SA Power Networks

2020–25 Regulatory Proposal

An overview for South Australian electricity customers

January 2019

What this document is about

This Overview document forms part of the SA Power Networks 2020-25 Regulatory Proposal to the Australian Energy Regulator, along with Attachments 1-18 and other supporting information.

Acknowledgement of Country

SA Power Networks acknowledges the Australian Aboriginal and Torres Strait Islander peoples of this nation. We acknowledge the traditional custodians of the lands on which our company is located and where we conduct our business. We pay respects to ancestors and elders, past and present. SA Power Networks is committed to honouring Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to the land, waters and seas and their rich contribution to society.

Company information

SA Power Networks is the registered Distribution Network Service Provider (DNSP) for South Australia. For information about SA Power Networks visit sapowernetworks.com.au

Disclaimer

This document contains certain predictions, estimates and statements that reflect various assumptions concerning, amongst other things, economic growth and load growth forecasts that, by their nature, may or may not prove to be correct and are subject to ongoing change and development.

Whilst care was taken in the preparation of the information in this overview, and it is provided in good faith, SA Power Networks, its officers and shareholders accept no responsibility or liability for any loss or damage that may be incurred by any person acting in reliance on this information or assumptions drawn from it for a different purpose or in a different context.

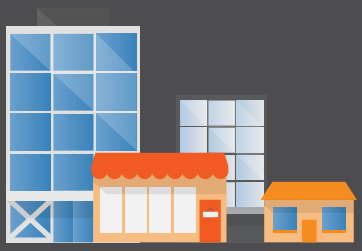
Glossary

Acronym	Full name
ACCC	Australian Competition and Consumer Commission
ACS	Alternative Control Services
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ARENA	Australian Renewable Energy Agency
CALD	Culturally and Linguistically Diverse
CAM	Cost Allocation Method
capex	Capital Expenditure
CBD	Central Business District
CCP14	AER's Consumer Challenge Panel
CESS	Capital Expenditure Sharing Scheme
CPI	Consumer Price Index
CSIRO	Commonwealth Scientific & Industrial Research Organisation
DER	Distributed Energy Resources
DMIA	Demand Management Incentive Allowance
DPTI	The Department of Planning, Transport and Infrastructure
EBSS	Efficiency Benefit Sharing Scheme
ECA	Energy Consumers Australia
ENA	Energy Networks Australia

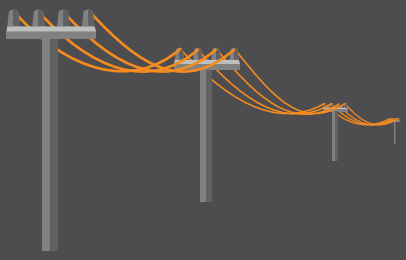
Acronym	Full name
ESCoSA	Essential Services Commission of South Australia
EV	Electric Vehicle
GSL	Guaranteed Service Level
IT	Information Technology
LED	Light Emitting Diode
LGA	Local Government Association
LV	Low Voltage
MW	Mega-Watts
NEM	National Electricity Market
opex	Operating Expenditure
pa	Per annum
Proposal	2020-25 Regulatory Proposal
RAB	Regulated Asset Base
repex	Replacement Expenditure
SCS	Standard Control Services
ToU	Time of Use
TSS	Tariff Structure Statement
USAIDI	Unplanned System Average Interruption Duration Index
VPP	'Virtual Power Plant'

At SA Power Networks, we:

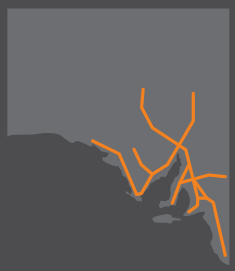
Deliver power to 99% of South Australia's population



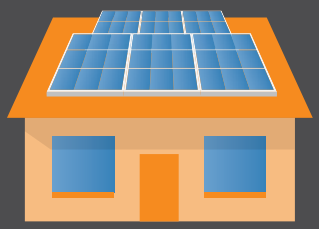
Supply 860,000 homes and businesses



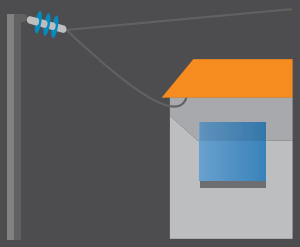
Operate the oldest network in the National Electricity Market



Provide network coverage over **178,000km²**



Connect the most rooftop solar per capita in the National Electricity Market



Enable 25,000 new or altered connections each year

Read more than 1 million meters and provide data to retailers

Maintain 230,000 street lights for councils and South Australian Government

Foreword

Rob Stobbe
Chief Executive Officer

Our Regulatory Proposal sets out our plans and the forecast costs of delivering electricity distribution services in South Australia over the 2020-25 period, and this document outlines its key elements. It's about meeting our genuine commitment to customers and our community as the long-term custodians of key State infrastructure that supports all aspects of daily life.

That commitment is reflected in our industry-leading efficiency and safety; excellent reliability performance; and the prudent way we have managed and maintained the network to keep our charges down over many years.

Notwithstanding our performance to date, we understand our customers have experienced increases in their total electricity bills over the past decade due to significant increases in generation and retail costs. We are well aware of the need for us to continue to do our part to ensure electricity is affordable for all.

Our Proposal follows extensive engagement with customers and stakeholders, who gave us a clear message – they want us to minimise our charges; maintain electricity supply reliability and safety across South Australia; and be responsible in preparing for the future.

Our Proposal seeks to balance these customer expectations with the very significant challenges we have today in managing the electricity distribution network on behalf of South Australians.

While seeking to meet our service obligations, we are facing greater cost pressures as our network ages, and we are dealing with the impact of increasing weather volatility and bushfire risk. At the same time, how customers source electricity and use our network is changing, and we must ensure we can support and accommodate the new services that customers are seeking both now and into the future.

Drawing on informed customer and stakeholder input, and our own experience and perspectives in operating the network, has helped us to strike what we think is the right balance between these competing priorities, to ensure fairness for customers both now and in the future. Striking that balance has required us to make some difficult decisions including adjusting and deferring some work plans.

Our Proposal means that during 2020-25 we will deliver further reductions in our charges while we continue to meet all our regulatory obligations for safety, supply reliability and customer service outcomes. We will also deliver targeted improvements for some customers and be in a position to meet increasing customer demand for new and different services.

I am grateful for the time and contributions made by our customer representatives and stakeholders who have helped us to develop our Proposal, and I look forward to your ongoing feedback.

You will find more information on how to provide your feedback at the end of this document.

Rob Stobbe
Chief Executive Officer

Contents

Our 2020-25 Regulatory Proposal:

Meets all obligations for safety, reliability and customer service

- ✓ delivers targeted improvements for some customers
- ✓ adapts the network for changing customer choices

Reduces electricity prices

8% fall in average distribution charges from 1 July 2020, with further decreases in subsequent years

Saves customers

$40 & $111

annual customer bills will be lower from 1 July 2020 by $40 for the average residential customer and $111 for small to medium businesses

Holds revenue stable*

- at $3,915m compared with the 2015-20 period of $3,909 million

Capital expenditure stable

- at $1,741 million compared with $1,728 million in 2015-20

Regulated asset base stable

- rising only 1% from $4,418 million at 1 July 2020 to $4,478 million at 30 June 2025

Operating expenditure increase

- **13%** due to step changes and growth

Lower rate of return

- **5.43%** compared with **6.13%** during 2015-20

**All figures in $June 2020*

Introduction

SA Power Networks is South Australia's primary electricity distributor, delivering electricity across the State to around 860,000 homes and businesses, and 1.7 million people in South Australia.

At the core of our business is a distribution network that has successfully and efficiently delivered energy to customers from the upstream transmission network and centralised generation sources.

It is a network that has been conservatively and prudently managed with an eye to reliability, safety and cost efficiency. That efficiency has ensured that prices for our services have – when taking account of inflation – been maintained at the same level as they were in 1999.

During both government and private ownership, we have invested conservatively in maintaining and upgrading the electricity distribution network. Today, that means we have a network that is the oldest in Australia. This ageing network is now being confronted by significant change.

The changing landscape

In the past eight to 10 years, the way that South Australians source and share energy has been evolving. The adoption of new technologies, such as rooftop solar panels and batteries, is turning many customers into electricity generators and changing how they utilise our network. It means we now provide the connection for and enable the delivery of a significant portion of the State's electricity generation.

The explosion of digitalisation and self-service in other industries and the emergence of these new technologies is also driving changing customer expectations. Customers are demanding much more from the network than ever before. They want more and different services, such as the ability to export and trade their surplus energy, and these changing demands are placing significant pressure on the stability and reliability of the network.

At the same time there has been an increasing focus on electricity prices driven in South Australia (**SA**) by rapidly rising generation and retail charges – not distribution charges. Quite understandably, customers want to see downward pressure on electricity prices in all parts of the value chain.

Responding to the challenge

Our challenge is to effectively balance the following requirements:

- ensuring our ageing network remains safe, reliable and fit for the future;
- the demand from customers to reduce prices; and
- supporting ongoing customer demand for renewable energy technologies and new services.

It has been the subject of intensive engagement and discussion with our customers and stakeholders over the past two years. We have heard varying views, but there is consistent support for the objectives of holding down prices; maintaining reliability and safety; and investing wisely for the future.

We are focused on efficient investment to maintain reliability and safety; in upgrading ageing network assets; investing in technology to improve our ability to deliver our existing services and to deliver new and different services; as well as ensuring the network will support customers as they make future choices about how they meet their energy needs.

We will do all this while responding to stakeholder and customer concern about electricity price – delivering further reductions in our charges for 2020-25.

Following customer and stakeholder feedback we have reviewed our capital expenditure (**capex**) and operating expenditure (**opex**) programs. These programs are focused on maintaining the existing network rather than building new infrastructure. They will allow us to deliver on our existing requirements and overlay the future services that customers are seeking from the network at the lowest possible cost.

This overview seeks to describe our 2020-25 Regulatory Proposal (**Proposal**) in simple terms and show how we plan to meet the objectives set by the regulatory regime, our customers, stakeholders and shareholders.

Managing for fairness in the long term

We are very aware of our role in managing an essential community asset for the long term. In that context we have been conscious that we should balance the needs and demands of customers now with those of the customers of the future, which includes not passing on today's costs to future generations.

Following further deep consultation with customers and stakeholders, we are proposing an acceleration of the shift to more cost-reflective tariffs, which will reduce the level of cross subsidy amongst customers and ensure customers pay a fairer share of the cost for their use of the network.

The bottom line

If accepted by the Australian Energy Regulator (**AER**), which approves our expenditure and revenue proposals in five-year blocks, we will deliver residential customers an average $40 reduction (nominal) in their distribution charges and small to medium business an average $111 (nominal) reduction from 1 July 2020.

The AER recently made new decisions on the regulated rate of return and taxation allowance, which have contributed to these savings to customers.

Our new cost-reflective tariffs will also give customers who are able to, the opportunity to make savings by modifying their energy use.

Ultimately, how changes in our tariffs are reflected in customer bills will depend on how and whether they are passed on by electricity retailers.

In the meantime, we look forward to feedback from customers and stakeholders on this Proposal.

Section 1: Responding to the challenges ahead

In brief

- Although we make up less than 30% of the typical average electricity bill, we are committed to ensuring that our customers continue to get value for money from the services we provide.
- Our network is one of the most efficient in the country and has been for many years. This means we have to work harder to find further improvements, particularly when:
  - parts of the network need updating to minimise the risk of blackouts and other reliability or safety issues;
  - some of our rural and remote customers experience significantly worse reliability than others, which customers have asked us to address; and
  - new technologies, customer demands and deteriorating weather patterns are making us think about how we operate our ageing network and prepare for the future without overcommitting resources to short term solutions.
- We seek to strike a balance across the diverse needs of our customers by constraining our expenditure to put downward pressure on electricity prices, while still meeting all our legislated and regulatory obligations and maintaining good customer service levels.
- Our Proposal has a long-term focus: while mindful of current affordability concerns, we also do not want to impose additional cost on future generations. It also acknowledges and addresses new and emerging challenges faced from transitioning the oldest network in the National Electricity Market (**NEM**) to the new energy future.

Section 1: Responding to the challenges ahead

In framing our Proposal, we have considered a range of challenges facing our industry and distribution networks in particular. We have engaged broadly with customers and stakeholders to ensure we understand their perspectives.

This extensive engagement program commenced early in 2017 and included customer surveys, workshops and focus group research to first identify what was important to customers.

In 2018 we consulted in-depth with customers and stakeholders on the detail of our preliminary expenditure proposals to make sure that our customers are at the centre of our plans.

Throughout our engagement, our customers reinforced the importance of:

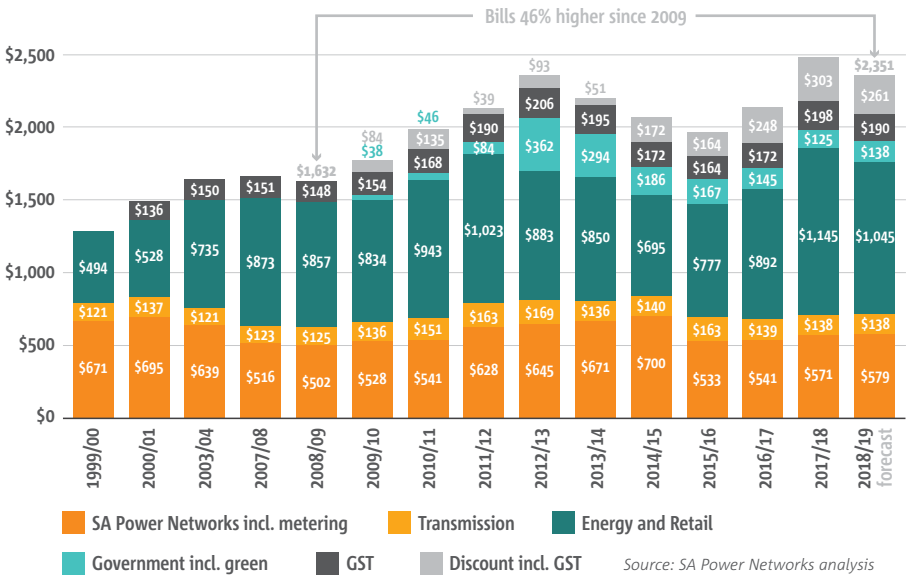
- keeping prices down;
- maintaining a safe and reliable network; and
- prudently transitioning to the new energy future.

The reality is that in meeting these objectives there are a number of competing challenges and there are no easy or simple answers. This section seeks to outline these challenges and our approach to ensuring a balanced response.

Rising energy costs are a key concern for customers

Our customers are very concerned about electricity prices and understandably so. The total cost of electricity supply in South Australia has increased in real terms over the last decade by 44%. See Figure 1.1.

Figure 1.1: Average SA residential electricity bills ($June 2020)



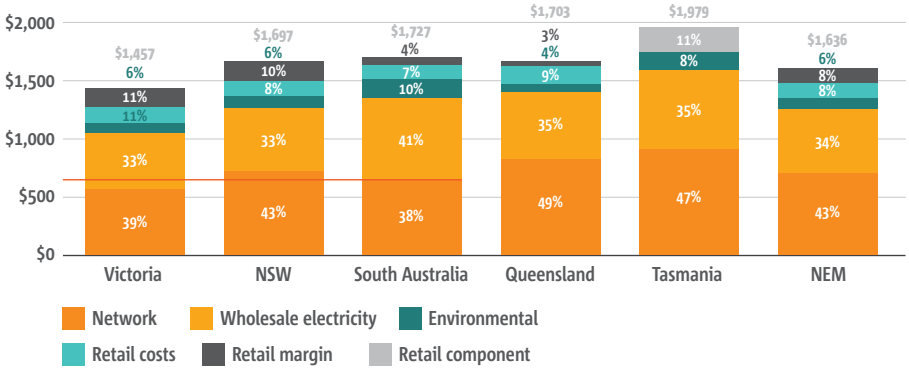
Source: SA Power Networks analysis

However, as shown in Figure 1.1 our network prices have tracked in line with CPI since 1999. The large real increase in overall bills is due to other components of the energy supply chain increasing well above CPI as recently noted by the Australian Competition and Consumer Commission (**ACCC**)[1]:

> *We note that the primary drivers of cost increases in South Australia have been wholesale costs and environmental costs. These components increased average bills by $171 and $158 respectively from 2007–08 to 2017–18.*

The ACCC report also showed that the South Australian network component of residential customer bills (including both transmission and distribution charges) is the second-lowest in the National Electricity Market. See Fig 1.2 below.

