers and Government.

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We also have to consider and balance such matters as:

- Network price signals **vs** retail price structures.
- Price signals at the time of investment **vs** signals for usage. The CSIRO refers to this as structural response prices vs behavioural response prices.
- New connections **vs** existing connections.
- Reflecting the relatively high costs of supply in summer in South Australia **vs** avoiding seasonal bill shock.

8.3 The ongoing need for tariff reform

As explained in Part B, Section 2, to a greater extent than any other Australian distributor, SA Power Networks' summer demand is sensitive to the effect of air conditioning demand. High summer peak demands occur during heat wave conditions, which correspond with periods when the elements of the system have least capacity and the power factor of loads is poor. Air conditioning on extreme days can account for an extra 1200 MW of residential demand and an extra 300 MW of business demand, and comprises nearly half of the State's co-incident demand for electricity.

Over the last five years, a new development has been the adoption of a significant number of solar PV systems, especially within the residential sector. We now have over 25% penetration of these systems and there can be in excess of 500 MW of solar PV generation occurring on sunny days near midday for over half of the year. On mild days, up to 80% of this generation is exported to the network whilst on extreme days about a third is exported to the network. The customer uses the balance of PV-generated energy in their premises.

The take up of solar PV has altered the network challenges we face today, creating problems of low load and high PV generation during days with mild but sunny weather. In summer, the peaks that used to occur between 2pm and 5pm have moved to between5pm and 8pm and the peak has slightly reduced. There are still business network demand peaks during the day but residential peak demand and co-incident peak demand are now occurring later in the day.

The next development will be battery storage and electric vehicles. Battery storage has the potential to soak up a lot of the export energy generated by PV during periods of sunshine and discharge that energy later in the day when network demand peaks. How this will change the impact of air-conditioning on the network during extreme weather is unclear, but network tariffs that give good signals for economic peak-lopping will assist in the development of a more efficient network.

If the take up of electric vehicles increases, we will need clear signals to customers that enable them to recharge their car with convenience but without creating new peaks on the network. Over the next five years, technologies such as these will create both challenges and opportunities for the future development of the network.

As a consequence, the management of summer demand has an ongoing high priority in SA Power Networks' tariff reform strategies. This leads to an emphasis on providing network price signals that

will encourage both residential and business customers to manage their contribution to peak demand. This will involve consideration of the following:

- The price levels of existing tariff structures;
- The development of more cost-reflective tariff structures; and
- The development of innovative new tariff structures.

8.4 Tariff reform 2005 to 2015

Over the last two regulatory control periods (2005-10 and 2010-15), SA Power Networks has undertaken a number of important tariff reforms, including the following:

- Large businesses have been encouraged to adopt kVA demand price structures where favourable, and these have been mandatorily applied to existing customers using more than 250 kVA, and since July 2010 for new customers (and alterations to supply) requiring more than 70 kVA. Some medium-sized businesses have also opted-in to the kVA demand prices;
- Power factor correction for businesses has been successfully facilitated through the use of an additional excluded/negotiated service charge for excess reactive power requirements;
- Simplifying the small customer tariffs used by residential and business customers by reducing the number of pricing blocks. Prices in higher usage blocks have also been reduced relative to the first block, reflecting improvements in our understanding of actual costs of supply to these customers; and
- A residential actual demand tariff (optional) was established in 2014/15. It has played an important role in indicating to customers and the electricity industry the sort of tariff structures and incentives around which new housing appliances and new technology considerations should be made.

8.5 Concluding large businesses tariff reform

For large business customers, we are concluding a period of tariff reform that has spanned the last 15 years. We have nearly 5,100 large business customers (>160 MWh pa) on cost-reflective demand tariffs. We re-assigned the last 1,000 of these customers to cost-reflective tariffs in July 2015. To enable this to happen, we:

- Reviewed the individual circumstances of the 5,100 customers and determined their most appropriate tariff;
- Reviewed the demand history of those customers who would continue to utilise agreed demand tariffs to see if the level of agreed demand should be reduced;
- Created a new actual demand tariff which is suitable for businesses with a seasonal load and/or a load which is flexible during the afternoon/evening. The demand is typically measured and billed monthly; and

- Created transition arrangements whereby customers who might otherwise face a price increase from these demand tariffs, have a five-year transition period where the tariff changes progressively to fully cost-reflective arrangements by July 2022. The transition path is explained in Section 8.6. In 2016/17 the transition tariff is 50% cost-reflective and applies to less than 100 customers. All other customers were able to migrate to the cost-reflective tariffs in July 2015 without price increases.

8.6 Transitioning residential and small business customers 2015-20

Our revised TSS approach is to introduce more cost-reflective tariffs for small customers in the 2017-20 period, but at a slower pace than proposed in our initial TSS.

For our residential and small business customers our recent analysis has found developing simple cost-reflective tariffs challenging due to the significant diversity of peak demand within these customer groups. It may be that multiple tariff options will be required if diversity remains an issue after we review the demand interval period for 2020-25. More data covering extreme weather events is required to conclude this tariff design. Therefore, in the current situation where we have limited small customer advanced interval meter data sets, there is potential for us to unintentionally force a high pricing signal on to some small customers that ultimately may prove to be unfair and uneconomic.

Table 26 and Figures 21 and 22 below show that amongst LV Business customers, the average individual customer load characteristics improve with higher annual consumption. However, the diversity in peak demand is more significant for smaller customers, which results in similar diversified customer load characteristics. The tariff reforms for the 2020-25 period need to address these issues if we are to provide good pricing signals to smaller business customers. In this 2017-20 period we have proposed to limit tariff reform to new multi-phase customers and those undertaking alterations to supply requiring a new multi-phase meter. These tariff reforms are available to other small business customers on an opt-in basis (we expect opt-in customers will have individual and diversified load characteristics that benefit from the tariff).

Table 26: Diversity in peak demand by customer size

Category MWh pa	Sample Customers	Average MWh pa	Average Summer Peak kW	Average Summer Peak kVA	Average Co-incident Peak kW	Power factor	Individual customer load factor	Diversity of peak to co-incident peak	Diversified peak kW load factor
1-10	862	5	9	10	1	0.86	7%	15%	45%
10-20	687	15	16	19	4	0.86	10%	26%	40%
20-40	1264	30	23	26	9	0.88	15%	39%	38%
40-80	2044	60	35	39	17	0.89	19%	49%	40%
80-160	2812	115	57	63	31	0.90	23%	54%	43%
160-400	2749	237	98	110	62	0.89	28%	63%	44%
400-1000	1383	618	210	232	152	0.90	34%	72%	47%
1000-4000	707	1,788	485	527	382	0.92	42%	79%	53%
4000 plus	71	5,989	1,301	1,406	1,015	0.93	53%	78%	67%

Figure 21: Diversity analysis of small and large LV business customers' individual peak vs co-incident demand

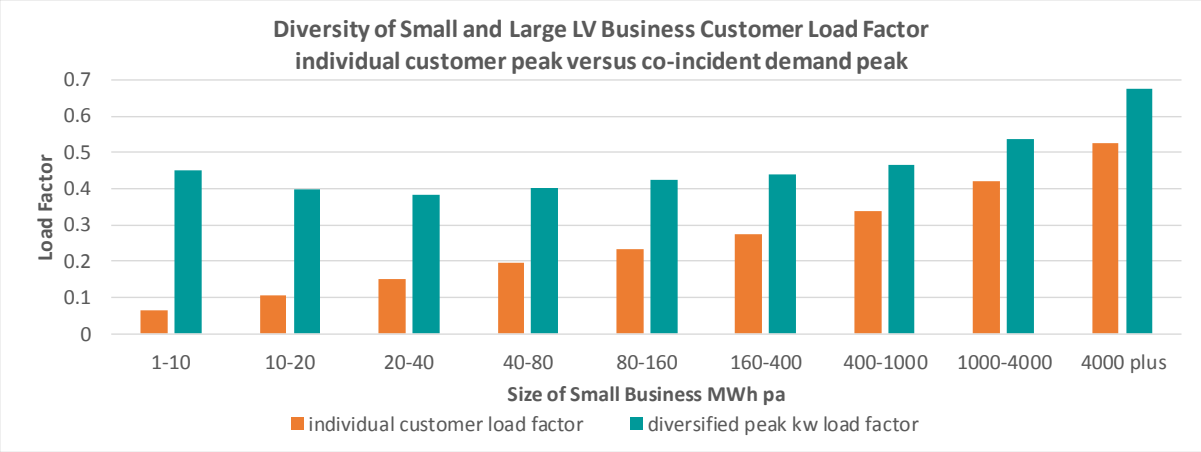
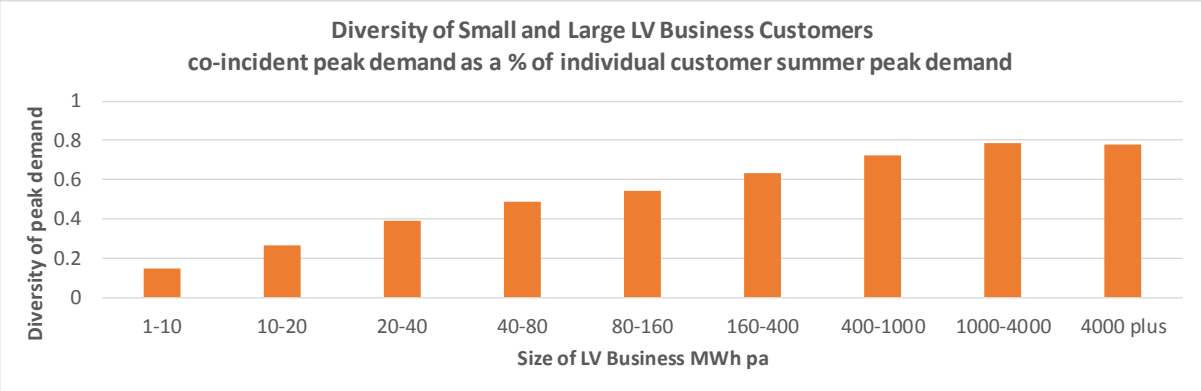
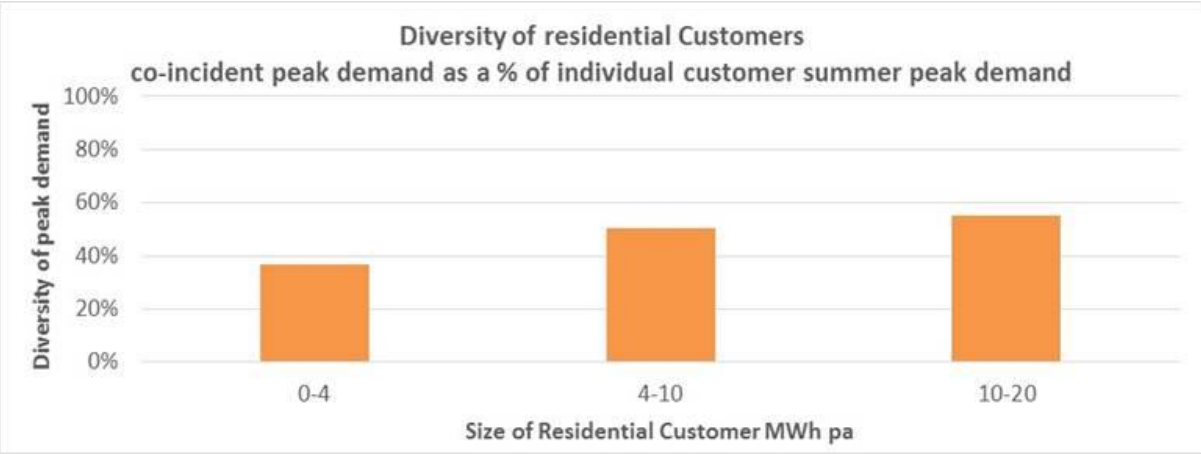


Figure 22: Diversity analysis of small and large LV business customers' co-incident peak demand



The change in diversity by customer size also occurs with residential customers as shown in Figure 23. Again, this issue will need to be addressed if we are to provide good pricing signals to all sizes of residential customers.

Figure 23: Diversity analysis of residential customers' co-incident peak demand



Partly for these reasons, in this 2015-20 regulatory control period, we see more benefit in simplifying and streamlining our tariffs, and focusing our efforts on residential prosumers and those small business customers who will benefit from fully cost-reflective tariffs. We can learn from these

residential prosumers and small business customers before cost-reflective pricing is mandated for the larger volumes of residential and smaller business customers in the 2020-25 regulatory control period.

On this basis, we have either already introduced or are proposing to introduce the following measures over the 2015-20 regulatory control period:

Simplifying our tariffs

If our customers are to respond to our tariffs, they have to be understandable. To be understandable, the tariffs must be simple and transparent.

In order to simplify tariffs for our retailers and our customers we have reduced the number of tariffs[39] in our residential tariff class from three to two and in our small business tariff class from eight to five, compared to July 2015.

We are continuing to simplify the small customer tariffs used by residential and small business customers to reduce the number of pricing blocks. For residential customers we will transition the consumption component of our tariff from two blocks to one block by 2019/20. For small business single-rate customers the consumption component of our tariffs has been reduced to a single block from July 2016.

Actual demand tariffs

In our 2014/15 APP we introduced an opt-in actual kW demand tariff for residential customers. The residential actual kW demand tariff structure underpins our plans for this tariff class' cost-reflective tariffs going forward.

In our 2015/16 APP we introduced an actual kVA demand tariff for business customers (the SBD tariff). In 2016/17, we created the SBD and BD tariff versions for the small business and large LV business tariff classes. This tariff was optional for single phase customers and mandatory for new multi-phase customers or existing customers who were upgrading their supply and required a multi-phase meter change.

