Ausgrid and our customers

EXECUTIVE SUMMARY

Ausgrid

How our proposal will meet customers' needs

AFFORDABLE

Lower prices

6%

reduction in our component of network costs in residential bills from 1 July 2019

Fairer

Updated price structures

More efficient

Operating cost savings (pa)

$100m

Benefit per customer

$76pa

RELIABLE

Replacing ageing assets

$335m pa

investment in renewing the grid

+

Investing in technology

$43m pa

including cyber security

SUSTAINABLE

Flexible network

$58m

to deliver the '**future grid**' sooner by trialling technologies that enable sustainable customer choices

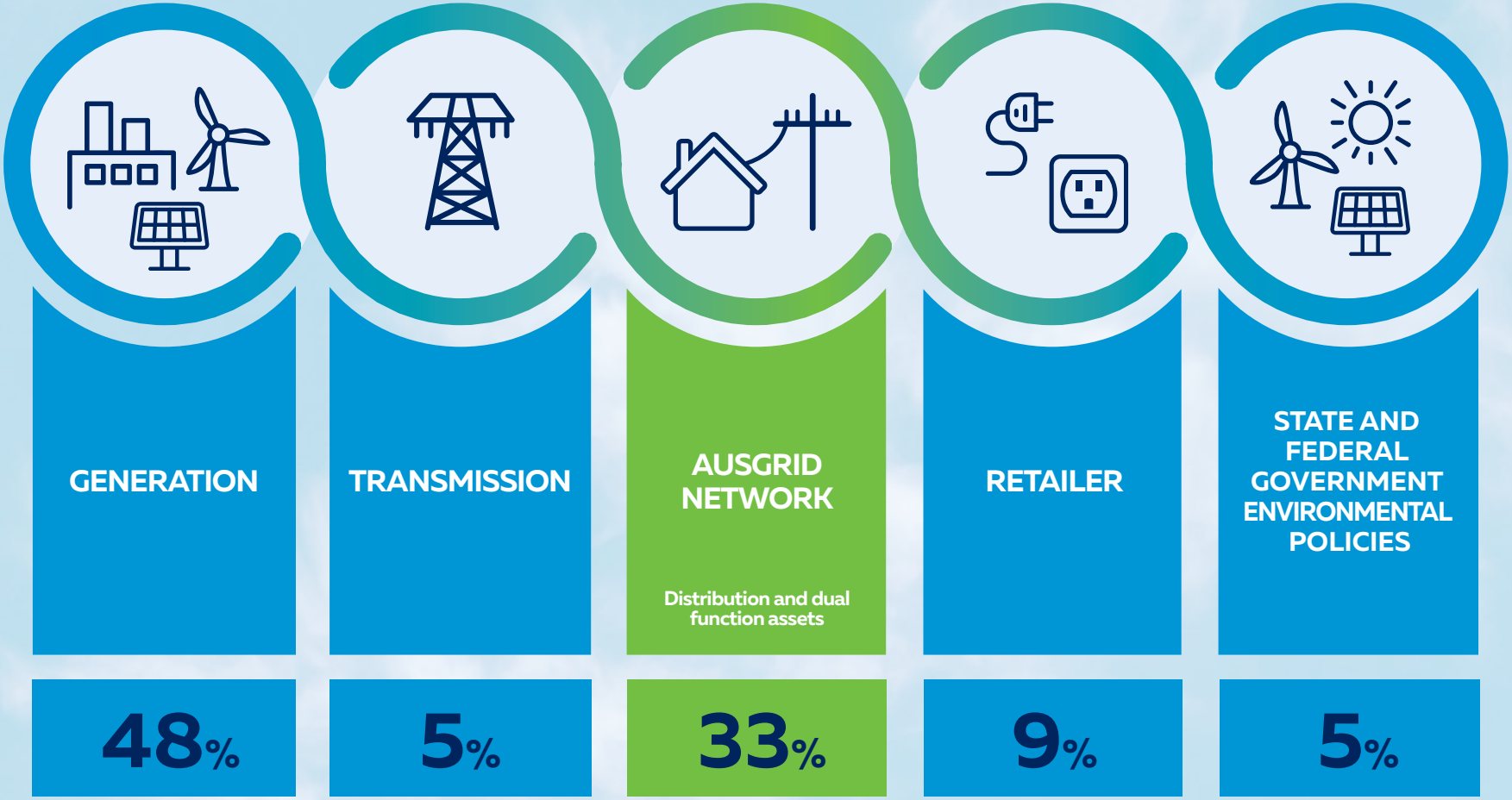
Smart

$41m

additional investment in an **Advanced Distribution Management System** following an initial investment of $35m in the current period

Electricity supply chain

The different cost components of a typical customer bill.



Source: Ausgrid analysis for FY17/18, based on standing offer in Ausgrid's network, Ausgrid's network charges (including NSW Government Climate Change Fund costs) and Australian Energy Market Commission data for wholesale generation costs and other Federal and State Government Environmental policies.

Contents


L.V. COVER
Suitable for Low Voltage

01 Introduction

Ausgrid is the largest distributor of electricity on Australia's east coast, our grid powers the economic engine room of NSW. We bring power to 1.7 million households and businesses across 22,000 square kilometres covering Sydney, the Central Coast and the Hunter Valley.

Day-to-day, we are responsible for operating, maintaining, repairing and building our network of substations, power lines and underground cables. Our network transports energy from generators to homes and businesses. Long-term, our job also includes making sure this network is ready for a future where renewables play a major role in the power mix, and households and businesses can generate their own electricity and sell it back through the grid.