Figure 1.2: Average residential bills by state, 2017-18 $ per customer, real $2016-17, excluding GST



Source: ACCC, Restoring electricity affordability and Australia's competitive advantage, Retail Electricity Pricing Inquiry – Final Report, June 2018 p8

1 *ACCC, Restoring electricity affordability and Australia's competitive advantage, June 2018, Page 15*

Although SA Power Networks' charges make up less than 30% of the typical average residential electricity bill, we recognise we need to do our part to ensure that distribution charges are no more than they need to be and that our customers continue to get value for money from the services we provide them.

The efficiency challenge

Customers, stakeholders and regulators are continually looking for improved efficiency from service providers. We are proud of the fact that we have been delivering on this requirement for many years and welcome the most recent AER benchmarking report[2], which again confirms we are (and have been since 2006) the most efficient distributor in the NEM on a State-by-State basis.

A key component driving network costs for customers of some Australian distribution businesses, has been the growth in the regulated asset base (**RAB**).

However as recently recognised by the Grattan Institute[3] and the ACCC[4], we have not over invested in our network. In fact, they recommended that the governments of Queensland, New South Wales and Tasmania should take immediate steps to remedy the past over-investment of their network businesses to improve electricity affordability for their customers.

In July 2017, the Australian Energy Market Commission (**AEMC**) also noted that we have had the lowest RAB growth over the last decade as shown in Figure 1.3 below:[5]

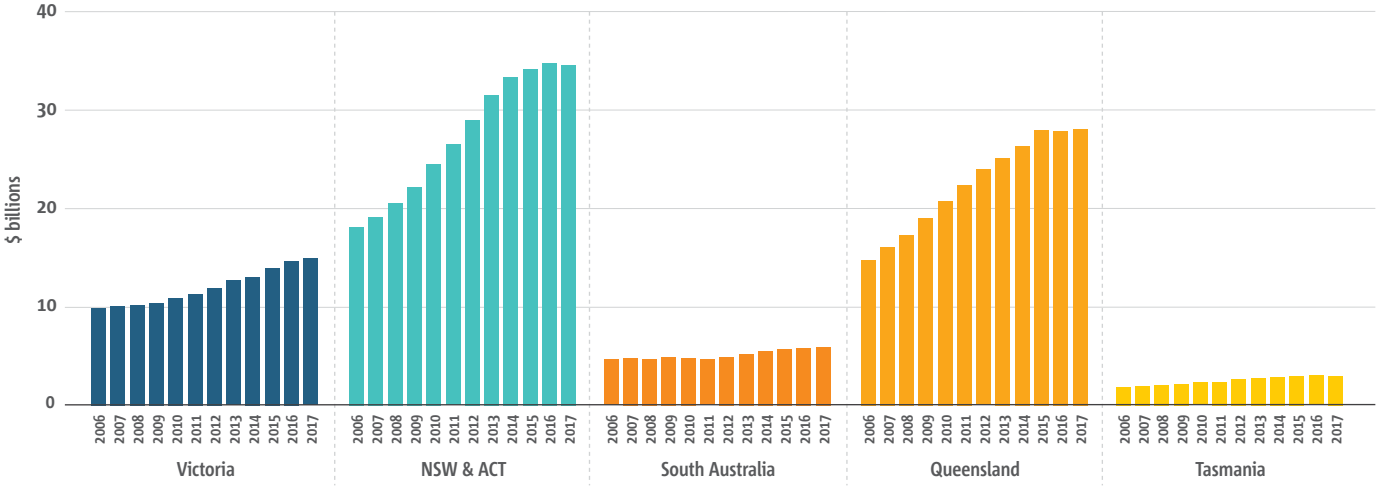
> *First, while historical changes in reliability standards have certainly played a role in increasing RAB values, large cost increases driven by RAB growth are occurring in all DNSPs across all jurisdictions, not just New South Wales and Queensland (except South Australia).*

Our challenge is to find further savings and pass these on to customers while making sure we continue to meet reliability and safety requirements and prepare for the future with the oldest asset base in the NEM.

We will continue to focus on opportunities to improve efficiency in everything we do and we will keep a check on growth in our RAB, which has positive benefits for customers now and in the future.

With the capex contained in our Proposal, over the 2020-25 period our RAB will only grow by 1% in real terms.

Figure 1.3: Regulatory asset base from 2006 to 2017, by NEM region, real $2016-17



Source: ACCC, Restoring electricity affordability and Australia's competitive advantage. June 2018 Page IX

2 *AER, Annual Benchmarking Report – Electricity distribution network service providers, November 2018*

3 *Grattan Institute, Down to the Wire: A sustainable electricity network for Australia, Technical, Supplement, March 2018, page 4*

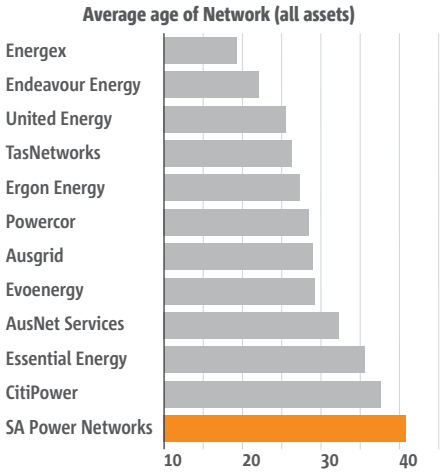
4 *ACCC, Restoring electricity affordability and Australia's competitive advantage, Retail Electricity Pricing Inquiry – Final Report, June 2018, recommendation 11*

5 *AEMC, 2017 Report, Electricity Network Economic Regulatory Framework Review, 18 July 2017, page 55*

Our network is ageing

Our electricity distribution network is the oldest in the NEM, being largely built in the 1950s to 1970s. Figure 1.4 compares the average age of all distribution networks in the NEM.

Figure 1.4: Comparison of network ages in the NEM[6]



The ageing nature of our network reflects the very positive efforts over many years to ensure we safely get everything we can out of our assets before they are updated or replaced.

Increasingly, however, we are finding more parts of the network are reaching the end of their working life. This means we are under increasing pressure to invest sufficiently in the network now to maintain service levels and safety. If we do not, there is a very real risk that the network will deteriorate rapidly, and require higher expenditure in the future.

Over recent years we have developed industry leading capabilities and systems to manage our assets more efficiently, utilising innovative risk-based approaches. We have also determined the sustainable levels of expenditure required to keep the network operating safely and reliably. This has been enabled by the collection of more detailed asset information and condition data underpinned by new IT tools and systems. The largest single component, 38%, of our proposed 2020-25 capital program is expenditure on replacing and updating our ageing network assets so they can continue to provide safe and reliable services to the current generation of customers (this is known as replacement expenditure, or **repex**).

While customers and stakeholders have said it is important to keep prices down, they have also said it is important that we maintain our network assets in an acceptable condition and do not leave a cost burden to future generations.

We are confident that our proposed repex over 2020-25 appropriately balances these competing objectives – it maintains minimum safety and service levels for our current customers without passing additional costs onto future customers.

Customers and technology are driving changes

Our customers want lower cost and more efficient energy solutions and are looking to source their electricity from renewable energy options.

As we begin 2019, one in four customers in South Australia now has their own rooftop solar generation. Taken together, they can generate 1,000 mega-watts (**MW**) which is more energy than any other single generator in the State. Solar capacity continues to grow strongly and, by 2024, the Australian Energy Market Operator (**AEMO**) is forecasting that there will be enough installed rooftop solar to supply the entire energy needs of the State during low demand periods[7].

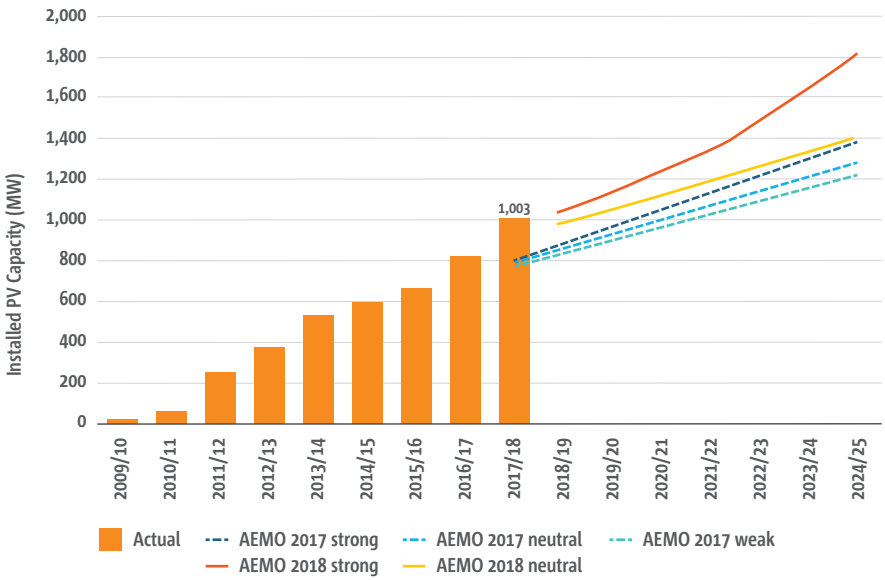
In addition, the market for residential battery storage is accelerating. Retailers are rolling out 'virtual power plant' (**VPP**) projects and, more significantly, 2018 saw the launch of two major State Government VPP programs that could see 90,000 new batteries with up to 400 MW of controllable storage connected to the distribution network in the next few years.

All these new energy sources are being connected to the distribution network and are commonly referred to as Distributed Energy Resources (**DER**). Figure 1.4 illustrates AEMO's most recent forecast for solar capacity under 'weak', 'neutral' and 'strong' growth scenarios. It also shows that actual uptake of solar in South Australia has greatly exceeded AEMO's previous forecasts.

6 *Analysis of published data from AER, Electricity distribution network service provider performance data 2006-2017, 5 November 2018*

7 *AEMO 2018 Electricity Statement of Opportunities (ESOO), August 2018. This supersedes the March 2018 forecast referenced in our 2020-25 Draft Plan which forecast net zero demand occurring later in 2026 (Neutral, 90% POE)*

Figure 1.5: Installed solar capacity and future forecasts (AEMO[8])



Currently, the distribution network only has a finite capacity and cannot accommodate the vast amount of solar systems and batteries forecast in Figure 1.5. As recently noted by the AEMC:[9]

> *Increasing penetration of distributed energy resources (DER) on the grid will need to be managed to avoid network and system security issues.*

Further, the AEMC noted that:[10]

> *AEMO has also identified the forecast uptake of DER in South Australia will pose challenges over the next decade to system security during "emergency conditions" (bushfires, severe weather, network outages), when flows on the network must be reduced to remain secure. Markets are also evolving rapidly and will bring increasing amounts of active DER onto the grid which, if unmanaged, may exceed network operation limits and also bring challenges at a system level. Active DER will need to be managed to avoid these issues.*

Customers have told us that it is important that we continue to allow them to make their choices about new technologies. Our network will be key to enabling customers to access more efficient energy solutions and services, and it must be able to deal with the system impacts of DER. Customers and stakeholders have also made it clear that in preparing for the future we must allow for uncertainty and we should not over-commit our resources. Our Proposal ensures a sensible and prudent approach to managing this challenge.

8 *Sources: AEMO Insights South Australia 2017 and AEMO Integrated System Plan 2018*

9 *AEMC, Economic Regulatory Framework Review Promoting Efficient Investment in the Grid of the Future, 26 July 2018, page 71*

10 *Ibid, page 72*

Balancing competing objectives

Historically, we have balanced the need to keep prices down while maintaining a safe and reliable network. Now we must also balance those two objectives with a new third objective – prudently transitioning to the new energy future.

Figure 1.6 summarises key customer expectations and the network challenges we are facing over the 2020-25 period.

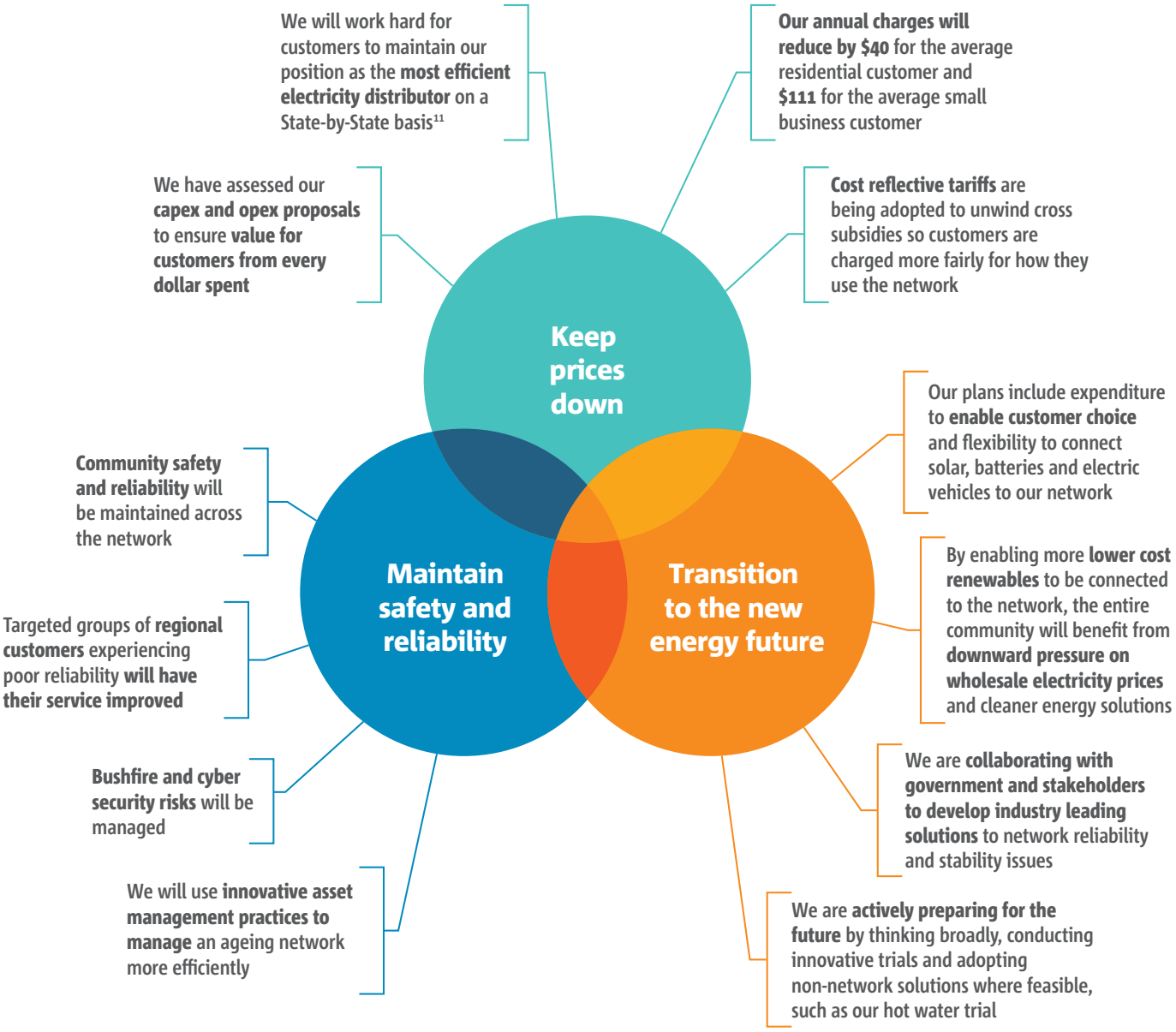
Figure 1.6: Customer expectations and network challenges

Our proposed response

The three key objectives clearly compete with one another: it costs to deliver service outcomes, maintain safety and prepare an ageing network for the future. Through our extensive and ongoing consultation, we gave our customers and stakeholders a central role in influencing how we could achieve a balance between these competing objectives. We have also applied our own experience and perspectives, to balance the level of service we offer with customer affordability concerns.