We also recognised the cost impact of moving to a fully cost-reflective tariff for some small businesses has been too high. Therefore, in our 2016/17 APP we introduced a transitional version of the actual kVA demand tariff for small business customers (the SBDT tariff). This tariff is a 50%/50% blend of the actual kVA demand tariff and the business two-rate tariff. We believe this is a fairer and more equitable approach.

The transitional demand tariff is mandatory for new multi-phase customers or existing customers who were upgrading and require a multi-phase meter change. The SBDT tariff is proposed (subject to the 2020-25 TSS consultation) to progress to a fully cost-reflective tariff as follows:

- 2017-20: The demand charge set at 50% cost-reflective, the balance reflecting two-rate pricing;

[39] Numbers quoted exclude the controlled load partner tariff.

- July 2020: The demand charge increases by a further 17% to 67% cost-reflectivity;
- July 2021: The demand charge increases by a further 17% to 84% cost-reflectivity; and
- July 2022: The demand charge increases by a further 16% to 100% cost-reflectivity.

The SBD (fully cost-reflective) tariff remains available as an opt-in tariff for all customers in the small business tariff class.

Solar sponge partner tariff

In our 2015/16 APP we introduced a solar sponge tariff for hot water. Customers with controlled load can elect to have their time clocks adjusted (as a negotiated service) which will enable overnight hot water/floor heating load and additional daytime usage between 10am and 3pm. The aim of this partner tariff is to encourage more flexible load use when solar PV is at its maximum and residential networks potentially have excess generation. We have been careful in selecting times for this initiative as we do not want to increase loads when South Australia's wholesale pool prices are high. Electric vehicles using hard wired chargers <25A can also utilise this tariff. We will look at extending this concept to increase the amount of load on residential networks during the day, throughout the 2017-20 period.

Small business customers with multiple NMIs

We propose to encourage small business customers to opt-in to the cost reflective tariff prior to being mandatorily re-assigned by threshold usage levels at some future time. We propose to encourage these businesses by offering a 'can't lose' guarantee for 12 months for customers with multiple NMIs, to learn about their electricity requirements under cost-reflective tariffs with the possibility of making savings but without the risks of making losses.

We believe that such a program could deliver a critical mass of customer response which will assist in developing information able to be provided to other customers when they either elect to opt-in or are mandatorily reassigned to a cost reflective tariff in the future. It will also support development of intermediaries that can provide advice to customers on optimal solutions for both network and energy procurement.

In our 2016/17 APP we introduced a trial with potentially 20 customers that have more than 10 sites each. These customers will pay no more for network charges than they would have on the business single/business two-rate tariffs but are likely to make savings in total over their multiple sites from using cost-reflective demand based tariffs. In the event that a customer does lose across their portfolio of sites, we will directly refund the customer the difference between the new and the old tariff outcomes. We will not require the retailer to rebill the year's accounts at the old tariff rates.

We see this strategy as being a simple and empowering method for these multiple site customers to understand the impact of demand tariffs and therefore learn to adapt their usage behaviours, with no risk.

Targeting residential prosumers and other suitable residential customers

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Through this revised TSS we are targeting our residential prosumers by providing an opt-in demand based tariff that is fully cost-reflective. We have removed the minimum quantity for demand which will benefit our prosumers more favourably. The removal of the 1kW minimum has simplified the distinction between residual cost recovery and LRMC costs. Prosumers will benefit from being able to have as low as zero demand at peak times. They will also benefit from a lower usage rate at all times. We will discuss the opportunities for the use of this tariff with retailers for suitable customers with advanced interval meters. We can only progress this initiative in conjunction with supportive retailers.

8.7 Transitioning residential and small business customers 2020-25

For the 2020-25 regulatory control period we believe the electricity industry will be in a better position to implement a more aggressive approach to tariff reform.

Assuming retailers continue to install smart meters at a rate similar to that revealed in 2016, by 2020 South Australia is likely to have in the order of 200,000 advanced interval meters or nearly 25% of all customers. The data from these meters along with the learnings from small customers who opt-in to demand based tariffs will provide insights that will enable the market to develop education materials and service offerings / new technologies for residential and small business customers on demand based tariffs.

With this in mind, we propose to consider the following measures in the 2020-25 regulatory control period:

Review charging windows and interval periods

We recognise that in the 2015-20 regulatory control period, the increase in solar PV installations, together with the potential uptake of battery storage and electric vehicles, may impact on the business peak, residential peak and co-incident demand on our network. We are also cognisant of small business customer concerns that were raised in submissions to the AER's Issues Paper.

Accordingly, we propose to review our charging windows and charging periods for the 2020-25 regulatory control period to ensure they reflect times of overall network stress for our residential and business customers and the co-incident high voltage networks, incorporating times either side of the peak which aid in avoiding issues surrounding customers shifting load and creating new peaks.

We currently calculate a customer's maximum demand to be the highest use recorded within a half-hour interval, that falls within our proposed peak charging window during the month. For the 2020-25 regulatory control period we will review the basis for calculating the demand charge for our customers. This review could include:

- **Using a different time interval than the current half-hour measurement period.** This could be particularly appropriate for the actual monthly demand tariffs for those smaller customers with greater diversity (for both business and residential customers). The time interval could be a one, two or four-hour period. The time interval will be determined by the quality of the pricing signal and the stability of charges across a given year, and between years with different weather conditions. Implementation costs for retailers and distributors will be a critical consultation issue; and

- **Using more than one interval per year to measure the demand.** The actual demand tariffs are based on 12 measurements per year, ie the demand is reset each month based on the demand measured in the previous month. We believe this approach is reasonable and may not necessarily warrant review, however we will undertake consultation with our customers and stakeholders.

  The agreed demand tariffs are generally based on a single interval measured in the previous year (or in recent years). Using multiple demand measurements over a year may result in an improved pricing signal. For example, we may consider the use of an average of the five highest daily intervals measured over a year, as the basis for resetting a customer's annual agreed[40] demand. Or we may use the highest measured demand on days of extreme demand, eg on days where the temperature exceeded 38 degrees.

  It may also be feasible to vary the demand window to better meet the needs of some larger customers in specific locations, (eg amending the CBD demand window to finish at 6pm, when the demand diminishes significantly).

  The agreed demand reset would be a manual calculation undertaken at the end of summer and advised to retailers in May for application from July. Consultation with agreed demand customers and retailers is required before we can amend the agreed demand calculation.

Table 27 provides a summary of the envisaged charging window and interval period options for the 2020-25 regulatory control period.

Table 27: Charging window and interval period options for the 2020-25 regulatory control period

Parameter	Options
Measurement period	• Retain one measurement per month for monthly actual demand tariffs • Consider a longer interval for small customer actual demand, perhaps 1, 2 or 4 hour interval rather than 30 minutes to improve the LRMC signal to high-diversity customers • Average of the 5 highest daily peaks for agreed demand, measuring on days of extreme demand eg temperature exceeding 38 degrees, reset each year in May for application from July
Charging window	• Review residential and business charging windows • Consider using different windows for different regions with large business agreed demand, eg CBD 09:00 – 18:00 hours, general 12:00 – 21:00

[40] Note, some customer agreed demands are determined by other means.

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Mandatory tariff assignment

Our Electricity Advisory Panel suggested that having at least 12 months of data from an advanced interval meter will assist customers in understanding their energy usage patterns to enable them to make informed decisions about what is best for them before going on to a cost-reflective tariff:

> *"Part of what we want to do is get people to look at how much power they use during peak periods and make decisions based on that about their behaviours (short term) or their equipment (long term investment). In the context of simplicity, we need to make it simple for people to understand when they are getting charged the peak prices. Customers need to be able to predict within a range what the bill is going to be – avoiding 'bill shock' in the short term." Panel Member*[41]

We will consider mandatory assignments in the next TSS (2020-25 period) and will engage with retailers to review how best to assist customers with the information required to understand how to respond. This could include options such as assigning residential and small business customers (with advanced interval meters to a transitional cost-reflective tariff or fully cost-reflective tariff after at least one or possibly two years of advanced interval meter data had been available from the commencement of a tariff year eg July 2020, July 2021 etc.

We believe this approach is fair and equitable because it provides a sufficient transition timeframe for customers.

[41] SA Power Networks Electricity Advisory Panel, February 2016

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Part B, Section 9

Customer impacts

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9. Customer Impacts

This Section set out how we have taken into account potential customer impacts arising from changes to tariffs proposed in our revised TSS.

9.1 Rule requirement

Rule 6.18.5(h) requires SA Power Networks to consider the impact on customers as a result of changes to our tariffs.

6.18.1A Tariff structure statement

(b) A *tariff structure statement* must comply with the *pricing principles* for *direct control services.*

6.18.5 Pricing principles

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

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

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

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

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

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

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

9.2 Consideration of customer impacts

In our initial TSS we proposed mandating transitional demand based tariffs for residential and single phase small business customers who satisfied certain triggers or exceeded specific thresholds.

As explained in Part B, Section 3, we considered the information that has become available since we submitted our initial TSS. SA Power Networks is now concerned a fast pace of reform without appropriate customer education and the correct pricing signals, will introduce unnecessary risk in the 2017-20 period, partly because without adequate information customers may not know how to

respond to sharper pricing signals and partly because the retail sector may not yet be in a position to efficiently and effectively support the tariff reform process. We are concerned this may have negative repercussions for subsequent tariff reform in the 2020-25 regulatory control period.

As a result, in this revised TSS we are no longer proposing in this 2017-20 period, mandatory assignment/re-assignment to a cost-reflective transitional demand tariff for residential and single phase small business customers, nor for any existing customers with annual energy above a defined threshold.

While we are not proposing any new changes in this revised TSS to those included in our 2016/17 APP, we are now looking to proactively progress the take up of opt-in cost-reflective tariffs for our existing small business customers and our 'prosumer' residential customers. We propose to do this by identifying and re-assigning small business customers who will benefit from a cost-reflective demand based tariff and who have a retailer that will pass through our pricing structure. This will be undertaken on an opt-in basis.

We will also review the potential for some residential customers with advanced interval meters to transfer to the demand based tariff if they will benefit, providing they have retailers who will pass through the pricing signals.

Adopting this proactive approach (outlined above) will result in positive customer impacts for those residential and small business customers who will benefit from the opt-in demand based tariffs.

Part B, Appendix A

Indicative pricing schedule

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Appendix A – Indicative pricing schedule

Within the framework of SA Power Networks' longer term tariff strategy, this Section sets out an indicative pricing schedule for tariff charging components of standard control services for 2017-20.

It should be noted that the information in this Section relate to SA Power Networks' standard control services and pass-throughs. These Network Use of System (NUoS) charges to customers are bundled charges that contain:

- SA Power Networks' standard control services (DUoS);
- Transmission cost recovery components (TUoS); and
- PV JSA cost recovery components (PV JSA).

The charges bundled to customers can also include alternative control service charges for metering. These charges are explicitly set out in our tariff list, but are part of the total network charges to customers. Metering is discussed separately in Section 7.

A.1 Indicative pricing summary tables

Table 28: SA Power Networks' indicative residential tariff rates for NUoS charges

Residential					
Tariff	**Component**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Residential Usage					
Supply Rate	$/day	$ 0.301	$ 0.388	$ 0.398	$ 0.407
Usage Block 1	$/kWh	$ 0.118	$ 0.124	$ 0.128	$ 0.135
Usage Block 2	$/kWh	$ 0.147	$ 0.149	$ 0.138	$ 0.135
Controlled Load	$/kWh	$ 0.054	$ 0.066	$ 0.066	$ 0.067
Residential Monthly Actual kW Demand					
Supply Rate	$/day	$ -	$ 0.388	$ 0.398	$ 0.407
Usage	$/kWh	$ 0.065	$ 0.061	$ 0.061	$ 0.062
Controlled Load	$/kWh	$ 0.054	$ 0.066	$ 0.066	$ 0.067
Peak Actual kW	$/kW/day	$ 0.428	$ 0.390	$ 0.389	$ 0.402
Shoulder Actual kW	$/kW/day	$ 0.211	$ 0.193	$ 0.192	$ 0.198
Off-Peak Actual kW	$/kW/day	$-	$-	$-	$-

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Table 29: SA Power Networks' indicative small business tariff rates for NUoS charges

Small Business					
Tariff	**Component**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Small Business 2-rate Usage					
Supply Rate	$/day	$ 0.301	$ 0.388	$ 0.398	$ 0.407
Peak Usage	$/kWh	$ 0.158	$ 0.153	$ 0.152	$ 0.157
Off-Peak Usage	$/kWh	$ 0.071	$ 0.080	$ 0.080	$ 0.082
Controlled Load	$/kWh	$ 0.054	$ 0.066	$ 0.066	$ 0.067
Small Business Monthly Actual kVA Demand					
Supply Rate	$/day	$ -	$ 0.388	$ 0.398	$ 0.407
Usage	$/kWh	$ 0.051	$ 0.054	$ 0.054	$ 0.055
Peak Actual kVA	$/kVA/day	$ 0.491	$ 0.348	$ 0.347	$ 0.358
Shoulder Actual kVA	$/kVA/day	$ 0.244	$ 0.173	$ 0.172	$ 0.178
Off-Peak Actual kVA	$/kVA/day	$-	$-	$-	$-
Small Business Monthly Actual kVA Demand Transition					
Supply Rate	$/day	$ 0.151	$ 0.388	$ 0.398	$ 0.407
Peak Usage	$/kWh	$ 0.105	$ 0.100	$ 0.096	$ 0.094
Off-Peak Usage	$/kWh	$ 0.061	$ 0.066	$ 0.065	$ 0.066
Peak Actual kVA	$/kVA/day	$ 0.246	$ 0.189	$ 0.200	$ 0.221
Shoulder Actual kVA	$/kVA/day	$ 0.122	$ 0.094	$ 0.099	$ 0.110
Off-Peak Actual kVA	$/kVA/day	$ -	$ -	$ -	$ -
Unmetered 24 hour and 12 hour (streetlights)					
Usage	$/kWh	$ 0.069	$ 0.061	$ 0.061	$ 0.063
Small Business Single-Rate (obsolete July 2010)					
Supply Rate	$/day	$ 0.301	$ 0.388	$ 0.398	$ 0.407
Usage	$/kWh	$ 0.134	$ 0.137	$ 0.136	$ 0.140
Controlled Load	$/kWh	$ 0.054	$ 0.066	$ 0.066	$ 0.067