Figure 1.7 demonstrates how conversations with our customers and stakeholders influenced the way we have approached achieving balanced outcomes for the three objectives that make up our Proposal.

Figure 1.7: Delivering balanced outcomes for customers



11 *Efficiency on a State-by-State basis (rather than network-by-network) is relevant because unlike in other networks we cover the entire state, from the CBD to urban and rural networks*

Section 2: Customer engagement

In brief

- We have engaged extensively with our customers and stakeholders on our plans for the 2020-25 period, and this engagement will continue.
- The breadth of our engagement program has helped to ensure that we understand, and have given appropriate consideration to, the diverse range of views of our customers and stakeholders.
- There is general agreement from our customers and stakeholders that we must strive to achieve three key objectives:
  - keeping prices down;
  - maintaining a safe and reliable network; and
  - prudently transitioning to the new energy future.
- We expect – and welcome – continued debate on aspects of our Proposal, given the diversity of stakeholder views.


LARGS PIER
DIXONS
GRINDERS
COFFEE
SINCE '62
2 FOR 1 COCKTAILS
Find us on

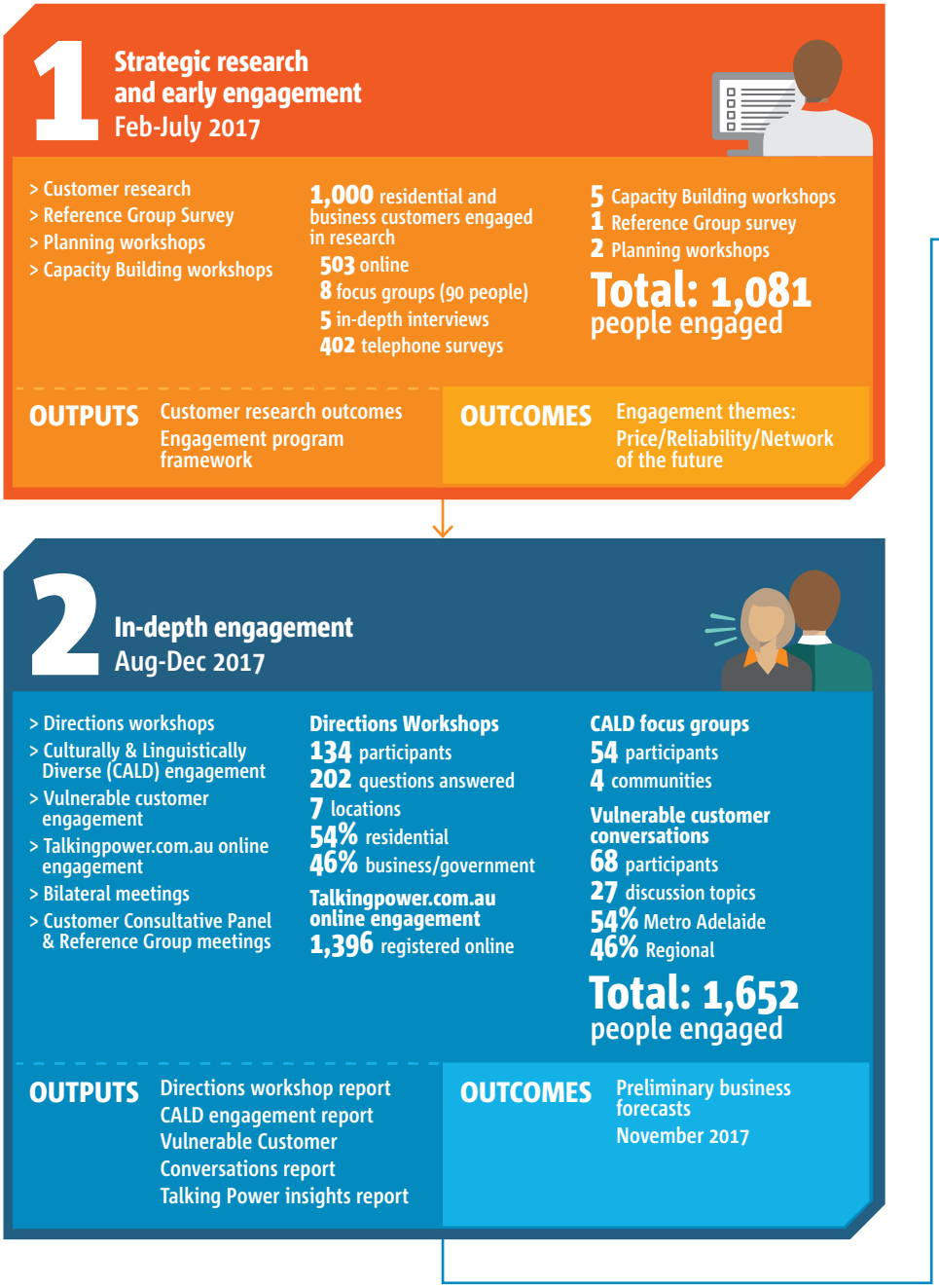
Section 2: Customer engagement

Ensuring our customers are at the heart of our business starts with good engagement.

We have been talking with customers and stakeholders for the two years leading up to submitting this Proposal. Through interviews, workshops, focus groups, meetings, online interactions, drop-in sessions, research, the establishment of targeted working groups, and the release in August 2018 of our 2020-25 Draft Plan[12], we have provided a broad range of opportunities for customers and stakeholders from across South Australia to provide their feedback and help shape our future plans. These activities are outlined in Figure 2.1, our customer and stakeholder engagement journey.

Most importantly, we have operated under a guiding principle of 'no surprises' and have engaged openly with our customers, stakeholders and regulators about the key components of this Proposal. We greatly appreciate the time and efforts of our customers and stakeholders, including our reference groups, the AER's Consumer Challenge Panel (**CCP14**), and the AER, for their involvement and feedback in developing this 2020-25 Proposal.

Figure 2.1: Our customer and stakeholder engagement journey



12 *2020-2025 Draft Plan is available at talkingpower.com.au*

3 Stage 1: Draft Plan development
Jan-Aug 2018

> Deep dive workshops
> Customer Consultative Panel & Reference Group meetings
> Talkingpower.com.au online engagement
> Bilateral meetings

10 x Deep dive workshops
Tariff Structure Statement
Levels of service
Capital Expenditure x 2
Operating Expenditure
Future Networks x 3
Public Lighting
Information Technology

Distributed Energy Leaders forum
50 participants

Total: 1,535
people engaged

OUTPUTS Deep Dive Workshop reports

OUTCOMES 2020-2025 Draft Plan August 2018

3 Stage 2: Draft Plan consultation
Aug-Sept 2018

> Draft Plan consultation
> Customer Consultative Panel & Reference Group meetings
> Talkingpower.com.au online engagement
> Bilateral meetings

Draft Plan launch event
34 participants
13 Drop in sessions
106 participants
6 regional
2 metro
5 internal
227 copies of Draft Plan downloaded from talkingpower.com.au

Direct mail
574 copies of Draft Plan distributed
32 submissions received

Total: 1,403
people engaged

OUTPUTS 2020-25 Draft Plan feedback

OUTCOMES Feedback influenced 2020-25 Regulatory Proposal

4 Regulatory Proposal development
Oct 2018-Jan 2019

> Targeted engagement
> Bilateral meetings
> Talkingpower.com.au online engagement
> Customer Consultative Panel & Reference Group meetings

Public Lighting workshops
Formation of joint LGA/SA Power Networks Public Lighting Working Group
23 participants

Network business forum
47 participants

Customer research on solar preferences
1,004 residential customers

Total: 2,338
people engaged

OUTPUTS Customer research report
Working Group and forum delivered

OUTCOMES 2020-25 Regulatory Proposal January 2019

ONGOING ENGAGEMENT

Our engagement program

At a glance the customer and stakeholder engagement to inform our 2020-25 Proposal involved:

5,437 individual participants

127 engagement activities

40 Reference group meetings

15 locations across Australia

20 newsletters

14,051 Talking Power site visits and counting

32 submissions on 2020-2025 Draft Plan

What our customers value

Our extensive engagement has provided rich and, at times, diverse feedback. However, through all activities and across all areas of the State, customers and stakeholders have consistently told us that there are three things that really matter to them. Specifically, they talked about:

Keeping prices down

While our charges make up less than 30% of the typical average residential electricity bill, SA Power Networks has a role to play in ensuring electricity remains affordable. Price increases in other parts of the bill (such as wholesale and retail) are hurting customers, particularly members of our community who are most vulnerable, as well as small to medium sized businesses. This is the key concern for customers.

A safe and reliable network

Reliable electricity remains a high priority for our customers, particularly business customers. In several regional areas, customers (and not just those affected) are seeking improvements to local reliability. It is important that we manage and maintain the network well now, to ensure reliability is not compromised into the future.

Reliability has two major facets – State-wide reliability, which customers and the Essential Services Commission of South Australia (**ESCoSA**) say is appropriate, and localised reliability where we and customers agree there is a need for a targeted program to improve reliability for our customers connected to low reliability feeders. This targeted improvement will not noticeably affect State-wide reliability.[13]

Keeping the community safe from bushfires, storms and cyber threats is also important to customers.

Transitioning to the new energy future

SA Power Networks must support customers in their desire to continue the uptake of solar, batteries and other new technologies, and take responsibility for transitioning the network to support a decentralised and decarbonised energy system that unlocks greater value for the community.

How customer feedback shaped our Regulatory Proposal

While there is overall consistency in what customers value from the network, as to be expected, there are some differences between the specific priorities and concerns of different customer and stakeholder groups. Our job is to consider all the feedback and aim to strike the right balance between these views.

Detailed in Table 2.1 is the specific feedback that we heard from customers and stakeholders, and how it has helped shape our Proposal.

13 *A low reliability feeder is defined by ESCoSA as an individual feeder with USAIDI performance approximately twice as high as the USAIDI target for that feeder class for two consecutive financial years*

Table 2.1 Customer and stakeholder feedback and our response

What we heard	Our response
Keeping prices down	
Ongoing electricity bill increases are challenging for customers, particularly vulnerable customers and small business	Our Proposal will reduce customers' bills from 1 July 2020 — a $40 decrease for the average residential customer and a $111 reduction for a typical small to medium sized business
Customers want savings in their pockets upfront, however they also want to avoid any future price rises that could cause 'bill shock'	We have deviated slightly from the AER's standard approach to projecting our revenue path for 2020-25, which delivers a bigger reduction in the first year of the period but results in price increases above inflation in following years. Our proposed approach means the reduction in the first year isn't as significant, but delivers further reductions in the following years, thereby minimising the impact for customers
Make affordability a higher priority – ensure not a dollar more than necessary is spent	Capex has been further reduced by $109 million since the Draft Plan, taking the total capex reduction to $199 million since sharing preliminary forecasts in deep dive workshops in early 2018. Opex had also reduced by $6 million (following an earlier $49 million reduction before the 2020-2025 Draft Plan), however this has now been offset by an efficient capex/opex step change to address the intergenerational equity issues highlighted in the AER's Taxation decision. Our prudent approach is embedded in how we do business, for example: › Our approach to repex which involves managing risk by focusing on work that delivers the most value for customers, based on the likelihood and impact of consequence › Our approach of actively managing network constraints rather than building new assets to increase capacity › Moving Information Technology (IT) services away from in-house assets to cloud locations as paid services
Refine programs so proposed expenditure is in line with current period expenditure	Capex reductions have been achieved by revising the scope of works for some programs, extending the timeframes of some programs, and removing some programs altogether › Capex programs are now largely aligned to current period expenditure
Actively look for efficiencies and innovate to stay at the efficient frontier and deliver price relief Avoid or defer expenditure where possible but do not under-invest now and pass costs on to future generations If expenditure is required, adopt a prioritised, staged approach to any programs	We have taken a prudent approach to all expenditure forecasts: › Expenditure programs have only been proposed when value exceeds cost › Efficient deferrals and refurbishment of assets is undertaken when possible. For example, our improved value-based approach is enabling efficient deferral of ~$200 million of asset replacement, and the new substation originally planned for Gawler East has been deferred into a future period › We have a staged, risk-based approach to capital programs, targeting areas of greatest need and/or value › Prudent capex in our Proposal results in a 1% growth in the RAB over 2020-25
Absorb increased costs where possible	We removed step changes associated with more advanced customer engagement technologies and a new billing system. We also reduced the size of the step change to support our new Low Voltage (LV) Management Strategy by moving from a full model with 100% network coverage to a template approach, which is less accurate but more cost effective
Apply an additional productivity growth factor to reduce costs	We will continue to seek opportunities to reduce the cost of delivering services and meeting our obligations, which the current regulatory framework already incentivises us to do
Labour escalations should be aligned with the South Australian average of low wages growth	Labour escalations are independently forecast by economic consultants and are consistent with the utilities sector
IT expenditure is high, a full cost-benefit analysis must be undertaken, and the value of IT investment needs to be justified from the perspective of the customer	All our IT programs are supported by detailed cost-benefit analyses and business cases that explore alternative options. Value has been characterised in terms of customer benefit, for example benefits are framed in terms of what it means for our ongoing ability to service customers

What we heard	Our response
Keeping prices down	
Continue the roll-out of more efficient LED street lighting technology for public lighting customers	We are enabling the roll-out of LED technology and providing price certainty for public lighting customers through ongoing engagement with Councils, Local Government Association and the Department of Planning, Transport and Infrastructure
Provide price certainty for public lighting customers	
Ensure new cost-reflective tariffs address cross-subsidy issues between solar and non-solar customers – don't forget the 'have nots'	We will introduce a new 'time of use' tariff as our default residential tariff, and a 'prosumer' tariff for solar and battery customers. Early modelling of customer impacts indicates that non-solar customers are better off under the default time of use tariff. More details are available in Section 7
A safe and reliable network	
Continued reliability of the network is a high priority	Prudent expenditure plans are proposed to maintain current reliability and safety levels and meet service standards
Improving reliability for some parts of the network (eg Eyre Peninsula, Adelaide Hills) is important to customers. This is also supported by councils and Business SA	› We have a targeted program to improve reliability to customers connected to low reliability feeders › We are continuing a targeted program to improve the resilience of storm-prone network areas (note the scope and costs of these targeted programs have been reduced following stakeholder feedback on the 2020-25 Draft Plan to address affordability concerns)
Regular asset inspection, maintenance and repair or replacement is important, and customers want us to continue to find efficiencies	› In addition to our value-based approach to asset management (which focuses on the risk and value analysis of comprehensive asset data), we will continue to look for more innovative ways to manage our assets, such as the use of drones and other new technologies › We are proposing an asset replacement program to continue at current sustainable levels
There is logic in our risk-based approach to asset management — but we need to avoid 'boom and bust' cycles of expenditure	
Customers expect SA Power Networks to operate safely, and balance safety, risk and affordability when managing the network	Ongoing focus on safety in our work practices and innovation in our risk-based asset management approach to ensure we continue to deliver value for customers
Bushfire safety is important, not only to those in bushfire risk areas, but to most customers	We are continuing our prudent bushfire risk mitigation plan to reduce the risk of our network starting fires (note the scope and cost of this program has been reduced following stakeholder feedback on the 2020-25 Draft Plan to address affordability concerns)
Customers value accurate, timely and tailored information about power outages	We will continue to improve our capability (through ongoing IT system enhancements) to provide customers with accurate and timely information
Managing the risk of cyber security is important to customers	Prudent cyber security protections for customer and business information and network integrity are proposed

What we heard	Our response
Transitioning to the new energy future	
Customers, both with and without solar PV, support the ongoing uptake of rooftop solar and new technologies like home batteries and electric vehicles Enable more renewable energy on the network – but not at any cost	› We're proposing targeted investment in new systems to monitor and manage our low voltage network more actively, and to offer the option of variable, rather than fixed, export limits for customers with solar and other embedded generation › This will enable us to make available more of the existing asset capacity for solar PV exports, avoiding expensive network asset upgrades. It also enables greater flexibility so we can adapt to future change › This approach will vary dynamically based on when and where the constraints arise
In a time of change when technology is evolving rapidly, avoid large expenditure on items that might become redundant Our plans should allow for a range of future scenarios – not lock us in to one version of the future Actively pursue third-party non-network solutions and demand management to avoid capital expenditure	› Continued refinement of our industry-leading Future Network Strategy and related projects[14], pilots and trials. This integrated, measured and staged strategy focuses on market-based solutions, including purchasing and using available data from smart meters and third-party providers to reduce expenditure on grid-side monitoring devices › We are actively testing the market for demand management opportunities. So far we have identified around $28 million of capital projects that could be candidates for non-network solutions › Our approach of sending export limits is adaptable to whoever is receiving the message. DER services will continue to evolve but our approach does not 'pick a winner' in terms of how the market will evolve
Tariffs should be considered as a potential solution to network problems, along with demand management and other non-network initiatives	› Our proposed tariffs are complementary to our Future Network Strategy, by encouraging customers to shift load away from the morning and afternoon peaks to soak-up surplus solar energy in the middle of the day, therefore deferring or avoiding network investment to cope with excess solar energy › Our planned hot water demand management project and hot water tariff trial are also complementary
Work closely with industry to ensure national alignment Do not forget non-solar and vulnerable customers The AER's Consumer Challenge Panel (CCP14) provided advice to the AER on our approach to addressing the challenges of high penetration of solar and embedded generation on our network. CCP14 asked that we share more details of our network capacity modelling, and challenged us to seek least-cost solutions	› Detailed customer research across all segments, including non-solar and vulnerable customer groups, as well as extensive and ongoing engagement with industry and other distribution networks, to ensure our plans are aligned with customer expectations and broader industry direction. All feedback, both qualitative and quantitative, supports our proposed approach of enabling more distributed energy resources through active capacity management and variable export limits › By enabling more lower cost renewables to be connected to the network, the entire community will benefit from downward pressure on wholesale electricity prices and cleaner energy solutions while also avoiding more costly increases in additional network capacity › Early modelling of customer impacts indicates that non-solar customers are better off under our proposed default 'Time of Use' tariff

During our engagement program we worked closely with ESCoSA and shared our customer feedback relevant to its review of the 2020-25 Service Standard Framework. ESCoSA's research assessed the extent of a customer's willingness to pay for improved reliability levels and this is reflected in its reliability standards[15] for the 2020-25 period.

We also undertook specific engagement on our 2020-25 Tariff Structure Statement (**TSS**), which is discussed in section 7 of this document and Public Lighting, discussed in section 8.

More details about this and the overall engagement program are contained in the Customer and stakeholder engagement report.

14 *Salisbury battery project won the Energy Networks Australia/Energy Consumers Australia Innovation award in 2017*

15 *ESCoSA, SA Power Networks reliability standards review, Final decision January 2019*

Section 3: Keeping prices down

In brief

- Our Proposal provides price reductions for the average residential customer of $40 and $111 for small to medium sized business customers from 1 July 2020, whilst avoiding passing on today's costs to tomorrow's electricity consumers.
- We have made further capex reductions since our Draft Plan was published in August 2018.
- We will continue to refine our industry leading capabilities and systems for managing the network and look for improvements and innovations that help reduce or maintain costs at current levels, while not compromising on service outcomes.
- We have adopted in our Proposal the financial impacts of the recently finalised regulatory decisions on Rate of Return and Taxation allowances.
- We are proposing to move toward more cost-reflective tariffs so that our customers will be charged more fairly for how they use our network.


Florist
EASTER
DAISY
HAHNDORF MARKET
KARLIE

Section 3: Keeping prices down

Electricity pricing understandably was a key issue for customers and stakeholders during consultation on our plans for 2020-25.

As noted earlier, we have held our charges in line with inflation since 1999 and this Proposal provides price reductions to electricity customers over the 2020-25 period.

In response to the desire for us to keep prices down, our Proposal:

- continues our proven prudent approach to investment in the core network assets providing our traditional distribution services – to manage community risk and maintain customer supply reliability;
- proposes only modest investments to:
  - improve reliability to targeted areas of customers connected to low reliability feeders
  - reduce bushfire start risk
  - develop the capabilities to manage and enable customer choices that are driving the transition of our network
  - establish required cyber security protections; and
- outlines how we have absorbed some cost increases and pursue efficiency improvements in all aspects of our operations.

It is important to note that much of the modest additional investment is offset by decreases in expenditure in other areas, such as a reduction of $44 million in customer demand-driven expenditure compared to 2015-20 expenditure.

We have also responded to feedback from our customers on our 2020-2025 Draft Plan that we should 'do more with less' by revising the scope of works of some programs and making further reductions in capex from those included in our 2020-2025 Draft Plan[16]. Our capex category forecasts are now less than, or closely aligned to, current period expenditure. Section 9 provides more details on the changes made since then.

We will exceed the ACCC's expectations

The ACCC recently concluded that residential customers in South Australia should be able to receive on average, a $13 reduction in transmission (ElectraNet) and distribution network (SA Power Networks) costs by 2020-21, see Table 3.1 below.[17] Our Proposal will deliver further reductions. However, the most significant opportunity to reduce electricity costs for South Australians as identified by the ACCC is in wholesale, retail and environmental costs.

Table 3.1 ACCC average annual residential bill savings by 2020-21 by State

Achievable savings ($ per annum)

Region	2017-18 Bill	Networks	Wholesale	Enviro	Retail	Reduction	2020-21 Bill	% Reduction
Victoria	1,457	39	192	34	26	291	1,166	20
NSW	1,697	174	155	43	37	409	1,288	24
South East Queensland	1,703	147	192	18	62	419	1,284	25
South Australia	1,727	13	227	89	42	371	1,356	21
Tasmania	1,979	113	226	75	–	414	1,490	21

Since the ACCC's report, the AER has also made new decisions on the regulated rate of return and taxation allowance, enabling greater savings to customers.

We are absorbing some costs

We have absorbed many costs associated with new and unfunded obligations and activities. In recent years we have absorbed higher operating costs associated with:

- increased Guaranteed Service Level (**GSL**) scheme costs – $24 million in the 2010-15 period;
- implementing new AER regulatory and compliance reporting and auditing requirements – $1 million in the 2010-15 period;
- processing thousands of new rooftop solar inquiries and applications and administering the SA Government solar Feed-in Tariff scheme – $9 million in the 2015-20 period;
- altering our systems and processes to implement metering contestability in 2017 and then to assist retailers to improve their meter installation service levels throughout 2018 – $2 million in the 2015-20 period; and
- implementing new obligations to ring-fence contestable services from our regulated business – $3 million in the 2015-20 period.

It is hard to accurately predict the future in a rapidly changing environment, so there will be some future costs that we have not included in our Proposal that we will have to absorb. In the 2020-25 period, for example, we expect more and larger scale solar connection enquiries and applications, and an acceleration of battery and energy management systems enquiries and applications. Later in the period, we expect an increase in electric vehicle connection enquiries and applications. We also expect more regulatory obligations to emerge that we will be required to implement.

16 *Available at talkingpower.com.au*

17 *ACCC, Restoring electricity affordability and Australia's competitive advantage, June 2018 Page XV*

We remain focused on efficiency

We strive to be efficient in all that we do. We are committed to retaining our standing as the most efficient electricity distributor in the NEM on a State-by-State basis and remaining in the top quartile of virtually all key performance indicators measured by the AER.

This helps keep costs down for customers. In 2020-25 we will continue to ensure we:

- only provide the services our customers value;
- improve our work practices and eliminate waste;
- look for new ways to avoid and defer expenditure where we can;
- adopt new technologies and approaches to reduce total spending; and
- actively explore non-network alternatives to keep the RAB value low.

These are goals that the regulatory framework encourages by providing incentives to achieve ongoing operational efficiencies. The current framework has been serving well in providing competitive pressure as evidenced by our positive long-term performance. We have not reflected the AER's November 2018 draft decision which proposes to reduce the forecast opex of all distributors to account for industry productivity gains prior to these being achieved. We consider that the available evidence does not support these pre-emptive adjustments.

What this means for our customers

Our charges for most of our customers will drop[18], with a nominal average reduction of $40 ($53 real) for residential customers and $111 ($158 real) for small-to-medium sized business customers from 1 July 2020.

Figure 3.1 and Figure 3.2 show annual price outcomes in real terms over time for our average residential and small business customers respectively, and demonstrate how our prices will reduce in real terms over the remaining years of the period.

Figure 3.1: Average SA residential distribution bills (Real $2020)

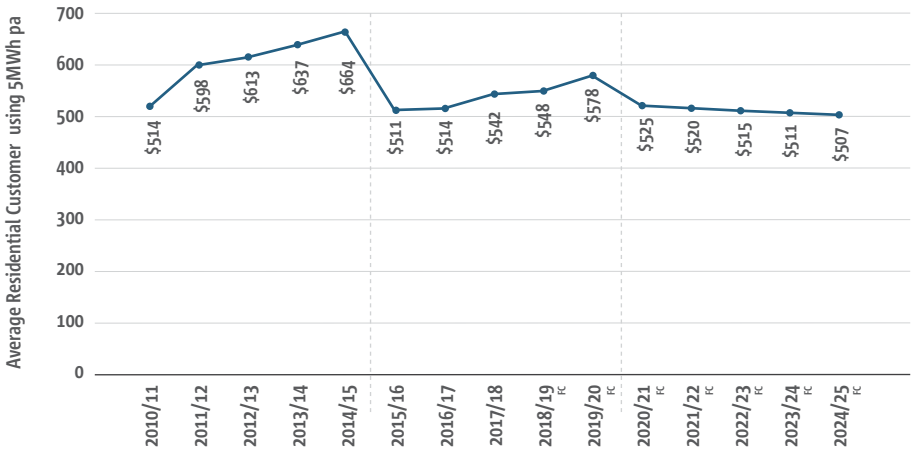
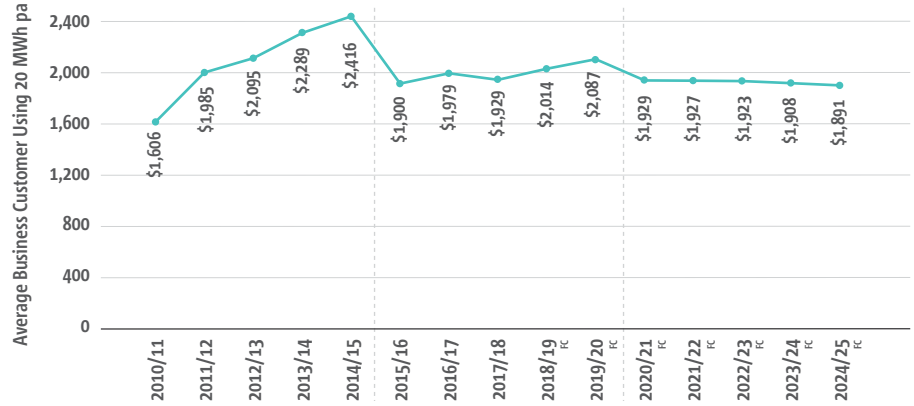


Figure 3.2: Average SA small-medium business distribution bills (Real $2020)



For these charges, the outcomes our customers (and the community) will receive include:

- average (State-wide) reliability will be maintained;
- reliability for the low reliability feeders will be improved;
- bushfire risk in rural areas will be reduced;
- new cyber security measures will be implemented to respond to increasing threats and regulatory obligations and expectations;
- customers will be able to connect more solar, battery and electric vehicle technology to our network, and we hope to rely on customer resources (such as VPPs and electric hot water) to manage network use and minimise network expenditure; and
- we will limit passing on today's costs to tomorrow's electricity customers

18 *Note that our customers' distribution charges are billed to retailers. The end prices charged to customers are ultimately decided by retailers*

Section 4: A safe and reliable network

In brief

- Our Proposal ensures that our customers and the community will continue to get a safe, reliable and secure network and have the flexibility to connect new technologies.
- The service outcomes of our Proposal include:
  - Community safety and reliability will be maintained
  - Pockets of customers experiencing low reliability will have their service improved
  - Bushfire risk in rural areas will be reduced
  - New cyber security measures will be implemented to respond to increasing threats and new obligations
- Aged asset replacement spending will be maintained at current levels to ensure community safety and reliability.

Section 4: A safe and reliable network

Safety, reliability and security are important

We will continue to ensure the safety of our network for our customers and staff and are committed to maintaining reliability service levels for our 860,000 customers.

We are proposing to improve our service to those customers who do not receive service reliability close to average levels. This means that over the 2020-25 period, we are targeting 70,000 of our customers in rural and remote areas (such as the Adelaide Hills and Eyre Peninsula) with improved reliability performance. This will be achieved through improving the resilience of the network to the effects of wind and lighting damage in storm prone areas.

We will continue to actively monitor and maintain the safety of our network and will continue work programs to manage risks to our customers, employees, contractors and the wider community.

We will help mitigate bushfire risk

The effect of bushfires can be catastrophic for our customers. With extreme weather events increasing, we need to manage the risk of our network being involved in fire starts, which are most often due to interaction with wind-blown vegetation from outside the powerline clearance zone.

We plan to responsibly replace outdated network components and install fast-operating safety switches to reduce the risk of a fire starting due to a fault affecting our infrastructure.

We also will continue to invest in our vegetation management program, which is a crucial element in reducing the potential for a fire start, as well as managing reliability for customers. In recent years we have engaged extensively with a range of stakeholders to improve outcomes from our vegetation trimming program. We have also been looking at how we can manage our program more efficiently and have delivered a number of improvements.

Looking ahead, a key focus is ensuring that the vegetation clearance regulations are reviewed and framed in such a way that they will allow us to maintain safety, cut fewer trees, and reduce the overall costs of the program for customers.

We will maintain reliability by updating parts of our ageing network

Given our ageing network, not surprisingly we are now finding more defects on our assets (such as more pole corrosion, faulty switchgear, damaged wires and insulators).

More data on asset defect type and location has enabled us to develop and implement new and innovative asset management approaches. These approaches help us better value the risk presented by individual defects and to address them prudently and more efficiently.

This approach includes looking for non-network solutions where available, undertaking repair or refurbishment (such as pole plating and switchgear reconditioning) where cost effective, and only undertaking more expensive 'new for old' asset replacement where there are no cheaper alternatives.

Notwithstanding these innovations, we needed to increase our repex spend in the 2015-20 period, to ensure we maintain the overall risk profile, or network 'health', at acceptable levels. Our plan for each year in the 2020-25 period is to maintain repex at the current annual (2018/19) level, as this will allow us to sustainably maintain risk at acceptable levels and continue to provide a safe and reliable service to customers.

Our focus is not on building new assets, rather it is about ensuring the assets we have are in the best shape to meet reliability and safety requirements now, and be capable of enhancement when needed, to support the changing needs of customers in the future.

Information systems

Information technology and systems are central to the provision of services to our 860,000 customers and enabling management of a modern State-wide distribution network. For example, IT is vital in communicating with our customers, particularly during severe weather events; it is central to monitoring and operating the network, including assessing the health of assets and their performance; it allows us to manage our business and people; and it is essential in providing data and information for our customers, business, partners, and regulators. IT will also play a critical role in enabling the distributed energy future by allowing more local generators like solar to be connected to the network.

While we acknowledge customer and stakeholder concerns about the level of investment in IT, the reality is that without IT, we simply could not meet customer needs and expectations or manage our business.

Customers and stakeholders have also told us it is important that we maintain our position as the most efficient distributor on a statewide basis. Investment in IT is key to achieving this. In 2020-25 we are proposing to reduce expenditure on IT (compared to 2015-20) whilst meeting evolving customer, network and business needs, and meeting our regulatory and legal obligations.

We also recognise the importance of dealing with the increasing cyber security threat. We have been working with the Australian Cyber Security Centre and the Australian Government Critical Infrastructure Centre to better understand these threats and new legislated requirements, and we will be implementing measures to address these, including bringing services currently provided from cheaper offshore providers back to Australian providers.

Key IT work programs during 2020-25 include:

- completion of the Billing System replacement program;
- increasing cyber security capabilities in line with growing risks and meeting new obligations;
- continuing the Assets and Work Program to support our value-based asset management approach; and
- replacement of the core enterprise business system.