Small Business Annual Agreed kVA Demand (obsolete July 2016)					
Supply Rate	$/day	$ 11.134	$ 10.000	$ 10.276	$ 10.569
Usage	$/kWh	$ 0.031	$ 0.042	$ 0.042	$ 0.043
Agreed kVA Block 1	$/kVA/day	$ 0.319	$ 0.277	$ 0.276	$ 0.286
Agreed kVA Block 2	$/kVA/day	$ 0.263	$ 0.226	$ 0.223	$ 0.231
Additional kVA	$/kVA/day	$ 0.128	$ 0.107	$ 0.110	$ 0.113

Table 30: SA Power Networks' indicative large LV business tariff rates for NUoS charges

Large Business					
Tariff	**Component**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Large Business Annual Agreed kVA Demand					
Supply Rate	$/day	$ 11.134	$ 10.000	$ 10.276	$ 10.569
Usage	$/kWh	$ 0.031	$ 0.040	$ 0.040	$ 0.041
Agreed kVA Block 1	$/kVA/day	$ 0.319	$ 0.277	$ 0.276	$ 0.286
Agreed kVA Block 2	$/kVA/day	$ 0.263	$ 0.226	$ 0.223	$ 0.231
Additional kVA	$/kVA/day	$ 0.128	$ 0.107	$ 0.110	$ 0.113
Large Business Monthly Actual kVA Demand					
Supply Rate	$/day	$-	$0.349	$0.358	$0.368
Usage	$/kWh	$0.051	$0.052	$0.051	$0.053
Peak Actual kVA	$/kVA/day	$0.491	$0.348	$0.347	$0.358
Shoulder Actual kVA	$/kVA/day	$0.244	$0.173	$0.172	$0.178
Off-Peak Actual kVA	$/kVA/day	$-	$-	$-	$-
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)					
Supply Rate	$/day	$0.151	$0.349	$0.358	$0.368
Peak Usage	$/kWh	$0.105	$0.085	$0.069	$0.053
Off-Peak Usage	$/kWh	$0.061	$0.060	$0.056	$0.053
Peak Actual kVA	$/kVA/day	$0.246	$0.232	$0.289	$0.358
Shoulder Actual kVA	$/kVA/day	$0.122	$0.115	$0.143	$0.178

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Large Business					
Off-Peak Actual kVA	$/kVA/day	$-	$-	$-	$-
Large Business Single-Rate Transition (type 6 meter)					
Supply Rate	$/day	$0.301	$0.349	$0.358	$0.368
Usage	$/kWh	$0.161	$0.160	$0.159	$0.165
Controlled Load	$/kWh	$0.054	$0.066	$0.066	$0.067
Large Business Two-Rate Transition (type 6 meter)					
Supply Rate	$/day	$0.301	$0.349	$0.358	$0.368
Peak Usage	$/kWh	$0.190	$0.180	$0.179	$0.185
Off-Peak Usage	$/kWh	$0.085	$0.092	$0.092	$0.095
Controlled Load	$/kWh	$0.054	$0.066	$0.066	$0.067

Table 31: SA Power Networks' indicative HV business tariff rates for NUoS charges

High Voltage Business					
Tariff	**Component**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
HV Business Annual Agreed kVA Demand					
Supply Rate	$/day	$80.411	$68.493	$70.387	$72.388
Usage	$/kWh	$0.024	$0.028	$0.027	$0.028
Agreed Peak kVA	$/kVA/day	$0.232	$0.222	$0.220	$0.227
Additional kVA	$/kVA/day	$0.119	$0.128	$0.132	$0.135
HV Business Monthly Actual kVA Demand					
Supply Rate	$/day	$-	$0.349	$0.358	$0.368
Usage	$/kWh	$0.051	$0.050	$0.050	$0.051
Peak Actual kVA	$/kVA/day	$0.491	$0.348	$0.347	$0.358
Shoulder Actual kVA	$/kVA/day	$0.244	$0.173	$0.172	$0.178
Off-Peak Actual kVA	$/kVA/day	$-	$-	$-	$-

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HV Business Annual Agreed kVA Demand < 400 kVA					
Supply Rate	$/day	$11.134	$10.000	$10.276	$10.569
Usage	$/kWh	$0.031	$0.038	$0.038	$0.039
Agreed Peak kVA	$/kVA/day	$0.319	$0.277	$0.276	$0.286
Additional kVA	$/kVA/day	$0.128	$0.107	$0.110	$0.113

Table 32: SA Power Networks' indicative major business tariff rates for NUoS charges

Major Business					
Tariff	**Component**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Zone Substation Annual Agreed kVA Demand (non-locational)					
Supply Rate	$/day	$-	$-	$-	$-
Usage	$/kWh	$0.015	$0.016	$0.015	$0.016
Agreed Peak kVA	$/kVA/day	$0.191	$0.171	$0.167	$0.173
Additional kVA	$/kVA/day	$0.098	$0.099	$0.102	$0.104
Sub Transmission Annual Agreed kVA Demand (non-locational)					
Supply Rate	$/day	$-	$-	$-	$-
Usage	$/kWh	$0.010	$0.013	$0.012	$0.012
Agreed Peak kVA	$/kVA/day	$0.113	$0.094	$0.088	$0.092
Additional kVA	$/kVA/day	$0.021	$0.022	$0.023	$0.024

A.2 Indicative Price Schedules 2017-20

Indicative price schedules have been prepared for the next three years for direct control services (DUoS, TUoS and PV FiT recovery), and alternative control services (metering). Prices will vary from these schedules for a variety of reasons (as explained below), and therefore these prices must be treated as indicative.

Actual prices will be published in our APP's and submitted to the AER for approval on 31 March each year, 3 months prior to the start of the relevant tariff-year. These prices will be publically available from the AER's website mid-April.

Distribution (DUoS)

Indicative DUoS prices have been prepared using:

- CPI as at December 2015 (used for 2016/17 prices), escalated by a forecast 2.5% pa;
- Smoothed AER Final Decision Revenue, adjusted for the latest cost of debt (issued by the AER annually; and
- Forecast sales volumes from the AER Final Decision (October 2015).

Prices will vary each year with updates to each of these items. Further variations will occur for:

- Service incentive scheme amounts (STPIS), which can be +/-5% in any one year although outcomes of up to +/-3% are more likely. Zero STPIS has been assumed in the indicative prices; and
- Over/under-recovery carried over from the previous two years. This varies with forecast error and seasonal sales variations. Over/under recovery can reach +/- 4%, although +/- 2% is more likely. Zero over/under-recovery has been assumed in the indicative prices.

The CPI and cost-of-debt adjusted revenues (DUoS) for the next three years are forecast at $769.2M, $796.3M and $825.2M. Actual revenues will be detailed in the APPs.

Transmission (TUoS)

Indicative prices have been prepared using a mix of forecasts. This is challenging for us as a distributor, as there is no obligation on the transmission business to provide pricing forecasts nor to publish annual pricing calculations. There are also elements of transmission pricing in South Australia which are volatile but unrelated to the performance of the transmission business. For example the discount to non-locational prices for inter-regional settlement surpluses can vary by 20% of ElectraNet revenue. The inter-regional settlement surpluses arise from differences in energy market prices between South Australia and Victoria. Indicatives TUoS prices have been prepared as follows:

- 2016/17 prices as a starting point;
- Adjustments for 2017/18 at forecast CPI and X-factor from ElectraNet's (and MurrayLink's) 2013-18 Reset;
- 2018/19 and 2019/20 revenue forecasts from Electranet's recently issued Preliminary Revenue Proposal for 2018-2023; and

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- No allowance has been made for any variation in ElectraNet's likely future prices resulting from:
    - Over/under-recovery;
    - Transmission service performance scheme payments/penalties;
    - Discounts to non-locational prices because of proceeds from inter-regional settlement surpluses (in 2016/17, this discount was forecast at $72M which is about 20% of transmission revenue). We have forecast that discounts will reduce from $72M to $47M in 2018/19 when Electranet's Reset occurs, but there is no firm basis for this forecast. It seems unlikely the discount will remain at such a high level;
    - Changes in the proportion of ElectraNet's charges to SA Power Networks (which are currently around 90%); and
    - Changes in the payments to Victoria for deemed usage of the Victorian transmission system.

The CPI/Reset/discount adjusted TUoS charges to SA Power Networks for the next three years are forecast at $263.1M, $239.8M and $254.1M. It is conceivable that these forecasts are incorrect by +/-10% or more in any of these three years. Actual transmission charges will be detailed in our APPs.

PV-FiT Recovery

Indicative prices have been prepared using the current legislated arrangements for the PV-FiT scheme. Payments for the '2028 44 cent scheme' can be reliably forecast at $88M pa (in nominal terms).

Prices may vary slightly because of the previous year over/under recovery, or because of variations in usage from that forecast. Overall, price variations could reach +/-5% in any year, but variations in the +/-2% range are more likely.

Alternative Control Services (Metering)

The AER has set a price cap for our metering service charges in its October 2015 Final Decision (revenue determination). This sets out the annual prices that will apply each year. Metering prices will vary by the difference between the forecast CPI of 2.5% pa and the actual CPI.

Note there is an 'upfront Capital charge' which applies to customers requiring a new Type 5 and Type 6 meter. This 'upfront Capital charge' will be affected by the December 2017 metering responsibility change. The AER Final Decision (revenue determination) has 'upfront Capital charges' prices listed for 2017/18, 2018/19 and 2019/20 that will not be applicable post 1 December 2017. Pricing for these services will be determined by retailers.

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Table 33: SA Power Networks' indicative DUoS tariff rates for 2017/18

DUoS 2017/18	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.349	$ 0.079	$ 0.104			$ 0.039									
Residential Monthly Actual kW Demand	$ 0.349	$ 0.035				$ 0.039							$ 0.294	$ 0.145	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.040													
Small Business Single-Rate (obsolete July 2010)	$ 0.349	$ 0.095				$ 0.039									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.349			$ 0.107	$ 0.053	$ 0.039									
Small Business Monthly Actual kVA Demand	$ 0.349	$ 0.033								$ 0.259	$ 0.129	$ -			
Small Business Monthly Actual kVA Demand Transition	$ 0.349			$ 0.070	$ 0.043					$ 0.130	$ 0.064	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 10.000	$ 0.025					$ 0.206	$ 0.154	$ 0.107						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)	$ 0.349	$ 0.114				$ 0.039									
Large Business Two-Rate Transition (type 6 meter)	$ 0.349			$ 0.128	$ 0.064	$ 0.039									
Large Business Monthly Actual kVA Demand	$ 0.349	$ 0.033								$ 0.259	$ 0.129	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)	$ 0.349			$ 0.058	$ 0.040					$ 0.173	$ 0.086	$ -			
Large Business Annual Agreed kVA Demand	$ 10.000	$ 0.025					$ 0.206	$ 0.154	$ 0.107						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand	$ 0.349	$ 0.033								$ 0.259	$ 0.129	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA	$ 10.000	$ 0.025					$ 0.206		$ 0.107						
HV Business Annual Agreed kVA Demand	$ 68.493	$ 0.014					$ 0.150		$ 0.128						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.004					$ 0.099		$ 0.099						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.001					$ 0.022		$ 0.022						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021		$ 0.004					$ 0.099		$ 0.099						
VZSN022		$ 0.004					$ 0.099		$ 0.099						
VZSN024		$ 0.004					$ 0.099		$ 0.099						
VZSN026 (closed)															
VZSN035		$ 0.004					$ 0.099		$ 0.099						
VZSN131		$ 0.004					$ 0.099		$ 0.099						
VZSN228		$ 0.004					$ 0.099		$ 0.099						
VZSN438		$ 0.004					$ 0.099		$ 0.099						
VZSN608		$ 0.004					$ 0.099		$ 0.099						
VZSNB230 (back-up)		$ 0.004					$ 0.099		$ 0.099						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018		$ 0.001					$ 0.022		$ 0.022						
VSTN084		$ 0.001					$ 0.022		$ 0.022						
VSTN161		$ 0.001					$ 0.022		$ 0.022						
VSTN162		$ 0.001					$ 0.022		$ 0.022						
VSTN378		$ 0.001					$ 0.022		$ 0.022						
VSTN557		$ 0.001					$ 0.022		$ 0.022						
VSTN609		$ 0.001					$ 0.022		$ 0.022						
VSTN788		$ 0.001					$ 0.022		$ 0.022						
VSTN840		$ 0.001					$ 0.022		$ 0.022						
VSTNB164 (back-up)		$ 0.001					$ 0.022		$ 0.022						
VSTNB796 (back-up)		$ 0.001					$ 0.022		$ 0.022						