Section 5: Transitioning to the new energy future

In brief

- Customers are rapidly adopting distributed energy resources such as solar panels and battery storage. South Australia leads the nation in the adoption of these new technologies.
- The role of the distribution network is changing and becoming even more critical as it now directly connects a significant portion of the State's generation.
- Customers have told us they value the new services that are enabled by connecting new technologies to our distribution network, however these new technologies are placing strains on our network, which was originally only designed for one-way energy flows.
- We aim to support this customer-driven change, while avoiding costly or unnecessary network upgrades and ensuring our network can maintain two-way flows of energy.
- Our plans will see us manage available network capacity more effectively, and leverage new distributed resources as well as existing resources like electric hot water storage, to avoid or defer traditional network investment.
- This will benefit the entire community by putting downward pressure on wholesale electricity prices, minimise network expenditure and help South Australia transition to cleaner energy solutions.
- We have collaborated extensively with customers, stakeholders, government and industry in developing our plans.

Section 5: Transitioning to the new energy future

The changing role of the distribution network

In 2011 SA Power Networks began a journey to explore what the future and our business would look like in 15 years. The Future Operating Model provided a renewed perspective on what the future world looks like for our customers and our network, and on how our work will change to meet the new challenges and opportunities. We continue to update this document to help guide the strategic choices we make.

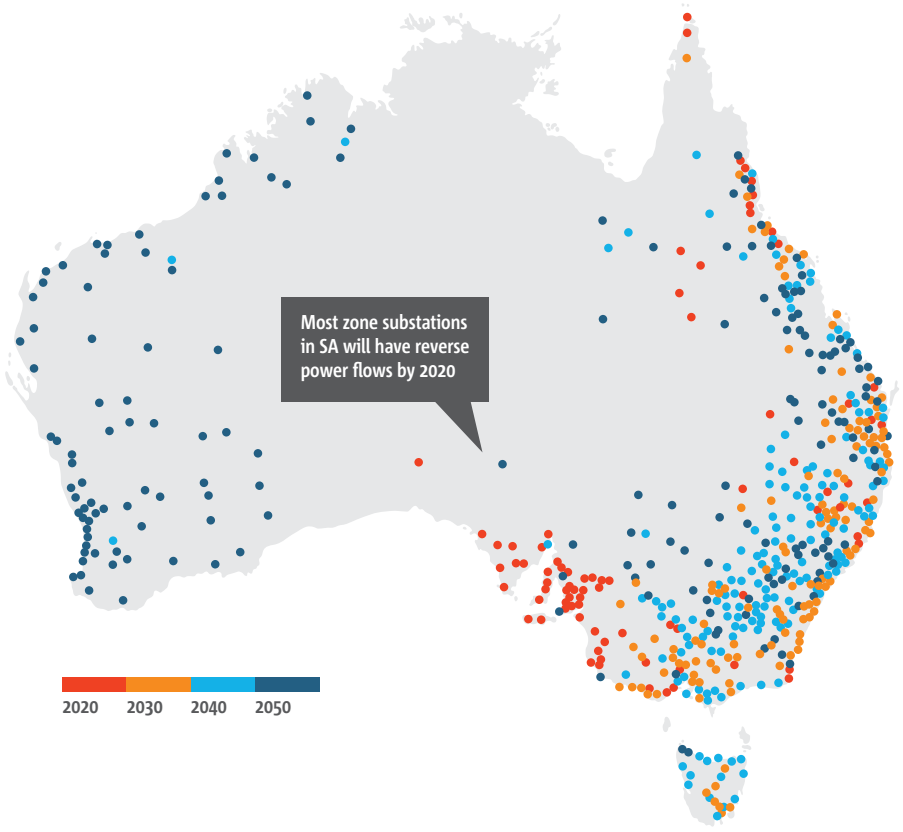
With the rapid increase in the number and total capacity of rooftop solar installations, the role of the distribution network, and the services required from it, have changed. Previously we simply delivered a one-way energy flow, whereas now we are providing a platform for multi-directional energy flows from generation connected to our network. Electricity Networks Australia (**ENA**) and Commonwealth Scientific and Industrial Research Organisation (**CSIRO**) undertook detailed modelling in their 2017 report[19] shown in Figure 5.1 which forecasts that South Australia will lead the country in having to manage reverse power flow from rooftop solar by 2020.

About one in four customers already has solar and now the residential battery storage market is also growing. Individual household batteries are being grouped together under central control to form VPPs. These are expected to play an important role in dynamically balancing supply and demand in the future as the State's energy mix becomes increasingly dominated by intermittent generation sources like solar and wind.

Retailers are currently rolling out smaller-scale VPPs and the SA Government has launched two major schemes that could see 90,000 new batteries with up to 400 MW of controllable storage connected to our network in the coming years.

The distribution network is the critical infrastructure that not only connects this new customer-side technology, but also enables the provision of many new services such as the ability to trade surplus energy or participate in a VPP, which customers have repeatedly told us they value.

Figure 5.1: ENA/CSIRO Reverse power flow from solar adoption



As the energy system becomes more reliant on distributed generation and services provided by VPPs and other flexible demand-side resources, the security and stability of the State's whole energy supply will increasingly depend on the security and reliability of our distribution network. Given the State's reliance on wind and solar generation, in the future these distributed resources also may be required to help manage supply and demand on a wider scale.

By the mid-2020s we also expect electric vehicles (**EVs**) to begin gaining significant market share in South Australia. This will require a new role from the network as it becomes the primary distribution system of electricity for these vehicles.

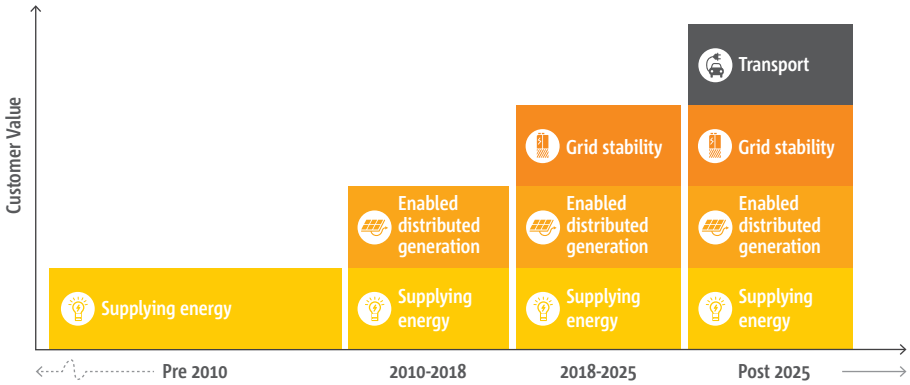
EVs will further increase the bi-directional energy flows on our network, requiring more dynamic load balancing.

As the energy system continues to decentralise and decarbonise, the network will provide the platform for other new sources of value, enabling future peer-to-peer trading and community energy schemes.

A broader role means we can deliver greater value for the community from the State's distribution network assets shown in Figure 5.2. However, to continue to unlock this value while still maintaining security and quality of supply for all customers, we need to ensure that network assets and our operational systems adapt to support these new uses of the network.

19 *CSIRO/ENA Electricity Transformation Roadmap, Final Report April 2017, Page 103*

Figure 5.2: The changing role of the distribution network



What this means for customers

Our distribution network was not designed to transport power in two directions, and every powerline has a finite 'hosting capacity' to accommodate the connection of embedded generators like solar and batteries before technical issues arise.

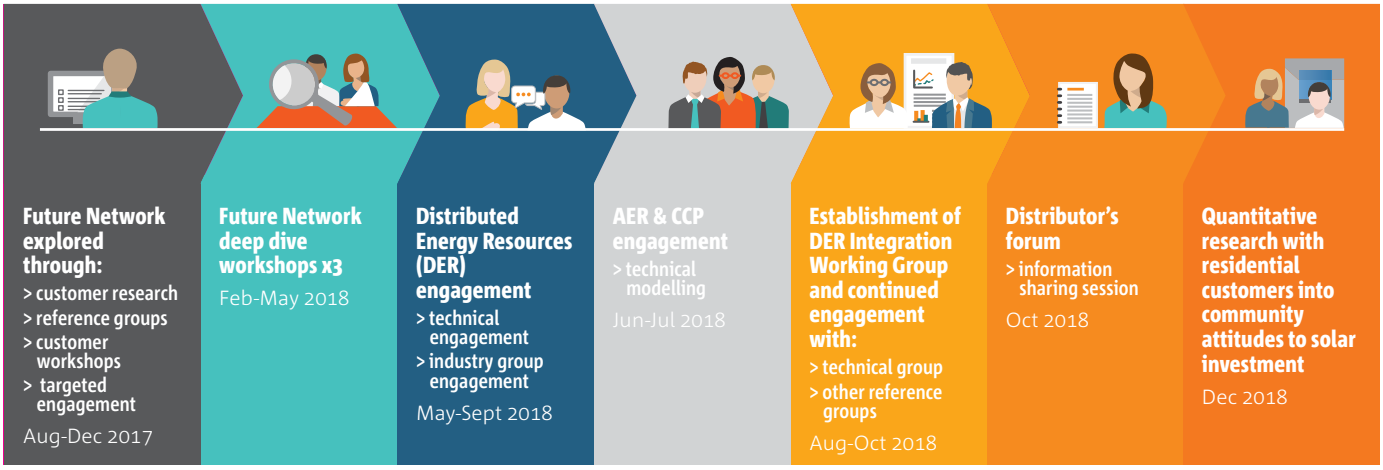
The first issue that normally arises is over-voltage at times of high solar export, and we have observed a sharp increase in the number of customer enquiries for voltage-related issues, particularly on mild, sunny days, as solar output begins to reach hosting capacity limits in some areas of our network.

In areas of very high solar penetration, reverse power flows in the middle of the day can eventually become high enough to overload parts of our network; or push up voltages and trigger customer solar systems to switch off. This also means that other customers on the network can experience high voltages, potentially causing damage to their appliances. VPPs can also cause issues because the simultaneous charging or discharging of multiple batteries in the same area when a VPP is dispatched, can cause a very large swing in power flows in the local network.

As solar, battery storage and EV uptake continues to grow, many areas of the network will reach or exceed their hosting capacity in the 2020-25 period. If we do not respond appropriately, the network will become a bottleneck that limits:

- the ability of customers to connect new DER;
- the rollout of VPPs; and
- the ability of customers and VPPs to participate in the market and contribute to the broader energy system in South Australia.

Figure 5.3: Future Network engagement



A shared vision for the future network

In developing our expenditure proposal for 2020-25 we have engaged widely with customers and community groups, policy makers and other market bodies (Figure 5.3).

The clear feedback from customers is that they expect us to prudently plan for the future to ensure that the distribution network can continue to support the transition to a low-carbon, decentralised energy system. However, customers also recognise that the future is uncertain and technology is evolving rapidly, and do not support large expenditure on items that could quickly become redundant.

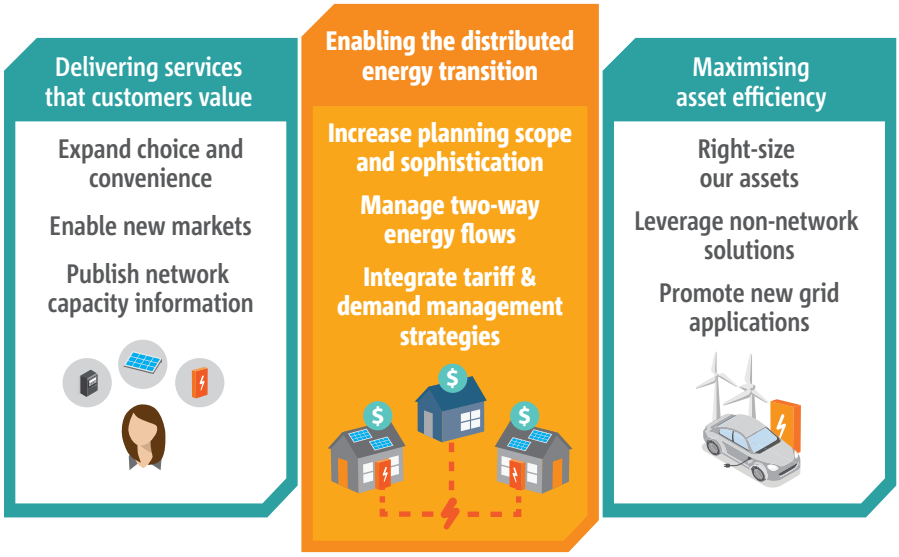
With this in mind, we have developed our Future Network Strategy (Figure 5.4), a comprehensive program of strategic initiatives designed to prudently and efficiently transition our network to support the distributed energy future and maximise value for customers and the community. The strategy aims to:

- meet customers' changing energy needs;
- adapt the network to support a significant and growing component of the State's generation capacity;
- maximise the utilisation of existing network assets and leverage third-party solutions where possible;
- enable new grid applications such as electric vehicles and future energy trading models; and
- distributors taking a more active role in the future in supporting the reliability and security of the national electricity system as more DER is installed on our network.

This strategy complements our asset management, demand management and tariff strategies, which work together to address these challenges.

Under our Future Network Strategy, we already have a number of initiatives in place and have funded these initiatives efficiently through a combination of internal research, funding from external bodies, and strategic partnerships with industry and government.

Figure 5.4: Future Network Strategy



Our Proposal for 2020-25 includes three initiatives to enable us to manage high levels of distributed generation; offer new services to customers; and avoid unnecessary network investment. These initiatives cover:

1. improved visibility of what is happening in the low voltage network;
2. establishing a DER register and supporting processes so we understand where and how much DER is installed on our network; and
3. establishing systems to communicate with small customer systems and aggregators.

Our economic modelling indicates that managing constraints by enabling dynamic export limits provides a better long-term economic outcome for all customers (both with and without DER) than investing in new network capacity or managing DER through fixed export limits, under a wide range of possible future scenarios. This is because it enables DER to continue to connect, export energy and contribute to the energy system as a whole while avoiding the need for expensive network upgrades.

This more dynamic approach to managing network constraints is the approach recommended by the AEMC in its 2018 Economic Regulatory Framework Review, which found that:

> *"a static limit on exports is likely to be a blunt approach to addressing the impact of DER on the network. A more sophisticated approach would be to consider the introduction of dynamic constraints that can limit the amount of energy being exported, as necessitated by changes in network conditions."*[20]

We are proposing capex of $32 million over the 2020-25 period for this work. This level of expenditure reflects customer feedback that we should enable the distributed energy transition, but at a modest cost, and was supported by customers across all segments (including with and without DER, and hardship customers) in a recent survey undertaken on our behalf by Newgate Research[21].

Continual innovation

In addition to the core aspects of our proposal, we will continue to pursue complementary measures to increase network hosting capacity during the 2020-25 period including:

- **Shifting hot water loads.** Overnight storage hot water accounts for up to 800MW of load in South Australia and represents a significant untapped opportunity to 'soak up' excess solar. Following initial trials, we are assessing options to shift some hot water load to the daytime.
- **Substation voltage control.** Recent work in Victoria has shown that actively managing voltage at the substation can be highly effective, but this solution requires monitoring in the LV network that we do not have in South Australia. As we gain greater visibility of our LV network in 2020-25 we will pursue this opportunity.

We will also continue to progress other initiatives on our Future Network roadmap including:

- trials of off-grid (stand-alone) power systems and community micro-grids;
- future options for decommissioning low customer density rural powerlines[22];
- grid-connected battery storage;
- advanced solar forecasting for distribution network planning and operations;
- future models for distribution markets and energy trading; and
- management of electric vehicle charging loads.

Our approach is to fund these programs efficiently through a combination of internal research and development funding, the Demand Management Innovation Allowance (**DMIA**), external funding sources such as the Australian Renewable Energy Agency (**ARENA**), and strategic partnerships with industry and government. Aside from the DMIA, we have included no regulatory allowance in relation to these initiatives in our 2020-25 Proposal.

20 *AEMC, 2018 Final report, Economic regulatory framework review, 26 July 2018, pages x, xi and Section 5*

21 *Community attitudes towards potential solar infrastructure investment, Newgate Research, December 2018*

22 *We have been actively engaging with the AEMC's review of the regulatory frameworks for stand-alone power systems aemc.gov.au/market-reviews-advice/review-regulatory-frameworks-stand-alone-power-systems*

Section 6: 2020-25 Revenue and expenditure

In brief

- Our forecast revenue for the 2020-25 period is $3,915 million, similar in real terms to our allowed revenue in the 2015-20 period.
- Our capex forecast for 2020-25 is similar to 2015-20 expenditure levels.
- Our operating expenditure forecast for 2020-25 is higher than 2015-20 expenditure levels, due largely to a number of proposed 'step' changes.
- We have responded to customer and stakeholder feedback following the release in August 2018 of our 2020-2025 Draft Plan, revising aspects of our plans and further reducing our expenditure forecasts in some areas.

Section 6: 2020-25 Revenue and Expenditure

The AER will make a revenue determination for our 'Standard Control Services' (SCS) which typically include network planning, operations and maintenance and some connection works which benefit all customers. The cost to provide SCS are recovered through distribution network tariffs paid by all customers.

Our total revenue for SCS for the 2020-25 period is forecast to be $3,915 million in real June 2020 dollar terms, compared with $3,909 million over the 2015-20 period.

In addition, the AER will determine fees for certain customer-specific services classified as 'Alternative Control Services' (**ACS**). These services include public lighting, basic (or legacy) metering and a wide range of other 'ancillary' network services[23]. These services are paid for by the individual customers who receive them. More detail on ACS is included in Section 8.

Below we compare proposed 2020-25 revenue and expenditure for Standard Control Services with the current and previous periods, and outline ACS 2020-25 revenue and expenditure.

Our revenue and expenditure forecasts

Standard Control Services

The forecast smoothed revenue for 2020-25 of $3,915 million is comparable to the 2015-20 revenue of $3,909 million in $June, 2020 terms.

The proposed capital program of $1,741 million is $13 million higher than the 2015-20 program.

The operating program of $1,530 million is $206 million higher than the 2015-20 program.

Figure 6.1 compares the forecast revenue, capex and opex expenditures with the current and previous regulatory periods.

Figure 6.1: 2010-25 Standard Control Services (2020 $ millions)

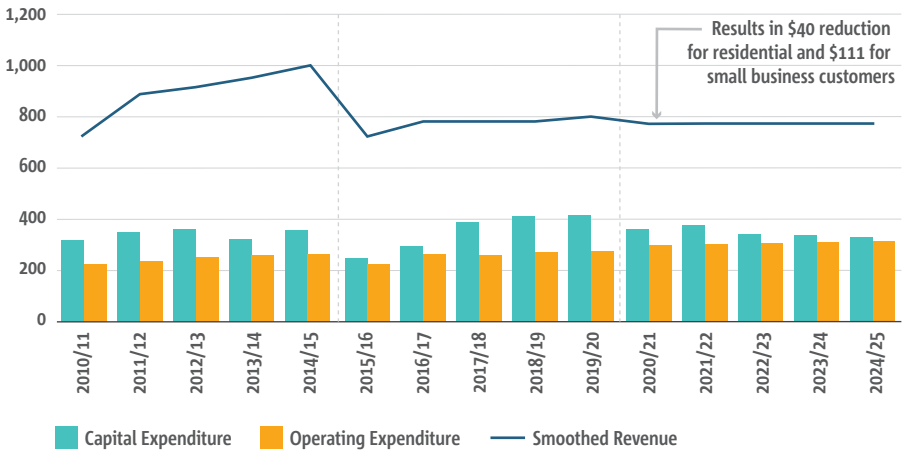


Table 6.1: 2020-25 Standard Control Services

$ million June 2020	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Capital expenditure	361	375	339	337	329	**1,741**
Operating expenditure	298	302	306	310	314	**1,530**
Smoothed revenue	783	783	783	783	783	**3,915**

Totals may not add up due to rounding

23 *A full list of the ACS offered by SA Power Networks in 2020-25 may be found at Attachment 12 Classification of Services*

Capital expenditure

The capex forecast has been determined using a bottom-up assessment of all capital program requirements associated with:

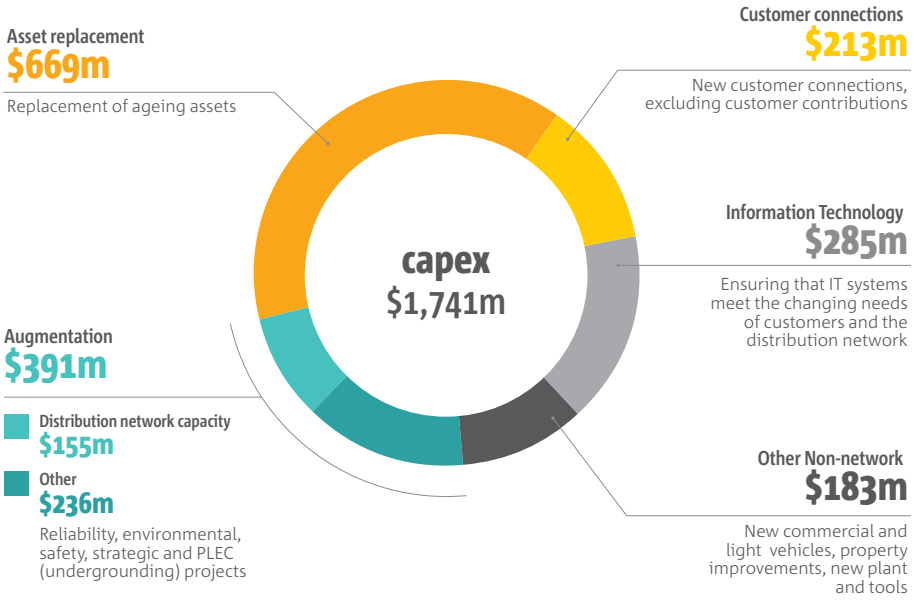
- our network assets – including all network replacement expenditure, customer demand and non-demand related network augmentation expenditure, and expenditure for connecting new customers to our network; and
- our non-network assets – including expenditure on IT systems, property and vehicles.

In all cases a range of options were considered and the proposed expenditure is supported with business cases and/or modelling identifying the proposed expenditure as the most prudent and efficient. Customer and stakeholder feedback gained through our extensive engagement influenced which options we have proposed, and the extent and scope of capital programs.

Figure 6.2 provides a breakdown of capex by major expenditure categories.

More details on the capex forecast are available in Attachment 5 – Capital expenditure.

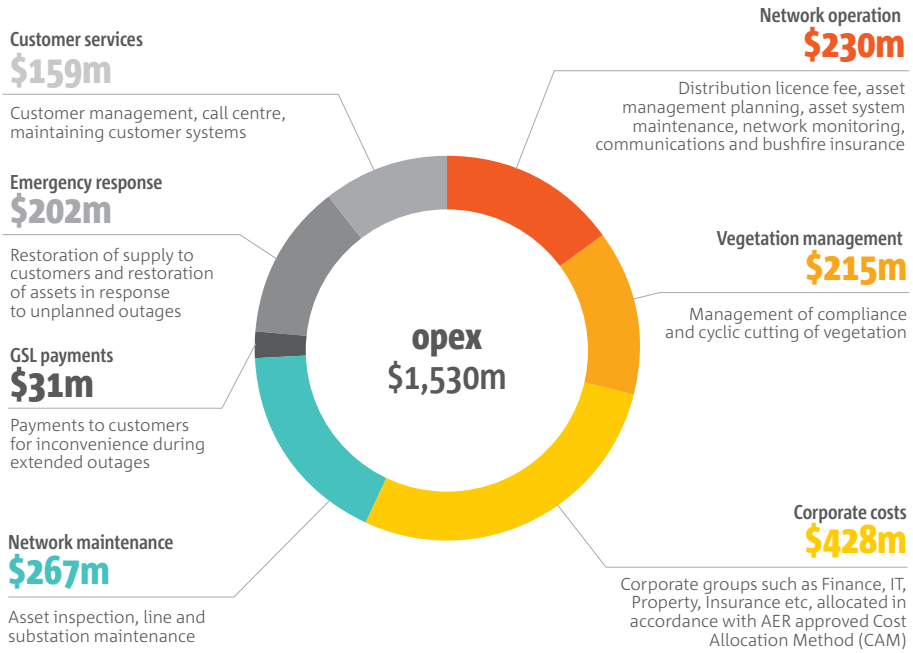
Figure 6.2: Capital expenditure



Operating expenditure

The operating expenditure forecast has been determined from a top-down assessment, using the AER's preferred 'Base-Step-Trend' methodology. We have selected 2018/19 as the 'base' year as this best reflects a suitable foundation for our forecast opex. To this we have added a number of step changes or capex/opex tradeoffs for material changes not captured in the base year opex. One of these is a significant negative step change (opex reduction) associated with changes to the Guaranteed Service Level Scheme determined by ESCoSA. Another is a capex/opex tradeoff in relation to cable and conductor repair works, currently categorised in repex (a component of capex), that we propose is better characterised as maintenance works (opex)[25]. Finally, we have applied a trend growth to reflect labour price changes and forecast customer numbers and line length.

Figure 6.3: Operating expenditure[24]



Although the AER will determine a total opex allowance, the areas where these funds will be allocated are shown in Figure 6.3.

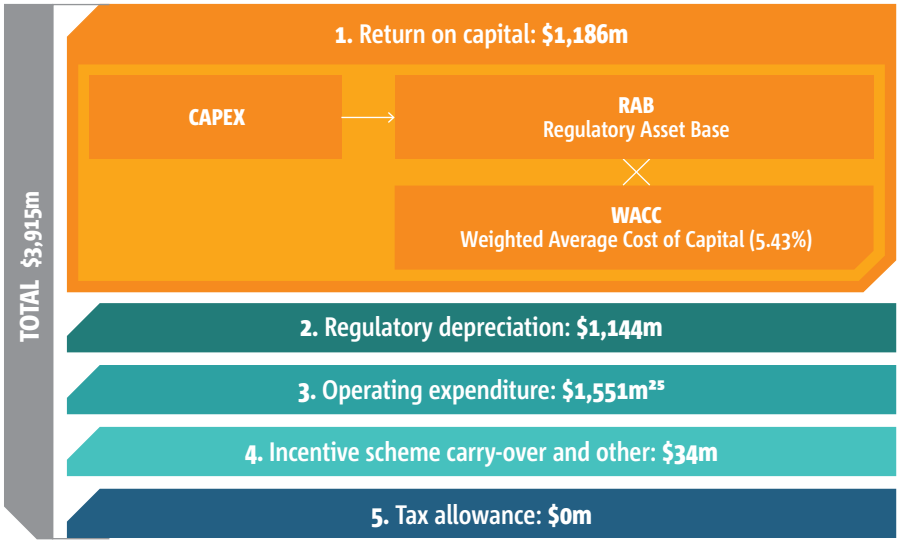
More details on the opex forecast are available in Attachment 6 – Operating expenditure.

24 *Excludes debt raising costs*

25 *The dollar amount remains the same but is treated as opex, not capex and is therefore not added to our RAB at the end of the 2020-25 period*

Figure 6.4 below illustrates how the capital and operating expenditures and other revenue building blocks determine our total revenue requirement.

Figure 6.4: Revenue building blocks



Alternative Control Services

The projected 2020-25 revenue, capex and opex expenditure associated with Alternative Control Services is set out in Table 6.2.

Table 6.2: 2020-25 Alternative Control Services

$ million June 2020	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Capital expenditure	17	10	11	3	2	**43**
Operating expenditure	55	55	55	55	54	**274**
Smoothed revenue	74	74	73	73	73	**368**

Actual ACS revenue and expenditure will be dependent on a number of factors including: the public lighting services chosen by Councils and the South Australian Government's Department of Planning, Transport and Infrastructure (**DPTI**); the rate at which retailers deploy new remotely-read interval (or 'smart') meters replacing legacy[26] (or non-smart) metering provided by SA Power Networks; and the customer demand for other services.

See Section 8 of this document for a more detailed description of ACS.

25 *Operating expenditure includes debt raising costs of $21 million, calculated in accordance with the AER's Post Tax Revenue Model*

26 *From 1 December 2017 a new AEMC rule mandated that retailers became responsible for all new and replacement meters and that these meters must be remotely-read interval (or 'smart' meters)*

Section 7: Tariff Structure Statement

In brief

- Our Tariff Structure Statement for 2020-25 has been developed following extensive consultation with customers, retailers and other stakeholders.
- More cost-reflective tariffs aim to encourage customers to consume more energy in lower cost times, and less in peak cost times. This should improve utilisation of the existing network capacity and reduce the need for SA Power Networks to invest in increased capacity, helping keep overall costs down for customers.
- Solar rooftop generation is exceeding localised demand in many parts of our network, creating a solar 'trough' in the middle of mild sunny days. Cost-reflective tariffs that encourage customers to shift electricity use into the 'solar trough' will help manage this emerging issue and avoid augmenting the network to cope with this surplus energy.
- Our customer and stakeholder engagement gives us assurance that our proposed tariffs strike the right balance between the Customer Impact Principles developed during our 2017-20 Tariff Structure Statement consultation.
- We continue to conduct trials of new tariffs to help us assess whether actual customer behaviour and billing outcomes align with the intent of the tariff.
- Interval or 'smart' meters are key to enabling tariff reform. When customers receive a smart meter they will be assigned to new more cost-reflective 'time-of-use' or 'demand' tariffs.
- The customer benefits from more cost-reflective tariffs will depend on how and whether they are passed on by electricity retailers.

Section 7: Tariff Structure Statement

Our Tariff Structure Statement outlines how we recover from customers the allowed revenue determined by the AER for 2020-25. The Statement provides the opportunity to clearly outline to the AER, retailers and customers our future tariff strategy and how it supports our long-term objectives.

It is important to understand that our allowed revenue for 2020-25 is a fixed amount, determined by the AER. Therefore our tariffs are not about how much revenue we are able to recover but how that revenue is to be recovered from different customers.

We already have cost-reflective 'demand-based' tariffs for our largest customers, who pay more if they want to use electricity at peak times, and pay less at non-peak times. The tariff reform proposed for 2020-25 is now turning to households and smaller businesses to influence the way they consume energy.

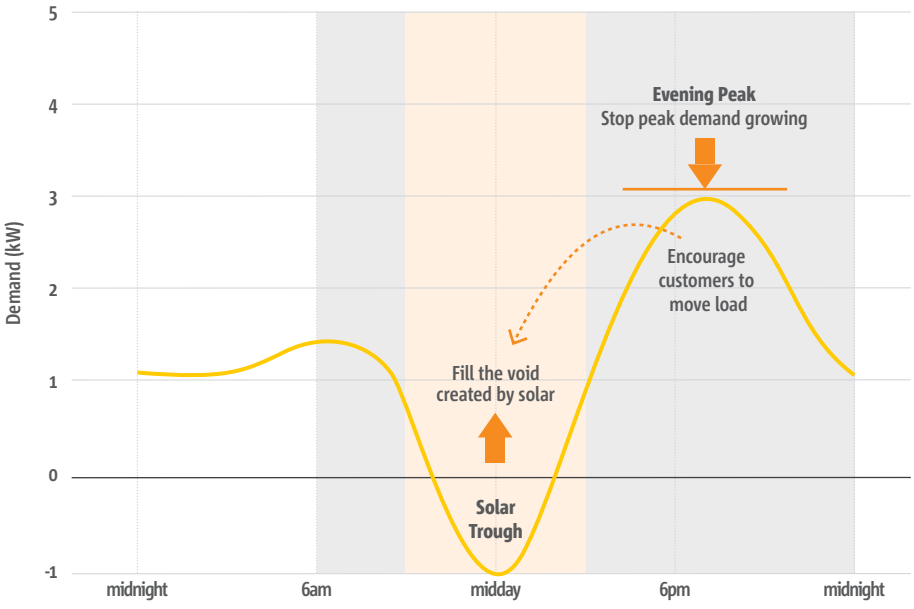
We believe our tariff approach will help lower the future price of electricity for all customers by helping to reduce investment in the network in the longer-term. The changes are designed to encourage customers to adapt their energy use to actively manage their bills and will result in more equitable and fairer pricing that reflects how customers actually use the network. That is, the customers who contribute the most to the need to invest in the network will pay a fair share of this cost – it won't be borne by customers who do not contribute to the need to invest in the network.

Under our tariff proposal, from 1 July 2020, all existing customers with interval meters, and customers who get a new or replacement meter, will be assigned to the new cost-reflective tariffs.