Table 34: SA Power Networks' indicative DUoS tariff rates for 2018/19

DUoS 2018/19	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.358	$ 0.086	$ 0.096			$ 0.040									
Residential Monthly Actual kW Demand	$ 0.358	$ 0.035				$ 0.040							$ 0.302	$ 0.149	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.041													
Small Business Single-Rate (obsolete July 2010)	$ 0.358	$ 0.098				$ 0.040									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.358			$ 0.110	$ 0.055	$ 0.040									
Small Business Monthly Actual kVA Demand	$ 0.358	$ 0.034								$ 0.266	$ 0.132	$ -			
Small Business Monthly Actual kVA Demand Transition	$ 0.358			$ 0.072	$ 0.044					$ 0.133	$ 0.066	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 10.276	$ 0.025					$ 0.211	$ 0.158	$ 0.110						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)	$ 0.358	$ 0.117				$ 0.040									
Large Business Two-Rate Transition (type 6 meter)	$ 0.358			$ 0.132	$ 0.066	$ 0.040									
Large Business Monthly Actual kVA Demand	$ 0.358	$ 0.034								$ 0.266	$ 0.132	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)	$ 0.358			$ 0.047	$ 0.037					$ 0.222	$ 0.110	$ -			
Large Business Annual Agreed kVA Demand	$ 10.276	$ 0.025					$ 0.211	$ 0.158	$ 0.110						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand	$ 0.358	$ 0.034								$ 0.266	$ 0.132	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA	$ 10.276	$ 0.025					$ 0.211		$ 0.110						
HV Business Annual Agreed kVA Demand	$ 70.387	$ 0.015					$ 0.155		$ 0.132						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.005					$ 0.102		$ 0.102						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.001					$ 0.023		$ 0.023						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021		$ 0.005					$ 0.102		$ 0.102						
VZSN022		$ 0.005					$ 0.102		$ 0.102						
VZSN024		$ 0.005					$ 0.102		$ 0.102						
VZSN026 (closed)															
VZSN035		$ 0.005					$ 0.102		$ 0.102						
VZSN131		$ 0.005					$ 0.102		$ 0.102						
VZSN228		$ 0.005					$ 0.102		$ 0.102						
VZSN438		$ 0.005					$ 0.102		$ 0.102						
VZSN608		$ 0.005					$ 0.102		$ 0.102						
VZSNB230 (back-up)		$ 0.005					$ 0.102		$ 0.102						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018		$ 0.001					$ 0.023		$ 0.023						
VSTN084		$ 0.001					$ 0.023		$ 0.023						
VSTN161		$ 0.001					$ 0.023		$ 0.023						
VSTN162		$ 0.001					$ 0.023		$ 0.023						
VSTN378		$ 0.001					$ 0.023		$ 0.023						
VSTN557		$ 0.001					$ 0.023		$ 0.023						
VSTN609		$ 0.001					$ 0.023		$ 0.023						
VSTN788		$ 0.001					$ 0.023		$ 0.023						
VSTN840		$ 0.001					$ 0.023		$ 0.023						
VSTNB164 (back-up)		$ 0.001					$ 0.023		$ 0.023						
VSTNB796 (back-up)		$ 0.001					$ 0.023		$ 0.023						

Table 35: SA Power Networks' indicative DUoS tariff rates for 2019/20

DUoS 2019/20	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.368	$ 0.092	$ 0.092			$ 0.042									
Residential Monthly Actual kW Demand	$ 0.368	$ 0.036				$ 0.042							$ 0.310	$ 0.153	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.042													
Small Business Single-Rate (obsolete July 2010)	$ 0.368	$ 0.100				$ 0.042									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.368			$ 0.113	$ 0.057	$ 0.042									
Small Business Monthly Actual kVA Demand	$ 0.368	$ 0.035								$ 0.274	$ 0.136	$ -			
Small Business Monthly Actual kVA Demand Transition	$ 0.368			$ 0.074	$ 0.046					$ 0.137	$ 0.068	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 10.569	$ 0.026					$ 0.217	$ 0.163	$ 0.113						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)	$ 0.368	$ 0.120				$ 0.042									
Large Business Two-Rate Transition (type 6 meter)	$ 0.368			$ 0.136	$ 0.068	$ 0.042									
Large Business Monthly Actual kVA Demand	$ 0.368	$ 0.035								$ 0.274	$ 0.136	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)	$ 0.368			$ 0.035	$ 0.035					$ 0.274	$ 0.136	$ -			
Large Business Annual Agreed kVA Demand	$ 10.569	$ 0.026					$ 0.217	$ 0.163	$ 0.113						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand	$ 0.368	$ 0.035								$ 0.274	$ 0.136	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA	$ 10.569	$ 0.026					$ 0.217		$ 0.113						
HV Business Annual Agreed kVA Demand	$ 72.388	$ 0.015					$ 0.159		$ 0.135						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.005					$ 0.104		$ 0.104						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.001					$ 0.024		$ 0.024						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021		$ 0.005					$ 0.104		$ 0.104						
VZSN022		$ 0.005					$ 0.104		$ 0.104						
VZSN024		$ 0.005					$ 0.104		$ 0.104						
VZSN026 (closed)															
VZSN035		$ 0.005					$ 0.104		$ 0.104						
VZSN131		$ 0.005					$ 0.104		$ 0.104						
VZSN228		$ 0.005					$ 0.104		$ 0.104						
VZSN438		$ 0.005					$ 0.104		$ 0.104						
VZSN608		$ 0.005					$ 0.104		$ 0.104						
VZSNB230 (back-up)		$ 0.005					$ 0.104		$ 0.104						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018		$ 0.001					$ 0.024		$ 0.024						
VSTN084		$ 0.001					$ 0.024		$ 0.024						
VSTN161		$ 0.001					$ 0.024		$ 0.024						
VSTN162		$ 0.001					$ 0.024		$ 0.024						
VSTN378		$ 0.001					$ 0.024		$ 0.024						
VSTN557		$ 0.001					$ 0.024		$ 0.024						
VSTN609		$ 0.001					$ 0.024		$ 0.024						
VSTN788		$ 0.001					$ 0.024		$ 0.024						
VSTN840		$ 0.001					$ 0.024		$ 0.024						
VSTNB164 (back-up)		$ 0.001					$ 0.024		$ 0.024						
VSTNB796 (back-up)		$ 0.001					$ 0.024		$ 0.024						

Table 36: SA Power Networks' indicative TUoS tariff rates for 2017/18

TUoS 2017/18	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential		$ 0.033	$ 0.033			$ 0.015									
Residential Monthly Actual kW Demand		$ 0.015				$ 0.015							$ 0.096	$ 0.047	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.014													
Small Business Single-Rate (obsolete July 2010)		$ 0.035				$ 0.015									
Small Business Two-Rate (multi-phase obsolete July 2015)				$ 0.038	$ 0.020	$ 0.015									
Small Business Monthly Actual kVA Demand		$ 0.014								$ 0.089	$ 0.044	$ -			
Small Business Monthly Actual kVA Demand Transition				$ 0.022	$ 0.016					$ 0.059	$ 0.029	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)		$ 0.011					$ 0.072	$ 0.072	$ -						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)		$ 0.041				$ 0.015									
Large Business Two-Rate Transition (type 6 meter)				$ 0.046	$ 0.024	$ 0.015									
Large Business Monthly Actual kVA Demand		$ 0.014								$ 0.089	$ 0.044	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)				$ 0.022	$ 0.016					$ 0.059	$ 0.029	$ -			
Large Business Annual Agreed kVA Demand		$ 0.011					$ 0.072	$ 0.072	$ -						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand		$ 0.014								$ 0.089	$ 0.044	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA		$ 0.011					$ 0.072		$ -						
HV Business Annual Agreed kVA Demand		$ 0.011					$ 0.072		$ -						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.011					$ 0.072		$ -						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.011					$ 0.072		$ -						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021	$ 463	$ -					$ 0.204		$ -						
VZSN022	$ 186	$ -					$ 0.149		$ -						
VZSN024	$ 204	$ -					$ 0.153		$ -						
VZSN026 (closed)															
VZSN035	$ 148	$ -					$ 0.203		$ -						
VZSN131	$ 200	$ -					$ 0.148		$ -						
VZSN228	$ 131	$ 0.016					$ 0.168		$ -						
VZSN438	$ 84	$ -					$ 0.153		$ -						
VZSN608	$ 59	$ -					$ 0.154		$ -						
VZSNB230 (back-up)	$ -	$ 0.016					$ -		$ -						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018	$ 1,555	$ -					$ 0.203		$ -						
VSTN084	$ 1,130	$ -					$ 0.195		$ -						
VSTN161	$ 222	$ 0.016					$ 0.043		$ -						
VSTN162	$ 66	$ 0.015					$ 0.156		$ -						
VSTN378	$ 467	$ -					$ 0.195		$ -						
VSTN557	$ 241	$ 0.015					$ 0.108		$ -						
VSTN609	$ 3,524	$ -					$ -		$ -						
VSTN788	$ 335	$ -					$ 0.148		$ -						
VSTN840	$ 33	$ 0.016					$ 0.043		$ -						
VSTNB164 (back-up)	$ -	$ 0.015					$ -		$ -						
VSTNB796 (back-up)	$ -	$ -					$ -		$ -						

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Table 37: SA Power Networks' indicative TUoS tariff rates for 2018/19

TUoS 2018/19	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential		$ 0.030	$ 0.030			$ 0.014									
Residential Monthly Actual kW Demand		$ 0.014				$ 0.014							$ 0.087	$ 0.043	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.013													
Small Business Single-Rate (obsolete July 2010)		$ 0.031				$ 0.014									
Small Business Two-Rate (multi-phase obsolete July 2015)				$ 0.035	$ 0.018	$ 0.014									
Small Business Monthly Actual kVA Demand		$ 0.012								$ 0.080	$ 0.040	$ -			
Small Business Monthly Actual kVA Demand Transition				$ 0.016	$ 0.013					$ 0.067	$ 0.033	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)		$ 0.010					$ 0.065	$ 0.065	$ -						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)		$ 0.038				$ 0.014									
Large Business Two-Rate Transition (type 6 meter)				$ 0.042	$ 0.022	$ 0.014									
Large Business Monthly Actual kVA Demand		$ 0.012								$ 0.080	$ 0.040	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)				$ 0.017	$ 0.014					$ 0.067	$ 0.033	$ -			
Large Business Annual Agreed kVA Demand		$ 0.010					$ 0.065	$ 0.065	$ -						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand		$ 0.012								$ 0.080	$ 0.040	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA		$ 0.010					$ 0.065		$ -						
HV Business Annual Agreed kVA Demand		$ 0.010					$ 0.065		$ -						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.010					$ 0.065		$ -						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.010					$ 0.065		$ -						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021	$ 419	$ -					$ 0.185		$ -						
VZSN022	$ 168	$ -					$ 0.134		$ -						
VZSN024	$ 185	$ -					$ 0.138		$ -						
VZSN026 (closed)															
VZSN035	$ 134	$ -					$ 0.184		$ -						
VZSN131	$ 181	$ -					$ 0.134		$ -						
VZSN228	$ 119	$ 0.014					$ 0.152		$ -						
VZSN438	$ 76	$ -					$ 0.139		$ -						
VZSN608	$ 53	$ -					$ 0.139		$ -						
VZSNB230 (back-up)	$ -	$ 0.014					$ -		$ -						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018	$ 1,408	$ -					$ 0.183		$ -						
VSTN084	$ 1,023	$ -					$ 0.176		$ -						
VSTN161	$ 201	$ 0.014					$ 0.039		$ -						
VSTN162	$ 60	$ 0.014					$ 0.141		$ -						
VSTN378	$ 422	$ -					$ 0.176		$ -						
VSTN557	$ 218	$ 0.014					$ 0.098		$ -						
VSTN609	$ 3,189	$ -					$ -		$ -						
VSTN788	$ 304	$ -					$ 0.134		$ -						
VSTN840	$ 30	$ 0.014					$ 0.039		$ -						
VSTNB164 (back-up)	$ -	$ 0.014					$ -		$ -						
VSTNB796 (back-up)	$ -	$ -					$ -		$ -						

Table 38: SA Power Networks' indicative TUoS tariff rates for 2019/20

TUoS 2019/20	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential		$ 0.032	$ 0.032			$ 0.015									
Residential Monthly Actual kW Demand		$ 0.015				$ 0.015							$ 0.091	$ 0.045	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.014													
Small Business Single-Rate (obsolete July 2010)		$ 0.033				$ 0.015									
Small Business Two-Rate (multi-phase obsolete July 2015)				$ 0.036	$ 0.019	$ 0.015									
Small Business Monthly Actual kVA Demand		$ 0.013								$ 0.085	$ 0.042	$ -			
Small Business Monthly Actual kVA Demand Transition				$ 0.013	$ 0.013					$ 0.085	$ 0.042	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)		$ 0.010					$ 0.068	$ 0.068	$ -						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)		$ 0.039				$ 0.015									
Large Business Two-Rate Transition (type 6 meter)				$ 0.044	$ 0.023	$ 0.015									
Large Business Monthly Actual kVA Demand		$ 0.013								$ 0.085	$ 0.042	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)				$ 0.013	$ 0.013					$ 0.085	$ 0.042	$ -			
Large Business Annual Agreed kVA Demand		$ 0.010					$ 0.068	$ 0.068	$ -						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand		$ 0.013								$ 0.085	$ 0.042	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA		$ 0.010					$ 0.068		$ -						
HV Business Annual Agreed kVA Demand		$ 0.010					$ 0.068		$ -						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.010					$ 0.068		$ -						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.010					$ 0.068		$ -						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021	$ 440	$ -					$ 0.194		$ -						
VZSN022	$ 177	$ -					$ 0.141		$ -						
VZSN024	$ 194	$ -					$ 0.145		$ -						
VZSN026 (closed)															
VZSN035	$ 141	$ -					$ 0.194		$ -						
VZSN131	$ 190	$ -					$ 0.141		$ -						
VZSN228	$ 125	$ 0.015					$ 0.160		$ -						
VZSN438	$ 80	$ -					$ 0.146		$ -						
VZSN608	$ 56	$ -					$ 0.146		$ -						
VZSNB230 (back-up)	$ -	$ 0.015					$ -		$ -						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018	$ 1,480	$ -					$ 0.193		$ -						
VSTN084	$ 1,076	$ -					$ 0.186		$ -						
VSTN161	$ 211	$ 0.015					$ 0.041		$ -						
VSTN162	$ 63	$ 0.015					$ 0.149		$ -						
VSTN378	$ 444	$ -					$ 0.186		$ -						
VSTN557	$ 230	$ 0.015					$ 0.103		$ -						
VSTN609	$ 3,354	$ -					$ -		$ -						
VSTN788	$ 319	$ -					$ 0.140		$ -						
VSTN840	$ 32	$ 0.015					$ 0.041		$ -						
VSTNB164 (back-up)	$ -	$ 0.015					$ -		$ -						
VSTNB796 (back-up)	$ -	$ -					$ -		$ -						

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Table 39: SA Power Networks' indicative PV-FiT tariff rates for 2017/18

PV FiT 2017/18	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.040	$ 0.012	$ 0.012			$ 0.012									
Residential Monthly Actual kW Demand	$ 0.040	$ 0.012				$ 0.012									
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.007													
Small Business Single-Rate (obsolete July 2010)	$ 0.040	$ 0.007				$ 0.012									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.040			$ 0.007	$ 0.007	$ 0.012									
Small Business Monthly Actual kVA Demand	$ 0.040	$ 0.007													
Small Business Monthly Actual kVA Demand Transition	$ 0.040			$ 0.007	$ 0.007										
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 0.040	$ 0.007													
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)		$ 0.005				$ 0.012									
Large Business Two-Rate Transition (type 6 meter)				$ 0.005	$ 0.005	$ 0.012									
Large Business Monthly Actual kVA Demand		$ 0.005													
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)				$ 0.005	$ 0.005										
Large Business Annual Agreed kVA Demand		$ 0.005													
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand		$ 0.003													
HV Business Annual Agreed kVA Demand < 400 kVA		$ 0.003													
HV Business Annual Agreed kVA Demand		$ 0.003													
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.001													
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.001													
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021		$ 0.001													
VZSN022		$ 0.001													
VZSN024		$ 0.001													
VZSN026 (closed)															
VZSN035		$ 0.001													
VZSN131		$ 0.001													
VZSN228		$ 0.001													
VZSN438		$ 0.001													
VZSN608		$ 0.001													
VZSNB230 (back-up)		$ 0.001													
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018		$ 0.001													
VSTN084		$ 0.001													
VSTN161		$ 0.001													
VSTN162		$ 0.001													
VSTN378		$ 0.001													
VSTN557		$ 0.001													
VSTN609		$ 0.001													
VSTN788		$ 0.001													
VSTN840		$ 0.001													
VSTNB164 (back-up)		$ 0.001													
VSTNB796 (back-up)		$ 0.001													

Table 40: SA Power Networks' indicative PV-FiT tariff rates for 2018/19

PV FiT 2018/19	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.039	$ 0.011	$ 0.011			$ 0.011									
Residential Monthly Actual kW Demand	$ 0.039	$ 0.011				$ 0.011									
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.007													
Small Business Single-Rate (obsolete July 2010)	$ 0.039	$ 0.007				$ 0.011									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.039			$ 0.007	$ 0.007	$ 0.011									
Small Business Monthly Actual kVA Demand	$ 0.039	$ 0.007													
Small Business Monthly Actual kVA Demand Transition	$ 0.039			$ 0.007	$ 0.007										
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 0.039	$ 0.007													
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)		$ 0.005				$ 0.011									
Large Business Two-Rate Transition (type 6 meter)				$ 0.005	$ 0.005	$ 0.011									
Large Business Monthly Actual kVA Demand		$ 0.005													
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)				$ 0.005	$ 0.005										
Large Business Annual Agreed kVA Demand		$ 0.005													
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand		$ 0.003													
HV Business Annual Agreed kVA Demand < 400 kVA		$ 0.003													
HV Business Annual Agreed kVA Demand		$ 0.003													
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.001													
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.001													
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021		$ 0.001													
VZSN022		$ 0.001													
VZSN024		$ 0.001													
VZSN026 (closed)															
VZSN035		$ 0.001													
VZSN131		$ 0.001													
VZSN228		$ 0.001													
VZSN438		$ 0.001													
VZSN608		$ 0.001													
VZSNB230 (back-up)		$ 0.001													
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018		$ 0.001													
VSTN084		$ 0.001													
VSTN161		$ 0.001													
VSTN162		$ 0.001													
VSTN378		$ 0.001													
VSTN557		$ 0.001													
VSTN609		$ 0.001													
VSTN788		$ 0.001													
VSTN840		$ 0.001													
VSTNB164 (back-up)		$ 0.001													
VSTNB796 (back-up)		$ 0.001													

SA Power Networks

Table 41: SA Power Networks' indicative PV-FiT tariff rates for 2019/20

PV FiT 2019/20	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.039	$ 0.011	$ 0.011			$ 0.011									
Residential Monthly Actual kW Demand	$ 0.039	$ 0.011				$ 0.011									
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.007													
Small Business Single-Rate (obsolete July 2010)	$ 0.039	$ 0.007				$ 0.011									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.039			$ 0.007	$ 0.007	$ 0.011									
Small Business Monthly Actual kVA Demand	$ 0.039	$ 0.007													
Small Business Monthly Actual kVA Demand Transition	$ 0.039			$ 0.007	$ 0.007										
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 0.039	$ 0.007													
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)		$ 0.005				$ 0.011									
Large Business Two-Rate Transition (type 6 meter)				$ 0.005	$ 0.005	$ 0.011									
Large Business Monthly Actual kVA Demand		$ 0.005													
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)				$ 0.005	$ 0.005										
Large Business Annual Agreed kVA Demand		$ 0.005													
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand		$ 0.003													
HV Business Annual Agreed kVA Demand < 400 kVA		$ 0.003													
HV Business Annual Agreed kVA Demand		$ 0.003													
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.001													
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.001													
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021		$ 0.001													
VZSN022		$ 0.001													
VZSN024		$ 0.001													
VZSN026 (closed)															
VZSN035		$ 0.001													
VZSN131		$ 0.001													
VZSN228		$ 0.001													
VZSN438		$ 0.001													
VZSN608		$ 0.001													
VZSNB230 (back-up)		$ 0.001													
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018		$ 0.001													
VSTN084		$ 0.001													
VSTN161		$ 0.001													
VSTN162		$ 0.001													
VSTN378		$ 0.001													
VSTN557		$ 0.001													
VSTN609		$ 0.001													
VSTN788		$ 0.001													
VSTN840		$ 0.001													
VSTNB164 (back-up)		$ 0.001													
VSTNB796 (back-up)		$ 0.001													

Table 42: SA Power Networks' indicative NUoS tariff rates for 2017/18

NUoS 2017/18	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day 12 months	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day 12 months
Residential Tariff Class															
Residential	$ 0.388	$ 0.124	$ 0.149			$ 0.066									
Residential Monthly Actual kW Demand	$ 0.388	$ 0.061				$ 0.066							$ 0.390	$ 0.193	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.061													
Small Business Single-Rate (obsolete July 2010)	$ 0.388	$ 0.137				$ 0.066									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.388			$ 0.153	$ 0.080	$ 0.066									
Small Business Monthly Actual kVA Demand	$ 0.388	$ 0.054								$ 0.348	$ 0.173	$ -			
Small Business Monthly Actual kVA Demand Transition	$ 0.388			$ 0.100	$ 0.066					$ 0.189	$ 0.094	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 10.040	$ 0.042					$ 0.277	$ 0.226	$ 0.107						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)	$ 0.349	$ 0.160				$ 0.066									
Large Business Two-Rate Transition (type 6 meter)	$ 0.349			$ 0.180	$ 0.092	$ 0.066									
Large Business Monthly Actual kVA Demand	$ 0.349	$ 0.052								$ 0.348	$ 0.173	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)	$ 0.349			$ 0.085	$ 0.060					$ 0.232	$ 0.115	$ -			
Large Business Annual Agreed kVA Demand	$ 10.000	$ 0.040					$ 0.277	$ 0.226	$ 0.107						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand	$ 0.349	$ 0.050								$ 0.348	$ 0.173	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA	$ 10.000	$ 0.038					$ 0.277		$ 0.107						
HV Business Annual Agreed kVA Demand	$ 68.493	$ 0.028					$ 0.222		$ 0.128						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.016					$ 0.171		$ 0.099						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.013					$ 0.094		$ 0.022						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021	$ 463	$ 0.005					$ 0.303		$ 0.099						
VZSN022	$ 186	$ 0.005					$ 0.247		$ 0.099						
VZSN024	$ 204	$ 0.005					$ 0.252		$ 0.099						
VZSN026 (closed)	$ -	$ -					$ -		$ -						
VZSN035	$ 148	$ 0.005					$ 0.302		$ 0.099						
VZSN131	$ 200	$ 0.005					$ 0.247		$ 0.099						
VZSN438	$ 131	$ 0.021					$ 0.267		$ 0.099						
VZSN608	$ 84	$ 0.005					$ 0.252		$ 0.099						
VZSNB230 (back-up)	$ 59	$ 0.005					$ 0.253		$ 0.099						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018	$ -	$ -					$ -		$ -						
VSTN084	$ 1,555	$ 0.002					$ 0.225		$ 0.022						
VSTN161	$ 1,130	$ 0.002					$ 0.217		$ 0.022						
VSTN162	$ 222	$ 0.018					$ 0.066		$ 0.022						
VSTN378	$ 66	$ 0.017					$ 0.179		$ 0.022						
VSTN557	$ 467	$ 0.002					$ 0.217		$ 0.022						
VSTN609	$ 241	$ 0.017					$ 0.131		$ 0.022						
VSTN788	$ 3,524	$ 0.002					$ 0.022		$ 0.022						
VSTN840	$ 335	$ 0.002					$ 0.170		$ 0.022						
VSTNB164 (back-up)	$ 33	$ 0.018					$ 0.066		$ 0.022						
VSTNB796 (back-up)	$ -	$ 0.017					$ 0.022		$ 0.022						

Table 43: SA Power Networks' indicative NUoS tariff rates for 2018/19

NUoS 2018/19	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.398	$ 0.128	$ 0.138			$ 0.066									
Residential Monthly Actual kW Demand	$ 0.398	$ 0.061				$ 0.066							$ 0.389	$ 0.192	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.061													
Small Business Single-Rate (obsolete July 2010)	$ 0.398	$ 0.136				$ 0.066									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.398			$ 0.152	$ 0.080	$ 0.066									
Small Business Monthly Actual kVA Demand	$ 0.398	$ 0.054								$ 0.347	$ 0.172	$ -			
Small Business Monthly Actual kVA Demand Transition	$ 0.398			$ 0.096	$ 0.065					$ 0.200	$ 0.099	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 10.316	$ 0.042					$ 0.276	$ 0.223	$ 0.110						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)	$ 0.358	$ 0.159				$ 0.066									
Large Business Two-Rate Transition (type 6 meter)	$ 0.358			$ 0.179	$ 0.092	$ 0.066									
Large Business Monthly Actual kVA Demand	$ 0.358	$ 0.051								$ 0.347	$ 0.172	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)	$ 0.358			$ 0.069	$ 0.056					$ 0.289	$ 0.143	$ -			
Large Business Annual Agreed kVA Demand	$ 10.276	$ 0.040					$ 0.276	$ 0.223	$ 0.110						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand	$ 0.358	$ 0.050								$ 0.347	$ 0.172	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA	$ 10.276	$ 0.038					$ 0.276		$ 0.110						
HV Business Annual Agreed kVA Demand	$ 70.387	$ 0.027					$ 0.220		$ 0.132						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.015					$ 0.167		$ 0.102						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.012					$ 0.088		$ 0.023						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021	$ 419	$ 0.005					$ 0.286		$ 0.102						
VZSN022	$ 168	$ 0.005					$ 0.236		$ 0.102						
VZSN024	$ 185	$ 0.005					$ 0.240		$ 0.102						
VZSN026 (closed)	$ -	$ -					$ -		$ -						
VZSN035	$ 134	$ 0.005					$ 0.286		$ 0.102						
VZSN131	$ 181	$ 0.005					$ 0.236		$ 0.102						
VZSN438	$ 119	$ 0.020					$ 0.254		$ 0.102						
VZSN608	$ 76	$ 0.005					$ 0.240		$ 0.102						
	$ 53	$ 0.005					$ 0.241		$ 0.102						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018	$ -	$ -					$ -		$ -						
VSTN084	$ 1,408	$ 0.002					$ 0.206		$ 0.023						
VSTN161	$ 1,023	$ 0.002					$ 0.199		$ 0.023						
VSTN162	$ 201	$ 0.016					$ 0.062		$ 0.023						
VSTN378	$ 60	$ 0.016					$ 0.164		$ 0.023						
VSTN557	$ 422	$ 0.002					$ 0.199		$ 0.023						
VSTN609	$ 218	$ 0.016					$ 0.121		$ 0.023						
VSTN788	$ 3,189	$ 0.002					$ 0.023		$ 0.023						
VSTN840	$ 304	$ 0.002					$ 0.157		$ 0.023						
VSTNB164 (back-up)	$ 30	$ 0.016					$ 0.062		$ 0.023						
VSTNB796 (back-up)	$ -	$ 0.016					$ 0.023		$ 0.023						