The reason the change is linked to metering is because 'interval' or 'smart' meters that record when customers consume energy are key to enabling cost-reflective tariffs. About 10% of our residential and small business customers currently have these meters and we expect this to grow to 45% by 2025 as all new and replacement meters being installed by retailers and their meter providers must now be interval meters.

Over many years, increased residential air-conditioning on hot summer afternoons led to increasing demand from our network which recorded the peak load in 2009. The continued uptake of solar since 2010 has helped slow the increase in demand on our network. However, there is now so much solar generation on our network – and more forecast over the 2020-25 period — that it exceeds localised demand in many areas of our network, creating a solar 'trough' in the middle of mild sunny days, and reverse power flows (discussed in Section 5) which poses a threat to network stability. Consequently, our proposed tariffs include a stronger pricing differential between the solar 'trough', and the morning and afternoon peaks to encourage customers to use energy in the solar trough period – and to avoid the morning and afternoon peaks. Figure 7.1 network peak load curve for a day – demonstrates the key objectives our tariffs are attempting to address.

Figure 7.1: Network peak load curve for a day



These tariffs are complementary to our network management strategy and provide a simple price signal to help alleviate congestion on the network, improve utilisation of our existing network capacity, and reduce costs in the longer term. We have also sought to establish tariffs that make it easier for customers to understand and respond to clear price signals, and reflect a better measure for what it costs SA Power Networks to service customers.

Engagement with stakeholders and retailers has informed our tariffs

Our proposed tariffs have been developed following engagement with customers, retailers and other stakeholders. Stakeholders have confirmed our tariffs strike the right balance between our tariff Customer Impact Principles of *fairness and equity, simplicity, customer empowerment, and compliance* (Figure 7.2).

We undertook a multi-stage engagement process specifically on tariffs from November 2017 to December 2018, outlined in Figure 7.3 below. This process was designed to:

- build understanding of the current challenges, context and obligations in relation to tariff setting;
- explore allocation preferences between residential and business customers; and
- explore customer impacts and gather feedback on residential, small business and large business tariff proposals.

Figure 7.2: Customer Impact Principles

This consultation involved customers and stakeholders from our standing reference groups (in particular, business and vulnerable customer advocates), the South Australian Government, Energy Consumers Australia, regulators and industry, and a number of retailers.

The engagement involved reference group discussions, bilateral meetings with customers, advocates and retailers, and a dedicated tariff deep dive workshop, which brought together the diverse views of different stakeholders. We revisited our tariff proposals with our Customer Consultative Panel and a sub-group of the Business Reference Group following Draft Plan consultation in August/September 2018.

A full summary of what we heard through our engagement and how we have responded is outlined in Attachment 17 – Tariff Structure Statement. It also sets out how we developed the proposed pricing structure and outlines indicative prices for each tariff for each of the five years in the 2020-25 period.

Figure 7.3: Tariff Structure Statement engagement

Our proposed tariff reforms for 2020-25

Key features of the proposed tariff reforms for 2020-25 include:

	Proposed tariff reforms for 2020-25	Impact on individual customers	Benefits to all customers
Residential	› Removal of the Inclining Block Tariff for Residential and Small Business	› Removes increased charges for increased energy volume consumption which do not drive network costs	› Simplifies the tariff structure
	› Time-of-use becomes default residential and small business tariff for customers with interval meters from 1 July 2020	› Provides incentives for customers to move electricity usage from morning and afternoon peaks into the solar trough where they can	› Soaks up solar energy so more can be exported onto the network – reduces voltage issues and defers the need for network investment or solar curtailment › Well suited for future flexible loads such as electric vehicles
	› Extend the peak window from a 30-minute window to the average over a four-hour window	› Allows customers to manage loads within a four-hour window not a smaller 30-minute window	› Simplifies the structure › Easier for customers to manage their loads over a longer period › More equitable charge as it smooths out the demand window
	› New 'prosumer' demand tariff for customers with solar and battery systems	› Provides incentives for customers to manage their solar/battery systems to avoid peak charges	› Mitigates peak demand on the network › Well suited for future flexible loads such as electric vehicles
Residential & Business	› No difference in tariffs for customers with or without solar	› Tariff structures don't drive solar decision	› Maintains fairness and equity across customers
	› Time-of-use and demand-based tariffs available to all customers with an interval meter	› Simple and understandable incentives for customers to move load to off-peak times where they can	› Maintains fairness and equity across the customers › Well suited for future flexible loads such as electric vehicles
Business	› The key peak and off-peak times for two rate and time-of-use tariffs recognise the peak morning, and peak evening times, and the off-peak period during the solar 'trough' in the middle of the day	› Encourages customers to use the power available during the solar 'trough' (the period of high solar output)	› Reducing prices in the longer term due to higher utilisation › Simplicity in pricing signals
	› A new CBD large business tariff recognises the afternoon peak in the CBD where there is low solar penetration (and no solar trough concerns) and high afternoon demand	› Recognises the peak demand period for large business on weekdays and incentivises the customer to manage load in peak times	› Maintains equitable and cost-reflective charges by recognising the customers' inability to shift load later in the day

It is important to note that we do not directly charge customers for our SCS services. Instead it is the retailer who determines how customers are ultimately charged. This means that the impact of these tariffs and the pricing signals they are designed to send, will depend on how the charges are passed on to customers via their retail bill. We will continue our engagement with retailers on our tariff proposals.

Our TSS also contains proposed prices for our range of ACS discussed next in Section 8 of this document.

Section 8: Alternative Control Services

In brief

- We provide a range of customer-specific services and recover the costs for these services directly from the individual customers who receive them. Until now, and except for metering fees which were set by the AER in 2015-20, we negotiated the price of these services.
- For the 2020-25 period, the AER has classified legacy metering services, public lighting services and a range of ancillary network services as 'Alternative Control Services' for the 2020-25 period. We will propose prices for these services (included in our 2020-25 Tariff Structure Statement) to the AER who will approve or substitute alternative prices for these services.
- We have been consulting with the Local Government Association (**LGA**), Councils and the South Australian Government's Department of Planning, Transport and Infrastructure on public lighting service levels and the pricing for these services.
- The approaches we used to determine the proposed prices for our Alternative Control Services in 2020-25 are consistent with those adopted by the AER in other jurisdictions. In most cases, the proposed prices for these services are comparable to the prices we currently charge.

Tangkuinyendi Yabarra – Dreaming Light ...
Fringe Illuminations on the South Australian Museum (projections by illuminart)
This event was sponsored by SA Power Networks

Section 8: Alternative Control Services

Alternative Control Services (**ACS**) are customer-specific services. The costs of providing these services are recovered directly from the individual customers who receive them. In the current 2015-20 period, the only services classified as ACS are basic (or legacy) metering services. For the 2020-25 period, the AER has classified basic metering services, public lighting services, some connection services and a range of ancillary network services as ACS and will set the prices for these services. Our total revenue for ACS for the 2020-25 period is forecast to be $368 million in real June 2020 dollar terms, based on historical service volumes. The actual revenue will vary according to the amount of services provided during the period.

Metering services

Metering contestability was introduced on 1 December 2017 – and from that date SA Power Networks can no longer install or replace electricity meters. This work must now be completed by a retailer-appointed Metering Coordinator and all new and replacement meters must be remotely-read interval (or 'smart') meters. SA Power Networks remains responsible for the operation, reading and maintenance of existing basic meters until they are replaced with a smart meter. We currently service just under one million basic meters and forecast these meters to be replaced at a rate of about 6% per annum.

To recover the efficient costs of providing legacy metering services, we propose to retain the existing structure for metering service charges consistent with the previously approved AER methodology. Meter fees in the 2020-25 period will be lower than those charged currently, reflecting our reduced metering costs since metering contestability.

Fee based and quoted services

What these services are

Fee based and quoted services are a diverse range of non-routine services that we provide to customers on an as-needs basis. Examples[27] include network asset relocation work, premises energisation/de-energisation, and special meter reading services. The cost of each service is paid for by the customer who requests the service.

Our charges have been built-up using historical data. Proposed prices for 2020-25 are largely consistent with those currently charged.

Public lighting services

What these services are

We provide public lighting services for 67 customers throughout South Australia, including local councils and the DPTI.

There are approximately 230,000 public lights installed across our network. Of these, 35,000 (18%) have been upgraded to more energy efficient LEDs, providing improved energy and maintenance outcomes for our customers. We are continuing to consult with councils and DPTI to proactively upgrade the remaining lights to LEDs where cost-effective.

How we have consulted

In recent years we have engaged extensively with public lighting customers on service levels and pricing options. Individual arrangements are currently negotiated directly with councils and DPTI. Specific engagement on proposed public lighting service levels, products and prices for the 2020-25 period has occurred over the past year via workshops, an online survey, and the establishment of a joint LGA/SA Power Networks Public Lighting Working Group. This engagement is outlined in Figure 8.1.

How we calculated tariffs

We use a building block approach to determine the efficient cost of providing public lighting services.

This building block approach enables us to continue to support pricing flexibility and customer choice, aligned with our current negotiating framework. Price options vary depending on the service 'package' selected by customers.

What this means for customers

Our proposed public lighting prices have been developed based on delivering agreed service levels. In an online survey, 76% of our public lighting customers supported these service levels. Proposed public lighting prices for 2020-25 vary from customer to customer depending on services selected, and are on average 6% above current prices.

Further details on Alternative Control Services are available in Attachment 14 – Alternative Control Services.

Figure 8.1: Public Lighting engagement

27 *A full list of our ancillary network services can be found at: Attachment 17 - Tariff Structure Statement*

Section 9: Changes from the Draft Plan

In brief

- We have responded to customer and stakeholder feedback following the release in August 2018 of our 2020-25 Draft Plan by revising aspects of our plans and further reducing our forecasts in some areas.
- A number of major regulatory changes have also occurred since August 2018 and these have a material bearing on our allowed 2020-25 revenue. The AER:
  - made a final decision in December 2018 on the allowed Rate of Return on regulated assets;
  - made a final decision in December 2018 on Taxation allowances; and
  - commenced consultation on a draft decision in November 2018 on forecasting productivity growth.
- In our Proposal we have adopted the AER's Rate of Return and Taxation allowances decisions. We have not adopted the productivity growth draft decision.
- ESCoSA also made a final decision in January 2019 on the Service Standard Framework applicable to SA Power Networks for 2020-25, which is incorporated in this Proposal.

Section 9: Changes from the Draft Plan

As a precursor to this Proposal, we published our 2020-25 Draft Plan in August 2018. That Draft Plan was developed following extensive consultation and presented our best view at the time of our expenditure plans for 2020-25. Since then, we have refined our plans in response to further valuable feedback received from customers and stakeholders and incorporated these in our Proposal.

Also, the regulatory framework has continued to evolve since August 2018 with the AER making key final decisions on Rate of Return and tax allowances and undertaking consultation on a potential 'productivity adjustment'. These matters have also had a material impact on our 2020-25 revenue outcomes. ESCoSA also finalised its decision on the Service Standard Framework applicable to SA Power Networks in the 2020-25 period.

Rate of Return

The AER released a final Rate of Return decision on 17 December 2018. Its decision was largely consistent with the draft decision it issued in July 2018, with only minor changes to certain financial parameters. The largest change is the 'risk free rate' which has fallen materially since the Draft Plan was published. The net result is a lower weighted average cost of capital (Rate of Return) of 5.43%.

Taxation Allowance

The AER also released its Taxation Allowance decision on 17 December 2018. The key changes from this decision involve amending the regulatory allowance for corporate income tax to more closely match actual tax treatments by distributors. The AER decision includes provision for the individual circumstances of each distributor to be considered during the regulatory determination process.

As a result of the AER decision, we have reviewed our treatment of economic asset lives, depreciation approaches, and capitalisation policies and included these changes in our Proposal capex and opex forecasts. These proposed changes better reflect the actual work undertaken and life of assets involved and therefore align more closely with the depreciation requirements of the National Electricity Rules (section 6.5.5).

Although our proposed changes provide for a capex/opex trade-off reducing capex and increasing opex by $68 million over 2020-25, the overall impact of the AER Taxation Allowance decision is a net reduction of $101 million in our allowed 2020-25 revenue.

Productivity Adjustment Draft Decision

The AER also released a draft decision on forecasting productivity growth for electricity distributors in November 2018. We have not adopted the proposed 1% opex productivity growth adjustment recommended in the AER draft decision. There is no evidence to support a productivity adjustment. Refer to SA Power Networks response to the AER draft decision.[28]

ESCoSA Service Standard Framework 2020-25

On 7 January 2019 ESCoSA released its final decision on the Service Standard Framework applying to SA Power Networks over 2020-25. Its decision was largely consistent with the draft decision it issued in August 2018.

Our GSL forecast costs under ESCoSA's 2020-25 Service Standard Framework are significantly lower than the current 2015-20 period. We factored this into our Draft Plan. However, following discussion with AER staff after publishing the Draft Plan, we have altered our approach to forecasting these future costs and further reduced our base year estimate, lowering opex a further $10 million over 2020-25.

The capex, opex and revenue impact of these changes since the Draft Plan are outlined in the following Tables 9.1 to 9.3.

28 *Available at: aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-our-approach-to-forecasting-opex-productivity-growth-for-electricity-distributors/initiation*

Lower capital expenditure forecast

We have worked hard to revise the scope and reduce the estimated cost of some of our proposed work programs. Cost estimates were updated with the latest (lower) independent labour price and (higher) customer connections volumes forecasts. Some Fleet and IT expenditure forecasts have increased following receipt of quoted prices from some vendors.

However, in response to customer and stakeholder feedback to keep downward pressure on prices in conjunction with the capex/opex tradeoffs, the total capex forecast has been reduced by $109 million (from $1,850 million to $1,741 million).

The specific changes since the Draft Plan are outlined in Table 9.1.

Operating expenditure forecast

Since the Draft Plan, we have made the following changes to our opex forecast (Table 9.2):

Reductions

- We reduced our base opex forecast by altering our approach to forecasting 2020-25 GSL costs[29];
- We removed one step change (Billing system) and reduced the scope of one other step change (Low Voltage Management Strategy); and
- We revised our trend costs by updating price growth for the latest (lower) independent labour growth forecasts.

Increases

- We updated our cost estimates with the latest CPI data from the Australian Bureau of Statistics;
- We revised our trend costs by updating output growth factors (customer numbers consistent with AEMO forecasts and circuit line length) and revised the output weightings following the AER's latest benchmarking report; and
- We included a capex/opex tradeoff (opex step change) to better recognise cable and conductor repair works.

The overall result of these changes is a $62 million increase in our 2020-25 opex forecast (from $1,468m to $1,530m).

Table 9.1: Capital expenditure changes

Change since 2020-25 Draft Plan (August 2018)	Change ($June 2020)
Refined asset replacement expenditure modelling	+ $13 million
Revised scope and estimates for Low Voltage Management Strategy ('future network' investment)	- $5 million
Revised scope and estimates for the continuation of our Bushfire Risk mitigation program that commenced in 2015-20	- $8 million
Revised scope and estimates for two proposed reliability programs: poorly-served customers and continuation of hardening the network program commenced in 2015-20	- $8 million
Increased customer connections expenditure in line with latest independent forecast	+ $17 million
Deferred the proposed new Gawler East zone substation	- $13 million
Extended our Protection compliance program into future regulatory periods (after 2020-25)	- $18 million
Increased IT expenditure forecast estimates following receipt of vendor quotes	+ $23 million
Increased Fleet expenditure forecast estimates following receipt of vendor quotes	+ $9 million
Reduced scope of Property works	- $14 million
Superannuation regulatory adjustment (on labour costs for capital works)	- $38 million
Capex/opex tradeoff: expensing cable and conductor repairs currently capitalised	- $70 million
Net change since 2020-25 Draft Plan	- $109 million

Numbers will not add up due to rounding

Table 9.2: Operating expenditure changes[30]

Change since 2020-25 Draft Plan (August 2018)	Change ($June 2020)
Revised approach to forecasting 2020-25 GSL payments: reduced 2018/19 base year costs	- $10 million
Updated forecast with latest CPI data from Australian Bureau of Statistics	+ $4 million
Removed Billing system step change and reduced the step change associated with our new Low Voltage Management Strategy	- $6 million
Incorporated latest independent labour price growth forecast (from BIS Oxford Economics)	- $1 million
Updated forecast growth in customer numbers (consistent with AEMO forecasts) and circuit line length	+ $5 million
Revised output weightings using two models from the AER's Benchmarking Report published on 31 November 2018	+ $1 million
Capex/opex tradeoff: expensing cable and conductor repairs currently capitalised	+ $68 million
Net change since 2020-25 Draft Plan	+ $62 million

Numbers will not add up due to rounding

29 *Our GSL forecasts costs under ESCoSA's 2020-25 Service Standard Framework are significantly lower than the 2015-20 period. We factored this into our 2020-2025 Draft Plan. However, following discussion with AER staff after publishing the Draft Plan, we have altered our approach to forecasting these future costs and further reduced the base year cost estimates*

29 *Excludes debt raising costs*

Revenue forecast changes

The revised expenditure forecasts described earlier, together with other factors impacting revenue in 2020-25 are outlined in Table 9.3 below. The net result is forecast revenue will be $22 million higher than the Draft Plan indicated (from $3,893 million to $3,915 million).