Table 44: SA Power Networks' indicative NUoS tariff rates for 2019/20

NUoS 2019/20	Supply Rate $/day	Usage Block 1 $/kWh	Usage Block 2 $/kWh	Peak Usage $/kWh	Off-Peak Usage $/kWh	Controlled Load $/kWh	Agreed kVA Block 1 $/kVA/day	Agreed kVA Block 2 $/kVA/day	Additional kVA $/kVA/day	Peak Actual kVA $/kVA/day 5 months	Shoulder Actual kVA $/kVA/day 12 months	Off-Peak Actual kVA $/kVA/day	Peak Actual kW $/kW/day 5 months	Shoulder Actual kW $/kW/day 7 months	Off-Peak Actual kW $/kW/day
Residential Tariff Class															
Residential	$ 0.407	$ 0.135	$ 0.135			$ 0.067									
Residential Monthly Actual kW Demand	$ 0.407	$ 0.062				$ 0.067							$ 0.402	$ 0.198	$ -
Small Business Tariff Class															
Unmetered 24 hour and 12 hour (streetlights)		$ 0.063													
Small Business Single-Rate (obsolete July 2010)	$ 0.407	$ 0.140				$ 0.067									
Small Business Two-Rate (multi-phase obsolete July 2015)	$ 0.407			$ 0.157	$ 0.082	$ 0.067									
Small Business Monthly Actual kVA Demand	$ 0.407	$ 0.055								$ 0.358	$ 0.178	$ -			
Small Business Monthly Actual kVA Demand Transition	$ 0.407			$ 0.094	$ 0.066					$ 0.221	$ 0.110	$ -			
Small Business Annual Agreed kVA Demand (obsolete July 2016)	$ 10.608	$ 0.043					$ 0.286	$ 0.231	$ 0.113						
Large Business Tariff Class															
Large Business Single-Rate Transition (type 6 meter)	$ 0.368	$ 0.165				$ 0.067									
Large Business Two-Rate Transition (type 6 meter)	$ 0.368			$ 0.185	$ 0.095	$ 0.067									
Large Business Monthly Actual kVA Demand	$ 0.368	$ 0.053								$ 0.358	$ 0.178	$ -			
Large Business Monthly Actual kVA Demand Trans. (obs. July 2016)	$ 0.368			$ 0.053	$ 0.053					$ 0.358	$ 0.178	$ -			
Large Business Annual Agreed kVA Demand	$ 10.569	$ 0.041					$ 0.286	$ 0.231	$ 0.113						
High Voltage Business Tariff Class															
HV Business Monthly Actual kVA Demand	$ 0.368	$ 0.051								$ 0.358	$ 0.178	$ -			
HV Business Annual Agreed kVA Demand < 400 kVA	$ 10.569	$ 0.039					$ 0.286		$ 0.113						
HV Business Annual Agreed kVA Demand	$ 72.388	$ 0.028					$ 0.227		$ 0.135						
Major Business Tariff Class															
Zone Substation Annual Agreed kVA Demand (non-locational)		$ 0.016					$ 0.173		$ 0.104						
Sub Transmission Annual Agreed kVA Demand (non-locational)		$ 0.012					$ 0.092		$ 0.024						
Zone Substation Annual Agreed kVA Demand (locational)															
VZSN021	$ 440	$ 0.006					$ 0.299		$ 0.104						
VZSN022	$ 177	$ 0.006					$ 0.246		$ 0.104						
VZSN024	$ 194	$ 0.006					$ 0.250		$ 0.104						
VZSN026 (closed)	$ -	$ -					$ -		$ -						
VZSN035	$ 141	$ 0.006					$ 0.298		$ 0.104						
VZSN131	$ 190	$ 0.006					$ 0.245		$ 0.104						
VZSN438	$ 125	$ 0.020					$ 0.264		$ 0.104						
VZSN608	$ 80	$ 0.006					$ 0.251		$ 0.104						
	$ 56	$ 0.006					$ 0.251		$ 0.104						
Sub Transmission Annual Agreed kVA Demand (locational)															
VSTN018	$ -	$ -					$ -		$ -						
VSTN084	$ 1,480	$ 0.002					$ 0.216		$ 0.024						
VSTN161	$ 1,076	$ 0.002					$ 0.209		$ 0.024						
VSTN162	$ 211	$ 0.017					$ 0.065		$ 0.024						
VSTN378	$ 63	$ 0.017					$ 0.172		$ 0.024						
VSTN557	$ 444	$ 0.002					$ 0.209		$ 0.024						
VSTN609	$ 230	$ 0.017					$ 0.127		$ 0.024						
VSTN788	$ 3,354	$ 0.002					$ 0.024		$ 0.024						
VSTN840	$ 319	$ 0.002					$ 0.164		$ 0.024						
VSTNB164 (back-up)	$ 32	$ 0.017					$ 0.065		$ 0.024						
VSTNB796 (back-up)	$ -	$ 0.017					$ 0.024		$ 0.024						

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Part B, Appendix B

Our policies and procedures for assigning customers to tariffs

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Appendix B – Our policies and procedures for assigning customers to tariffs

The requirements concerning the assignment and re-assignment of customers to tariff classes are set out in clause 6.18.4 of the Rules and Attachment 14 Appendix D of the AER's Final Decision (revenue determination).

B.1 Regulatory Requirements

Rules requirements

In making a distribution determination, the AER is required to formulate provisions for the assignment and re-assignment of customers to tariff classes, in accordance with the principles set out in clause 6.18.4 of the Rules. This Rule covers the following matters:

- Factors governing the assignment of customers to tariff classes;
- Equitable treatment of customers with micro-generation;
- The review of the DNSP decision on tariff class assignment; and
- The review of DNSPs' tariff structures containing energy or demand related charges.

B.2 Requirements of the AER's Final Decision

In accordance with the principles in clause 6.18.4 of the Rules, Attachment 14, Appendix D of the AER's Final Decision (revenue determination) sets out the procedures to apply to assigning or re-assigning customers to tariff classes[42]. These provisions are in several parts, covering the following aspects:

- Assignment of existing retail customers to tariff classes at the commencement of the forthcoming regulatory control period;
- Assignment of new retail customers to a tariff class during the next regulatory control period;
- Re-assignment of existing retail customers to another existing or a new tariff class during the next regulatory control period; and
- Objections to proposed assignments and re-assignments.

Assignment of existing retail customers to a tariff classes at the commencement of the forthcoming regulatory control period

1. SA Power Networks' retail customers will be taken to be "assigned" to the tariff class to which SA Power Networks was charging that retail customer immediately prior to 1 July 2015 if:
    - they were an SA Power Networks retail customer prior to 1 July 2015; and

[42] AER, Final Decision, October 2015, Attachment 14 pp. 21-23.

- they continue to be a retail customer of SA Power Networks as at 1 July 2015.

Assignment of new retail customers to a tariff class during the forthcoming regulatory control period

2. If, after 1 July 2015, SA Power Networks becomes aware that a person will become a customer, then SA Power Networks must determine the tariff class to which the new customer will be assigned.

3. In determining the tariff class to which a retail customer or potential retail customer will be assigned, or re-assigned, in accordance with paragraph 2 or 5 of this section, SA Power Networks must take into account one or more of the following factors:

   (a) the nature and extent of the retail customer's usage;

   (b) the nature of the retail customer's connection to the network[43]; and

   (c) 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.

4. In addition to the requirements under paragraph 3 above, SA Power Networks, when assigning or re-assigning a retail customer to a tariff class, must ensure:

   (a) retail customers with similar connection and usage profiles are treated equally; and

   (b) retail customers who have micro–generation facilities are not treated less favourably than retail customers with similar load profiles without such facilities.

Re-assignment of existing retail customers to another existing or a new tariff class during the next regulatory control period

5. SA Power Networks may re-assign a retail customer to another tariff class if the existing retail customer's load characteristics or connection characteristics (or both) have changed such that it is no longer appropriate for that retail customer to be assigned to the tariff class to which the retail customer is currently assigned or a retail customer no longer has the same or materially similar load or connection characteristics as other retail customers on the retail customer's existing tariff class, then it may re-assign that retail customer to another tariff class. In determining the tariff class to which a retail customer will be re-assigned, SA Power Networks must take into account paragraphs 3 and 4 above.

Objections to proposed assignments and re-assignments

6. SA Power Networks must notify a customer's retailer in writing of the tariff class to which the retail customer has been assigned or re-assigned, prior to the assignment or re-assignment occurring.

[43] The AER interprets 'nature' to include the installation of any technology capable of supporting time based tariffs.

7. A notice under paragraph 6 above must include advice informing the customer's retailer that they may request further information from SA Power Networks and that the retail customer may object to the proposed re-assignment. This notice must specifically include:

   a. a written document describing SA Power Networks' internal procedures for reviewing objections;

   b. that if the objection is not resolved to the satisfaction of the customer's retailer under SA Power Networks' internal review system within a reasonable timeframe, then, to the extent that resolution of such disputes are within the jurisdiction of the EWOSA, or like officer, the customer's retailer is entitled to escalate the matter to such a body; and

   c. that if the objection is not resolved to the satisfaction of the customer's retailer under SA Power Networks' internal review system and the body noted in clause7.b above, then the customer or its retailer is entitled to seek a decision of the AER via the dispute resolution process available under Part 10 of the NEL.

8. If, in response to a notice issued in accordance with paragraph 7 above, SA Power Networks receives a request for further information from a customer's retailer, then it must provide such information within a reasonable timeframe. If SA Power Networks reasonably claims confidentiality over any of the information requested by the customer's retailer, then it is not required to provide that information to the customer's retailer. If the customer's retailer disagrees with such confidentiality claims, he or she may have resort to the dispute resolution procedures referred to in paragraph 7 (as modified for a confidentiality dispute).

9. If, in response to a notice issued in accordance with paragraph 7 above, a customer's retailer makes an objection to SA Power Networks about the proposed assignment or re-assignment, SA Power Networks must reconsider the proposed assignment or re-assignment. In doing so SA Power Networks must take into consideration the factors in paragraphs 3 and 4 above, and notify the customer's retailer in writing of its decision and the reasons for that decision.

10. If a customer's retailer's objection to a tariff assignment or re-assignment is upheld by the relevant body noted in paragraph 7.b and 7.c above, then any adjustment which needs to be made to tariffs will be done by SA Power Networks as part of the next annual review of prices.

11. If a customer's retailer objects to SA Power Networks' tariff class assignment SA Power Networks must provide the information set out in paragraph 7 above and adopt and comply with the arrangements set out in paragraph 8, 9 and 10 above in respect of requests for further information by the customer's retailer and resolution of the objection.

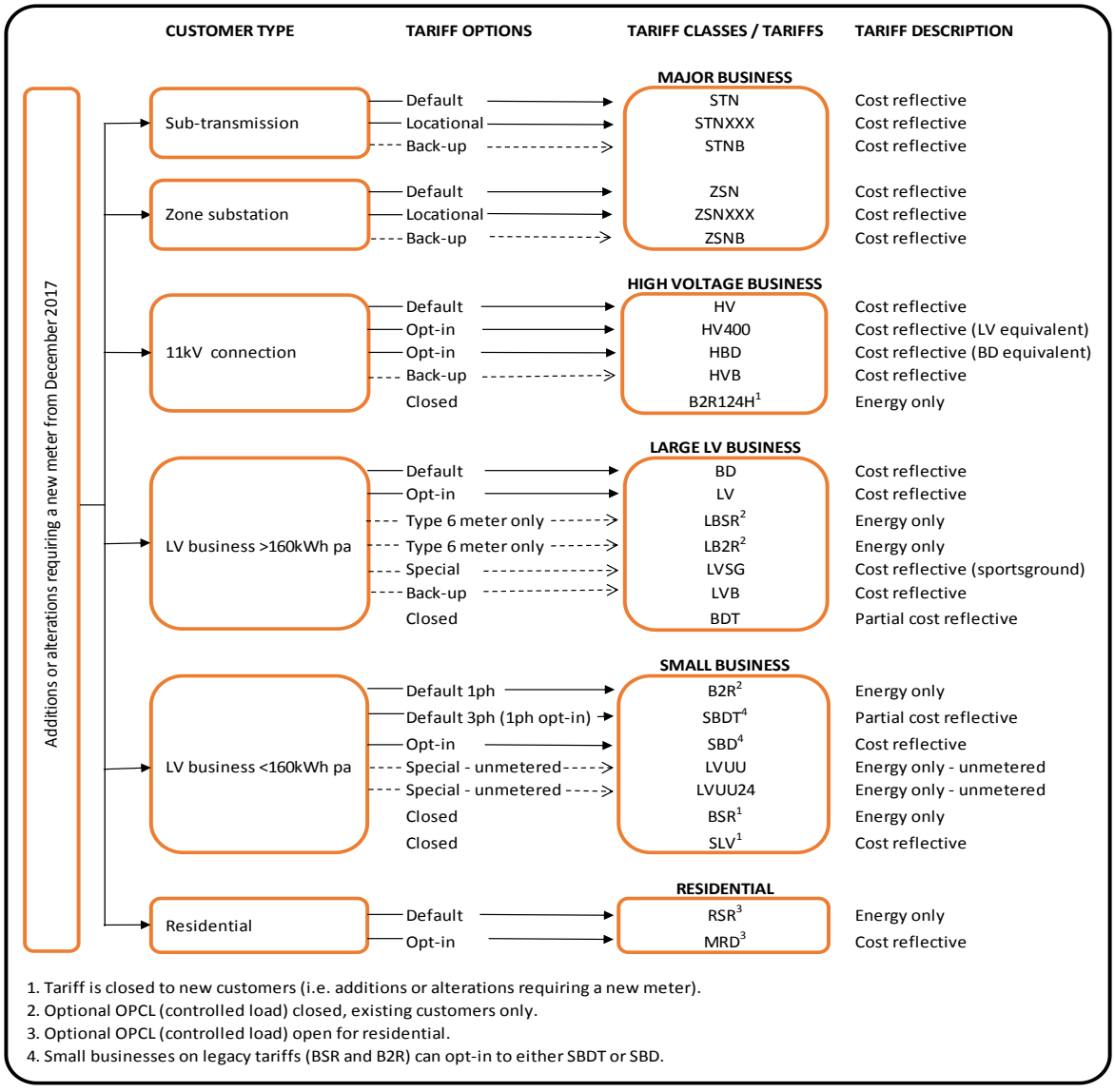
B.3 Our response to the assignment/re-assignment requirements

In this Section of the revised TSS, SA Power Networks describes the process it applies to the initial assignment of customers to tariffs and to their re-assignment. Notwithstanding that the individual tariffs have been grouped within tariff classes in this revised TSS, the existing approach to managing tariff assignment and re-assignment is demonstrated to align with the requirements established by the AER.

B.3.1 Assignment of new customers to a tariff class and tariff

The process whereby new customers are assigned to tariff classes and tariffs, following the receipt of a connection application by the customer or their retailer, follows in Figure 24. In the application of this process, a customer that lodges an application to modify or upgrade an existing network connection is treated in the same manner as a new customer.

Figure 24: Assignment of new and upgraded customer connections to tariff classes



1. Tariff is closed to new customers (i.e. additions or alterations requiring a new meter).
2. Optional OPCL (controlled load) closed, existing customers only.
3. Optional OPCL (controlled load) open for residential.
4. Small businesses on legacy tariffs (BSR and B2R) can opt-in to either SBDT or SBD.

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The two major decisions that determine the tariff class assessment are as follows:

- The nature of a customer's usage: (ie residential or business); and
- For business customers only, the nature and extent of the associated connection to the network (the connection voltage, whether located within the network or directly connected to a zone substation), and if the business customer is connected at LV then the annual consumption (above or below 160MWh pa) applies as a further test.

  Note that large LV businesses with a Type 6 meters cannot utilise the default BD tariff which requires interval metering. These customers (with a Type 6 meter) will be assigned to either LBSR or LB2R.

B.3.1.1 Assignment to demand tariffs – Thresholds and triggers

The specific thresholds and triggers approved through our previous APP's that will result in a business customer being assigned to a cost-reflective tariff comprise:

- All large businesses (> 160 MWh pa), from July 2015;
- All businesses with a maximum demand exceeding 250 kVA, from July 1999;
- All new/alterations to supply businesses requiring more than 100 Amps capacity (CT metering, about 70 kVA), from July 2010; and
- All new/alterations to supply small businesses requiring three phase supply, from July 2015.

Alterations to supply include those alterations that would require a new meter to be installed, for example:

- Physical supply changes to an existing supply that increase the capacity of supply to a customer, eg converting to three phase power from single phase, or having the available capacity to a property increased; and
- Installing an inverter to enable import and expert of energy to the network.

Alterations to supply/new customers do not include:

- A change in the name of the existing account holder;
- The installation of an interval meter, by either customer choice or by replacement;
- Installing an appliance greater than 25 amps without increasing the supply capacity would not in itself require a meter upgrade, so will not be considered an alteration; and
- The installation of battery storage (unless the customer will export energy to the network which would require a new meter). Whilst battery storage does require an inverter, we do not consider batteries to be an alteration to supply that will increase the cost of supply. It is likely that the customer will benefit from the use of cost-reflective tariffs with batteries,

however we do not propose to mandate such tariff assignments. (Note that whilst battery storage installation might not trigger an 'alteration to supply' and consequent cost-reflective tariff triggers, it will render a customer previously eligible for the 2028 PV FiT 44 cent/kWh schemes to be ineligible if the battery can export to the grid).

B.3.1.2 Customers with micro-generation

As SA Power Networks' tariff class assignment process is applied to the ***net*** customer demand on the network, it does not distinguish between customers that have micro-generation and those without.

The only aspects of the connection process that distinguish customers with micro-generation are technical requirements, principally to ensure public and employee safety in the event of disconnection of supply to a site with generation.

B.3.3 Re-assignment of existing customers to another existing or a new tariff during the next regulatory control period

Within each tariff class, there has been and will continue to be movement between individual tariffs. This is particularly the case with the customers in the small business and large LV business tariff classes.

The five tariff classes that SA Power Networks has established are sufficiently broad to ensure that all the existing customers are within the appropriate tariff class and that it is unlikely that customers will seek to migrate or be reclassified to a different tariff class during the course of the determination. Transfer between tariff classes would be limited to circumstances where the nature of usage or level of consumption changed significantly, for example where a residence was redeveloped to become a small business such as a medical surgery or office.

Transfer can also occur between the small business and large LV business tariff classes if a customers' consumption moves across the 160MWh threshold. SA Power Networks proposes to review customers' consumption in April each year, using data from 31 March. We will advise retailers of any resultant tariff class/tariff changes in May. The changes will apply from 1 July in that year.

Notwithstanding that the re-assignment of customers' tariff classes is unlikely during the 2015-20 regulatory control period, SA Power Networks will do so in accordance with the provisions of the AER's Decision (revenue determination).

SA Power Networks follows the same processes for customers being re-assigned to another tariff within a tariff class as would apply to customers being re-assigned to another tariff class. Customers are able to object to such re-assignments in the same manner that they are permitted to object to a tariff class re-assignment.

B.3.4 Objections to proposed assignments and re-assignments

The AER has established requirements that SA Power Networks must follow in assigning or reassigning customers to tariff classes and in responding to objections to SA Power Networks' tariff class assignments.

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The requirements that SA Power Networks must follow have been documented in an internal procedure entitled ”Manual 18, Network Tariff Manual”.

This document is published on SA Power Networks’ web site.

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Part B, Appendix C

LRMC calculation methodology

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Appendix C – LRMC calculation methodology

This Appendix sets out the methodology which SA Power Networks has developed to determine the LRMC of supply for its standard control services tariff classes. This method was established for 2010-15 and has had minor updates since then. SA Power Networks bases the charging parameters of its distribution tariffs on LRMC, in accordance with the provisions of clause 6.18.5(f) of the Rules.

The consideration of LRMC applies where price signalling charging parameters (peak period energy and demand related components) form part of a tariff. SA Power Networks aims to ensure that where price signals are varied, they are moved in such a direction as to improve alignment with the LRMC. Charging components that materially over-recover or under-recover the LRMC would not pass on an efficient pricing signal to customers that represents their cost of utilising the network.

Where such price signalling charging parameters of a tariff do not recover sufficient revenue to cover the capital, operating and maintenance costs of the existing assets, the shortfall is recovered through a charging component that minimises distortion of the customers' consumption decisions, such as a fixed daily charge and an energy usage charge. This is in accordance with the requirement in clause 6.18.5(g) of the Rules.

This document describes the most recent update of SA Power Networks' estimate of the network LRMC. It is consistent with earlier such estimates and is in large measure based on the AER's Final Decision (revenue determination).

C.1 Approach used to calculate LRMC

In the context of an infrastructure business with assets lives of typically 40 years, short run costs are effectively zero, up to the point where the capacity of the network is exceeded. It is therefore important to use LRMC in any consideration of the marginal cost of providing network service. In this context, the long run refers to a situation in which the investment in plant and equipment is variable.

There are three general approaches to the calculation of LRMC described in the literature, as follows:

- ***Perturbation or Turvey approach*** - where scenario(s) involving increased demand are tested for their incremental effect on capex. The associated marginal cost is calculated as the difference between the present value of the investment programs divided by the increment in demand;

- ***Average Incremental Cost*** (**AIC**) - is the present value of the incremental investment associated with increasing demand divided by the present value of the increment in demand; and

- ***Long Run Incremental Cost*** (**LRIC**) - is the annuitised value of the capital expenditure divided by the increment in demand. Such an approach is in common use for tariff setting in the UK and is termed the "500 MW model", as the costs are derived from a hypothetical optimal system to service that level of demand.

In comparing the suitability of these three approaches, the first requires scenario definition and analysis, which although not impracticable would be very resource intensive in the context of SA

Power Networks' distribution business. In effect, it would require re-estimation of the expenditure proposals provided to the AER.

The third model involves the establishment of a hypothetical model system with spatial, load density and system voltage characteristics similar to that of the DNSP. This approach has not at this stage been used by other Australian DNSPs for tariff setting.

The approach used by SA Power Networks to determine the LRMC of its tariff classes in this revised TSS may be characterised as the AIC. However, the calculation has been extended to incorporate the incremental operating cost associated with new capital investment. This is understood to be the same as the approach taken by other Australian DNSPs.

The AIC may be expressed algebraically in the following general form:

$$LRMC(AIC) = \frac{PV(growth\ related\ capex + growth\ related\ opex)}{PV(incremental\ demand)}$$

Where:

growth related capex is the annualised capital expenditure to meet the additional demand and new customer connections forecast over the forecast period;

growth related opex is the incremental annual cost of operating and maintaining the newly constructed network assets over the forecast period; and

incremental demand is the forecast change in kW demand

C.2 Components of the AIC calculation

The specific components that SA Power Networks has included in its AIC formula are shown in Table 45.

Table 45: Components of the AIC calculation

Numerator – incremental annual costs		Denominator – incremental demand
Annual cost of incremental capital expenditure over asset life	Augmentation expenditure (Augex) by system level Proportion of Replacement expenditure (Repex), assessed as providing a useable network capacity increase through modern equipment	Incremental annual demand growth in kW by voltage level Proportion of annual connections growth in kW, requiring local augmentation
Annual Operating and Maintenance (O&M) expenditure associated with the above capital expenditure, based on a percentage of the asset costs.		

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Each of these components was derived from the information provided to the AER as part of the 2015 regulatory proposal. They are described in turn in the sections below.

The AIC analysis must be disaggregated by system and voltage level to be able to be applied to the tariffs of customers connected at the corresponding levels in the network. The system levels used by SA Power Networks are:

- Subtransmission (33 and 66 kV)
- Zone Substation (11 kV busbar)
- HV Feeder (11 kV system connected)
- Distribution Substation (Low Voltage, connected at the substation busbar)
- LV Feeder (connected to the low voltage network)

C.3 Cost of capital, asset life and analysis period

The AER updated the cost of capital for 2016/17, in April 2016[44]. The real vanilla WACC of 3.60% has been used both for the calculation of the annual cost of capital and to discount both cost and growth components in the AIC formula. A real discount rate must be used, as the demand growth in kW is a physical quantity.

The incremental assets are all assumed to have a life of 40 years.

The analysis has been extended to cover the 25-year period from 2016/17 to 2039/40 in order to avoid "end effects" from the use of a short analysis period and provide a more realistic long run estimate. With the 2015-20 regulatory control period costs as the starting point, detailed cost forecasts were prepared to 2024/25 and the average of the 2020-25 expenditures applied for the remainder of the 25-year analysis period.

C.4 Augmentation expenditure

The augex included in the AIC model was drawn from that submitted to and approved by the AER in the 2015 determination. Some expenditure items associated with aspects such as system security were excluded, as they were not directly associated with demand growth.

[44] AER, File: AER - SA Power Networks distribution determination - 2016-17 return on debt update - PTRM - June 2016.XLSXM

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The mapping of expenditures to system levels in the AIC analysis is shown in Table 46.

Table 46: Mapping of RIN augmentation expenditures to system levels

RIN category	System level				
	Sub-Trans	Zone Sub	HV Feeder	Dist Sub	LV Feeder
Connection Point Capacity	100%	-	-	-	-
Connection Point Capacity - New	100%	-	-	-	-
LV & Distribution Transformers (QoS BAU)	-	-	-	80%	20%
Distribution Feeders - Country	-	-	100%	-	-
Distribution Feeders	-	-	100%	-	-
NER Compliance (Pwr Factor)	-	100%	-	-	-
Strategic Network Capacity (Other)	-	70%	20%	-	10%
Substation Capacity	-	100%	-	-	-
Substation Capacity - New	-	100%	-	-	-
Sub-transmission Network - Country	100%	-	-	-	-
Sub-transmission Network	100%	-	-	-	-
Voltage Regulation	-	-	100%	-	-
Land	-	100%	-	-	-
LV Two Way Network (QoS)	-	-	50%	25%	25%
Supply Security	70%	-	30%	-	-
Substation Standards Digital Optimisation	-	100%	-	-	-
Flexible load management	-	-	50%	25%	25%

Those Augex RIN categories not listed in Table 29 have been excluded.

C.5 Replacement expenditure

A detailed review of Repex over the 2015-20 regulatory control period identified some augmentations that provide additional useable network capacity. This is due to the substitution of modern equivalent assets, which frequently have a higher rating than those they replace. The proportions of Repex allocated to system levels are shown in Table 47.

Table 47: Mapping of RIN replacement expenditures to system levels

RIN category	System level				
	Sub-Trans	Zone Sub	HV Feeder	Dist Sub	LV Feeder
Cable Replacement - Planned	-	-	15%	-	10%
Conductor Replacement - Planned	-	-	15%	-	10%
Services Replacement - Planned	-	-	-	-	15%
Transformers - Planned	-	-	-	25%	-
Cable Replacement - Unplanned	-	-	15%	-	10%
Services Replacement - Unplanned	-	-	-	-	15%
Transformers - Unplanned	-	-	-	25%	-
Circuit breakers	-	10%	-	-	-
Substation Transformers	-	25%	-	-	-
Unplanned major plant refurbishment	25%	-	-	-	-

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Again, the Repex RIN categories not listed in Table 30 have been excluded. Approximately 7% of the total Repex expenditure has been included in the AIC analysis.