Table 9.3: Revenue changes

Change since 2020-25 Draft Plan (August 2018)	Change ($June 2020)
Lower return on capital allowance due to a lower weighted average cost of capital from 5.55% to 5.43% largely because of falling market rates	- $31 million
Higher depreciation allowance from a higher mix of short life assets (particularly IT systems) in updated capex forecasts for both the current 2015-20 period and the next 2020-25 period and depreciation of shorter life assets in response to the AER's taxation decision	+ $120 million
Higher opex forecast as outlined in Table 9.2 and including debt raising costs	+ $70 million
Inclusion of forecast efficiency benefits sharing scheme (EBSS) outcomes from spending below opex allowances in 2015-20. Spending below allowance in 2015-20, particularly in the early years of the current period (2015/16 and 2016/17) has resulted in an EBSS penalty to carry-over in 2020-25	- $30 million
Inclusion of forecast capital efficiency sharing scheme (CESS) outcomes from spending below capex allowances in 2015-20. Spending below allowance in 2015-20 has resulted in a CESS reward to carry-over in 2020-25	+ $70 million
Lower Taxation Allowance resulting from AER December 2018 decisions on Taxation Allowance and Rate of Return (tax imputation credits) Instrument	- $176 million
Other adjustments	- $1 million
Net change since 2020-25 Draft Plan	+ $22 million

Tariff Structure Statement changes

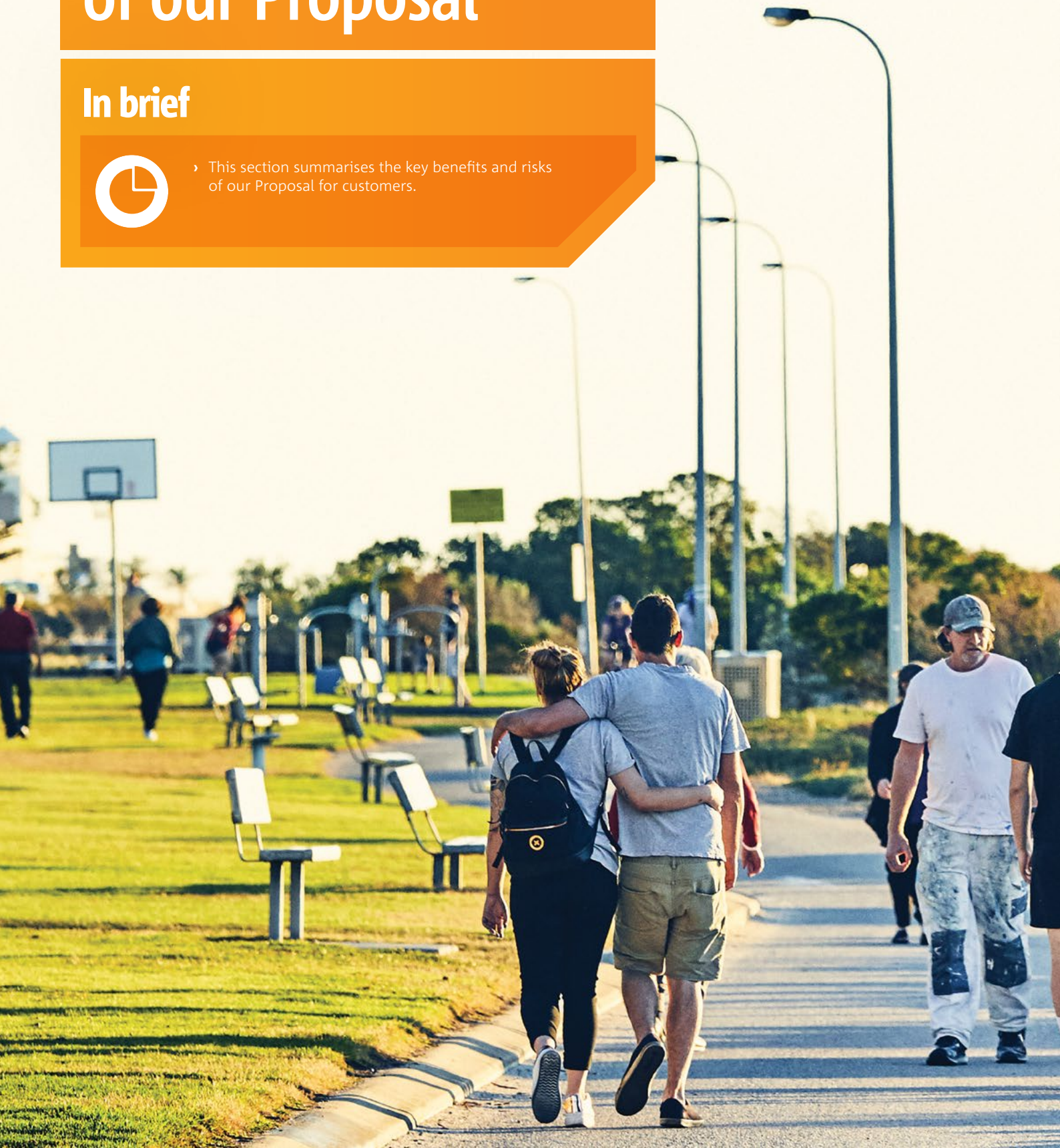
Customers and stakeholders told us they want us to explore all non-network opportunities to manage emerging network issues. As a result, we are now proposing a stronger price signal in our residential tariffs from that proposed in our 2020-2025 Draft Plan. This will help manage the emerging 'solar trough' being created by increasing amounts of surplus residential solar energy being generated in the middle of the day as well as managing the traditional 'summer peak' on hot summer afternoons.

We hope this stronger price differential will encourage residential customers to shift load from morning and afternoon peak times into the middle of the day to absorb this excess solar generation and alleviate the network congestion it would otherwise cause.

Section 10: Benefits and risks of our Proposal

In brief

› This section summarises the key benefits and risks of our Proposal for customers.



Section 10: Benefits and risks of our Proposal

Although we are confident that our Proposal will enable us to provide a balanced outcome for customers, it is not without risk. It is enormously challenging to predict all of our cost drivers with confidence over greater than a five-year period and therefore the assumptions on which we have built our plans may not hold true.

Our forecasts have assumed that these cost drivers remain in line with current trends. If they are materially exceeded, it is likely to require diversion of expenditure from more discretionary areas of service delivery to ensure that our core safety, reliability and compliance requirements are met. It could also require re-allocation of expenditure from prudent long-term asset management plans, and see it deployed on short-term fixes.

Nonetheless, within the current context of high electricity prices, we consider it is more prudent to recommend a largely business-as-usual proposal to customers, and we remain confident we are proposing the right balance as outlined below in Table 10.1 describing the key customer benefits and risks.

Table 10.1 Benefits and risks of our Proposal

Customer benefits	Customer risks
Keeping prices down	
› This Proposal delivers an average real price reduction in 2020/21 and further reductions in prices in the remaining years of the period › Our forecast opex is based on 2018/19 actual expenditure (year to date). Expenditure in this year is currently below allowance, helping to keep prices down in the 2020-25 period › Prudent asset management practices will ensure we maximise asset life, minimise asset replacement expenditure to help keep our RAB value low, which helps keep prices down in the future › Prudent replacement expenditure for ageing assets will balance the needs of customers now with those of customers in the future › The cost-reflective tariffs proposed in our Proposal will help reduce the need to increase network capacity and keep the long-term costs of the network down. Customers who respond to the price signals in our tariffs will incur lower distribution charges › Our plans will enable customers to connect more solar and battery systems to reduce their electricity bills and will lead to lower energy costs for all customers in the long-term	› The average price reduction is just that – an average, which means some customers may receive a greater price reduction than average and others may receive less › Customers will only receive the full benefit of the fall in network charges and introduction of cost-reflective tariffs if those benefits are passed on in full by their retailers › Customers who do not respond to the price signals provided by our cost-reflective tariffs may incur higher distribution charges, subject to the pricing structure put in place by their retailer

Customer benefits	Customer risks
Maintaining a safe and reliable network	
› This Proposal aims to maintain community safety and meet average reliability supply targets set by ESCoSA. Network defect remediation will be focused on customer and community safety and customer inconvenience from unplanned outages › Investment in IT systems will enable more accurate and timely information to customers on power outage restoration times or on specific customer works. IT supports delivery of work programs more efficiently and effectively, providing better customer service and minimising inconvenience to customers › This Proposal contains targeted plans and expenditure to improve reliability to some rural and remote customers who are connected to low reliability feeders › Improved environmental outcomes for customers will be achieved through enhanced vegetation management practices, meeting undergrounding regulatory obligations and managing environmental hazards › Continuing our bushfire mitigation program will further reduce bushfire start risk › Prudent investment in cyber security will ensure our network and customer systems and data will remain secure	› Our approach to prioritising defect remediation may result in some customers experiencing more planned power interruptions related to rectification work › We are experiencing more frequent and more severe weather conditions which could increase bushfire start risk and damage on our network, causing more power outages for customers › It could be that asset health deteriorates more quickly than anticipated as assets near end of life, requiring us to review our asset management practices › Economic growth could exceed expectations, requiring greater customer connections expenditure and augmentation costs
Prudently transitioning to the new energy future	
› Our Proposal recognises the electricity industry is being transformed by customer choices and technology. It supports Government programs and customers' desires to connect and export more customer energy resources (solar, battery and energy management systems and electric vehicles). These offer cheaper and greener energy solutions for all customers › We continue to explore a wide range of network and non-network options to address network constraints at the lowest cost › We will continue to work closely with Government and other stakeholders to ensure the network is transitioned in the most appropriate manner › The residential Time-of-Use tariff will help to manage the impacts of expected future loads such as electric vehicles	› With significant solar generation on mild sunny days, customers' ability to export energy into the network, may be constrained in some locations until we develop more 'visibility' of our low voltage network and the capability to more flexibly and dynamically manage real time network constraints › Without adequate management and oversight, minimum demand days may cause instability on the network, potentially causing power outages for customers › The rate of adoption of new energy technologies by customers may exceed AEMO forecasts and result in: - increased complaints about poor network performance; and - customers not receiving the new services that they value › It could also be that our modest investment in managing the transition to the new energy future is insufficient to manage emerging issues, and as a result, the value that all customers could potentially obtain from increased leverage of distributed energy resources is reduced. These outcomes could increase costs for future electricity customers › Customers assigned to new cost-reflective tariffs could experience increased bills because they are unwilling or unable to change their usage patterns

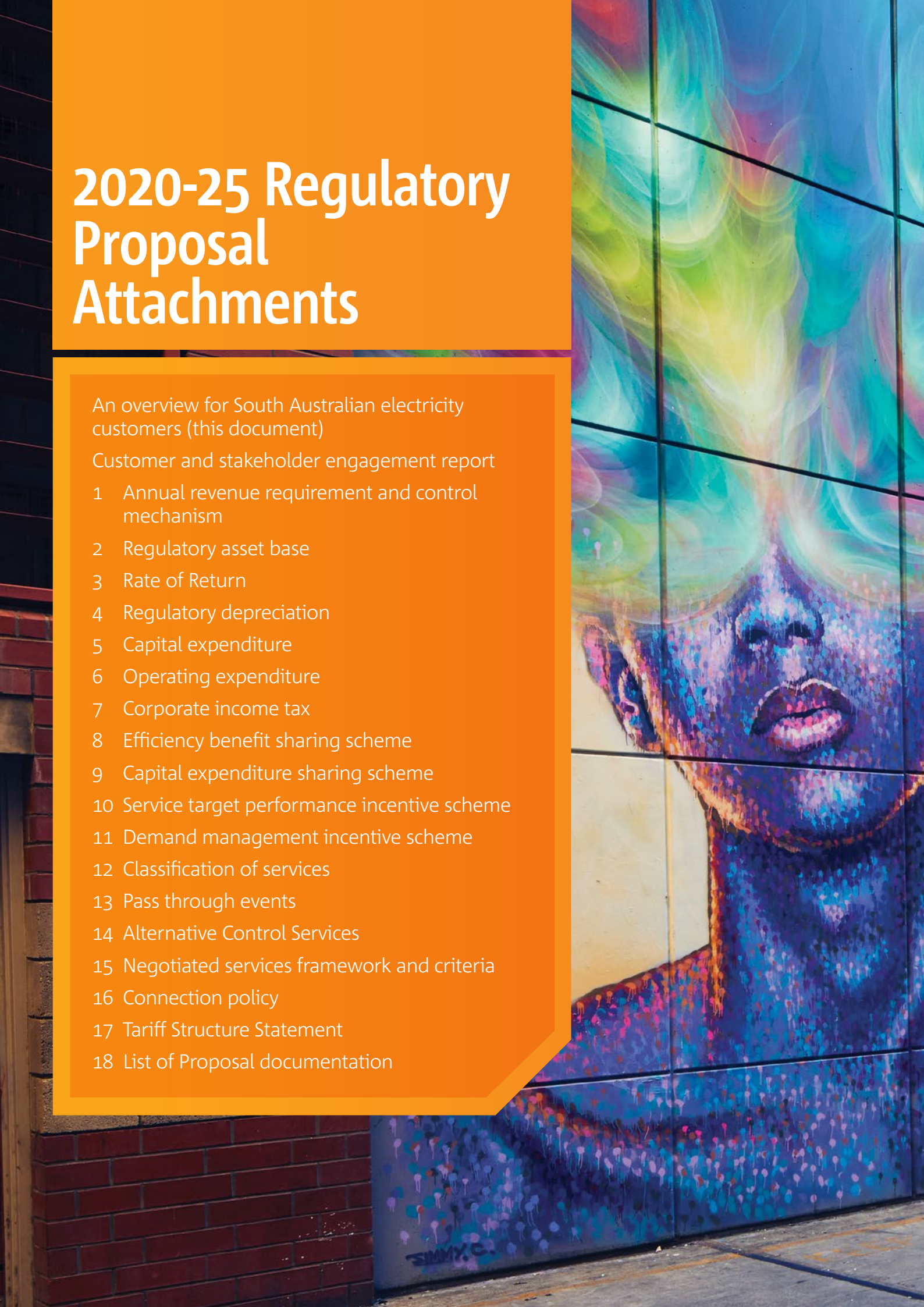
Have your say

We will continue to engage with our customers, reference groups and other stakeholders on our Proposal throughout the AER's determination process.

Written submissions on our Proposal should be forwarded to the AER at: SAPN2020@aer.gov.au

We also encourage customers and stakeholders to continue to engage with us on our plans. Visit talkingpower.com.au and register your details, or email talkingpower@sapowernetworks.com.au, to continue the conversation.

2020-25 Regulatory Proposal Attachments



An overview for South Australian electricity customers (this document)

Customer and stakeholder engagement report

1 Annual revenue requirement and control mechanism

2 Regulatory asset base

3 Rate of Return

4 Regulatory depreciation

5 Capital expenditure

6 Operating expenditure

7 Corporate income tax

8 Efficiency benefit sharing scheme

9 Capital expenditure sharing scheme

10 Service target performance incentive scheme

11 Demand management incentive scheme

12 Classification of services

13 Pass through events

14 Alternative Control Services

15 Negotiated services framework and criteria

16 Connection policy

17 Tariff Structure Statement

18 List of Proposal documentation


PRIVATE
PARKING
AREA
NO STOPPING
VEHICLES EXEMPT