C.6 Operating and maintenance expenditure

Incremental operating expenditure was assumed to represent 1.5% - 2.5% of the forecast cost of assets. Assets at higher voltage levels tend to be more capital intensive, whereas those at lower voltage levels are less so but more maintenance intensive. In addition, the operating expenditure on newly commissioned assets was phased in during the years following asset commissioning, as shown below (Year 0 is the year of commissioning). This reflects the fact that newly commissioned assets do not require full maintenance for a period. The resulting percentages are shown in Table 48.

Table 48: Forecast operating expenditure increments

System level	Year 0	Year 1	Year 2	Year 3	Year 4
ST	0	1.5%*60% = 0.9%	0	0	1.5%*40% = 0.6%
HV	0	2.0%*60% = 1.2%	0	0	2.0%*40% = 0.8%
LV	0	2.5%*60% = 1.5%	0	0	2.5%*40% = 1.0%

The above percentages are applied to the forecast of net capital costs. The outcome is a forecast that represents the annual incremental operating expenditure associated with demand capital expenditure at the various system levels.

C.7 Incremental demand forecast

There are two components to the forecast of the incremental demand that drives capital expenditure, as follows:

- Net demand growth; and
- New connections growth.

These are described in turn.

Net demand growth

The demand forecast submitted to the AER for the 2015-20 regulatory control period was used as the basis for determining the incremental kW growth. This was supplemented by a consistent forecast for the 2020-25 period. Subsequent years to 2039/40 were an average of 2020-25 outcomes.

New connections growth

The net incremental demand growth includes the demand from new connections but is offset by disconnections and at premises where the demand reduces. New connections in many cases require local augmentation and need to be factored into the increment of demand that the capital expenditure is serving. The AIC analysis assumes that 75% of new connections result in local augmentation.

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As the basis for this estimate, SA Power Networks has taken the forecast of new connection numbers provided to the AER for the 2015-20 regulatory control period. Average customer sizes for the residential, commercial and Commercial HV sizes were used to determine the incremental kW. This forecast was extended to 2039/40 by adopting the average increment over the 2015-20 regulatory control period.

C.8 LRMC outcomes

The calculated AIC values derived from the above forecasts and other assumptions are shown in Table 49. These are derived for each system level (note that the higher levels of the system also support downstream levels). The rows represent the cost of network assets, whereas the columns represent customers connected to that asset.

Table 49: AIC calculation

System level	Δ MW	Δ cost	ST	HV bus	HV net	LV bus	LV net	Alloc. cost	$/kW/ year	pf	$/kVA/ year
ST	**142**	**18.8**	3.3					**3.3**	$23	0.95	**$22**
ZSN	**104**	**27.5**	2.4	4.2				**6.6**	$64	0.90	**$57**
HV feeder	**37**	**14.2**	0.9	1.5	0.9			**3.3**	$88	0.90	**$80**
LV Substation	**41**	**12.2**	0.9	1.6	1.0	0.9		**4.5**	$111	0.90	**$100**
LV feeder	**493**	**6.0**	11.3	20.0	12.2	11.3	6.0	**60.9**	$123	0.90	**$111**
Totals		***78.6***	***18.8***	***27.5***	***14.2***	***12.2***	***6.0***	***78.6***			

The calculation of AIC from the forecast kW demand is in $/kW/annum. The network is augmented to provide additional capacity for the connection of additional total power demand in kVA, rather than in kW. Accordingly, the LRMC is converted to $/kVA per annum using the compliant power factor typical for the voltage concerned.

C.9 Application of LRMC to SA Power Networks' tariffs

In Table 50, the LRMC outcomes have been updated for individual tariffs for 2017/18. The AIC results at the sub-transmission, high voltage and distribution transformer levels are directly applicable to the Major Business, High Voltage and large Low Voltage Business tariff classes. At low voltage, the LRMC outcomes apply to both Small Business and Residential tariff classes.

Table 50: Calculated LRMC for SA Power Networks' network ($2017/18)

Tariff class	LRMC, $/kVA per annum
Major business	$23 (ST) - $57 (HV)
HV business	$80
Large LV business	$100
Small business	$111
LV residential	$111

The estimates of LRMC in Table 50have been used as the basis for tariffs in the revised TSS.

Part B, Appendix D

Compliance statement

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Appendix D - Compliance statement

The development of a tariff structure statement for the initial regulatory control period is governed by the current NER Chapter 6 subject to the transitional modifications set out in Chapter 11 Clause 11.73.2(a). The compliance statement shown in Table 51 has been prepared with reference to Version 83 of the Rules.

Table 51: Compliance statement

Rule provision	Rule requirement	Relevant section
Part E: Proposed tariff structure statement		
6.8.2	**Submission of regulatory proposal and tariff structure statement**	
6.8.2(a)	A *Distribution Network Service Provider* must, whenever required to do so under paragraph (b), submit to the *AER* a proposed *tariff structure statement* related to the *distribution services* provided by means of, or in connection with, the *Distribution Network Service Provider's distribution system*.	Noted
6.8.2(b)	A proposed *tariff structure statement* must be submitted:	Noted
6.8.2(c) 6.8.2(c1) 6.8.2(c2) 6.8.2(d)	A proposed *tariff structure statement* must be accompanied by information that contains a description (with supporting materials) of how the proposed *tariff structure statement* complies with the *pricing principles for direct control services.*	Part B, Sections 3 to 9
6.8.2(c1a)	The proposed *tariff structure statement* must be accompanied by an overview paper which includes a description of how the *Distribution Network Service Provider* has engaged with *retail customers* and *retailers* in developing the proposed *tariff structure statement* and has sought to address any relevant concerns identified as a result of that engagement.	Part B, Sections 3 and 4
6.8.2(d1)	The proposed *tariff structure statement* must be accompanied by an *indicative pricing schedule*.	Part B, Appendix A

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Rule provision	Rule requirement	Relevant section
6.8.2(d2)	The proposed *tariff structure statement* must comply with the *pricing principles for direct control services*.	Part B, Sections 3 to 9
6.10.3	**Submission of revised proposal**	
6.10.3(a)	In addition to making written submissions, the *Distribution Network Service Provider* may, not more than 45*business days* after the publication of the draft distribution determination, submit a revised *regulatory proposal* or a revised proposed *tariff structure statement* to the *AER*.	Noted
6.10.3(b)	A *Distribution Network Service Provider* may only make the revisions referred to in paragraph (a) so as to incorporate the substance of any changes required to address matters raised by the draft distribution determination or the *AER's* reasons for it.	Noted
6.10.3(b1)	A revised proposed *tariff structure statement* must comply with the *pricing principles for direct control services* and must be accompanied by a revised *indicative pricing schedule*.	Part B, Appendix A
Part I: Distribution pricing rules		
6.18.1A	**Tariff structure statement**	
6.18.1A(a)	A *tariff structure statement* of a *Distribution Network Service Provider* must include the following elements:	
6.18.1A(a)(1)	the *tariff classes* into which *retail customers* for *direct control services* will be divided during the relevant *regulatory control period*;	Part B, Section 5
6.18.1A(a)(2)	the policies and procedures the *Distribution Network Service Provider* will apply for assigning retail customers to tariffs or reassigning *retail customers* from one tariff to another (including any applicable restrictions);	Part B, Section 5 and Appendix B
6.18.1A(a)(3)	the structures for each proposed tariff;	Part B, Section 5

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Rule provision	Rule requirement	Relevant section
6.18.1A(a)(4)	the *charging parameters* for each proposed tariff; and	Part B, Section 5
6.18.1A(a)(5)	a description of the approach that the *Distribution Network Service Provider* will take in setting each tariff in each *pricing proposal* of the *Distribution Network Service Provider* during the relevant regulatory control period in accordance with clause 6.18.5.	Part B, Sections 6 and 7
6.18.1A(b)	A *tariff structure statement* must comply with the *pricing principles for direct control services*.	Part B, Sections 3 to 9
6.18.1A(c)	A *Distribution Network Service Provider* must comply with the *tariff structure statement* approved by the *AER* and any other applicable requirements in the *Rules*, when the provider is setting the prices that may be charged for *direct control services*.	Noted
6.18.1A(d)	Subject to clause 6.18.1B, a *tariff structure statement* may not be amended during a *regulatory control period*. **Note** Rule 6.13 still applies in relation to a *tariff structure statement* because that rule deals with the revocation and substitution of a distribution determination (which includes a *tariff structure statement*) as opposed to its amendment.	Noted
6.18.1A(e)	A *tariff structure statement* must be accompanied by an *indicative pricing schedule* which sets out, for each tariff for each *regulatory year* of the *regulatory control period*, the indicative price levels determined in accordance with the *tariff structure statement*.	Part B, Appendix A
6.18.3	**Tariff classes**	
6.18.3(b)	Each customer for *direct control services* must be a member of 1 or more *tariff classes*.	Part B, Sections 5 and 7

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Rule provision	Rule requirement	Relevant section
6.18.3(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*).	Part B, Sections 5 and 7
6.18.3(d)	A *tariff class* must be constituted with regard to:	
6.18.3(d)(1)	the need to group *retail customers* together on an economically efficient basis; and	Part B, Sections 5, 6 and 7
6.18.3(d)(2)	the need to avoid unnecessary transaction costs.	Part B, Sections 5, 6 and 7
6.18.4	**Principles governing assignment or re-assignment of retail customers to tariff classes and assessment and review of basis of charging**	
6.18.4(a)	In formulating provisions of a distribution determination governing the assignment of *retail customers* to t*ariff classes* or the re-assignment of *retail customers* from one *tariff class* to another, the *AER* must have regard to the following principles:	Noted
6.18.4(a)(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*;	Part B, Sections 5 and 7
6.18.4(a)(2)	*retail customers* with a similar *connection* and usage profile should be treated on an equal basis;	Part B, Sections 5 and 7, Appendix B

Rule provision	Rule requirement	Relevant section
6.18.4(a)(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;	Part B, Appendix B
6.18.4(a)(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.	Part B, Appendix B
6.18.4(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.	Noted
6.18.5	**Pricing principles**	
	Network pricing objective	
6.18.5(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*.	Noted
	Application of the pricing principles	
6.18.5(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).	Noted
6.18.5(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:	Noted
6.18.5(c)(1)	to the extent permitted under paragraph (h); and	Noted
6.18.5(c)(2)	to the extent necessary to give effect to the pricing principles set out in paragraphs (i) to (j).	Noted

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Rule provision	Rule requirement	Relevant section
6.18.5(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*.	Noted
	Pricing principles	
6.18.5(e)	For each *tariff class*, the revenue expected to be recovered must lie on or between:	
6.18.5(e)(1)	an upper bound representing the stand alone cost of serving the *retail customers* who belong to that class; and	Part B, Section 6
6.18.5(e)(2)	a lower bound representing the avoidable cost of not serving those *retail customers*.	Part B, Section 6
6.18.5(f)	Each tariff must be based on the *long run marginal cost* of providing the service to which it relates to the *retail customers* assigned to that tariff with the method of calculating such cost and the manner in which that method is applied to be determined having regard to:	Part B, Section 6 and Appendix C
6.18.5(f)(1)	the costs and benefits associated with calculating, implementing and applying that method as proposed;	Part B, Section 6
6.18.5(f)(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	Part B, Section 6
6.18.5(f)(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*.	Part B, Section 6
6.18.5(g)	The revenue expected to be recovered from each tariff must:	
6.18.5(g)(1)	reflect the *Distribution Network Service Provider's* total efficient costs of serving the *retail customers* that are assigned to that tariff;	Part B, Section 6

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Rule provision	Rule requirement	Relevant section
6.18.5(g)(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	Part B, Section 6
6.18.5(g)(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).	Part B, Section 6
6.18.5(h)	A *Distribution Network Service Provider* must consider the impact on *retail customers* of changes in tariffs from the previous *regulatory year* and may vary tariffs from those that comply with paragraphs (e) to (g) to the extent the *Distribution Network Service Provider* considers reasonably necessary having regard to:	Part B, Sections 6 and 9
6.18.5(h)(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*);	Part B, Section 6
6.18.5(h)(2)	the extent to which *retail customers* can choose the tariff to which they are assigned; and	Part B, Section 6
6.18.5(h)(3)	the extent to which *retail customers* are able to mitigate the impact of changes in tariffs through their usage decisions.	Part B, Section 6
6.18.5(i)	The structure of each tariff must be reasonably capable of being understood by *retail customers* that are assigned to that tariff, having regard to:	Part B, Section 5 and 9
6.18.5(i)(1)	the type and nature of those *retail customers*; and	Part B, Section 5 and 9
6.18.5(i)(2)	the information provided to, and the consultation undertaken with, those *retail customers*.	Part B, Section 5 and 9
6.18.5(j)	A tariff must comply with the *Rules* and all *applicable regulatory instruments*.	Noted

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Rule provision	Rule requirement	Relevant section
6.18.6	**Side constraints on tariffs for standard control services**	
6.18.6(a)	This clause applies only to *tariff classes* related to the provision of *standard control services*.	Part B, Section 6
6.18.6(b)	The expected weighted average revenue to be raised from a *tariff class* for a particular *regulatory year* of a *regulatory control period* must not exceed the corresponding expected weighted average revenue for the preceding *regulatory year* in that *regulatory control period* by more than the permissible percentage.	Part B, Section 6