Why are we submitting a Regulatory Proposal?

Every five years, Ausgrid submits a proposal to the Australian Energy Regulator (AER). The 2019–24 Regulatory Proposal (the Proposal) sets out how much revenue we need to recover from our customers to make sure they have safe and reliable power – now and in the future.

Deciding when and how to spend money on the network is a complex balance of cost and performance. We need to spend enough on modernising the grid, preventing outages and having a workforce big enough to respond quickly to ensure the reliability of the network and the ability to restore power in emergencies. We will do this while still helping to make electricity as affordable as possible.

Efficiency is at the heart of providing more affordable network services. In our Proposal we refer to 'affordable' because this is the language that our customers and stakeholders have used. We understand, however, that 'affordable' is not enough – we need to lead the industry in terms of our efficiency. The AER will review our expenditure plans to ensure they reflect prudent and efficient spending, in accordance with the National Electricity Rules that govern the way we are regulated.

Who did we talk to before preparing this proposal?

We are committed to strong, ongoing engagement with our customers to help us meet their changing needs and expectations.

We have spent the last 18 months talking to our customers and stakeholders – from major industrial users to households – about their priorities. It is critical that we understand our customers' needs so we can invest in the right assets at the right time and place. Consulting with customers and stakeholders is increasingly important as developments in technology provide more choice in the way energy is used and generated.

Having received the AER's approval to extend the submission date for our Proposal to the end of April 2018, we were able to extend our consultation program to allow an even greater level of community and stakeholder engagement on key aspects of our Proposal.

The Extended Stakeholder Consultation Program included the release of our Stakeholder Consultation Document, which provided details of each key area of our Proposal and sought feedback from customers and stakeholders. This consultation document was supplemented with a series of in-person meetings with deep-dive sessions on key topics, including a focus on capital expenditure, operational expenditure and our pricing strategy.

How we responded to feedback received on our preliminary proposal

Our Proposal has been shaped by the feedback we have received throughout our customer and stakeholder engagement process. It has pushed us to focus on our customers by ensuring that our Proposal is targeted to address their concerns and priorities.

Our extended stakeholder consultation provided further feedback on our preliminary proposal. The feedback we received was generally positive, but our customers provided specific feedback on where our Proposal could be improved. Our customers' feedback on where we should do more and our response to these challenges is summarised on the right.

The feedback received during the extended stakeholder consultation program has directly resulted in a $240 million (in nominal terms) reduction in revenue and a 2.5% reduction in prices, compared to our initial draft proposal.

What's in this document?

This overview paper describes how we engaged with electricity consumers, what they told us and how our Proposal addresses their concerns around affordability, reliability and sustainability. It aims to make it easy for customers to understand what we're proposing, why it's different from our previous approach and how it affects them.

This paper also looks beyond 2024 to show customers the long-term goals behind our future investment in the grid. We hope it demonstrates the core values of the 'new Ausgrid': that we are listening to our customers and acting in their best interests.

Our response to Extended Stakeholder Consultation

Ausgrid should further improve affordability...	**In response, we have:** • reduced revenues to cover depreciation during the period by $100 million as a result of applying a different depreciation method • reduced metering depreciation during the period by $37 million by withdrawing our proposal to accelerate depreciation • reduced capital expenditure by $25 million through deferring the proposed changes to customer capital contributions.
Ausgrid should focus on non-network solutions...	**In response, we have**: • identified an additional capital expenditure (capex) deferral of $69 million through new demand management initiatives.
Ausgrid should be more innovative in its approach...	**In response, we have:** • committed $58 million for innovative projects and trials to deliver the 'future grid' sooner • accelerated our price structure reform whilst also assessing the suitability of a time of use (TOU) pricing structure with a demand based charge.

02

Our role in powering Australia's economic engine

Ausgrid's distribution network supplies Sydney, the Central Coast and the Hunter Valley with the electricity that is essential to our economic activity, our institutions and our way of life.

Ausgrid powering our economic growth

15% of Australia's population

16% of Australia's jobs

1.5m Homes

20% of Australia's GDP

105 Hospitals

37% of Australia's ICT industry

37% of Australia's financial services industry

15% of Australia's construction industry

12 Sporting stadiums

40 Main concert hall theatres

5 Universities

1,238 Schools

Source: Ausgrid analysis. Regional GDP estimates are based on data supplied by Deloitte Access Economics.

Our Vision

Our vision is to become a leading energy solutions provider, recognised both locally and globally.

Providing essential services

The origins of Ausgrid go back more than 100 years, when we were the first company to electrify Sydney. Since then, the Sydney energy network has expanded to provide the essential power that makes our lives work.

As customers, we usually only notice the power of electricity during the rare times that it stops working. These are the moments when we realise the importance of electricity to support our quality of life.

The Ausgrid service area includes some of Sydney's most densely populated suburbs, as well as the fastest growing regions of NSW from Waterfall in Sydney's South to Auburn in Western Sydney to the upper Hunter Valley.

The new Ausgrid

Ausgrid became a new company on 1 December 2016, with a new CEO and a new ownership structure: IFM Investors and AustralianSuper (50.4%) and NSW Government (49.6%). We have spent the last year transforming ourselves to better meet our customers' needs. Ausgrid is now focused on these priorities:

Affordable

Our prices are reducing as we achieve significant operational efficiencies. On 1 July last year, network prices for a typical residential customer fell by 3.3%.

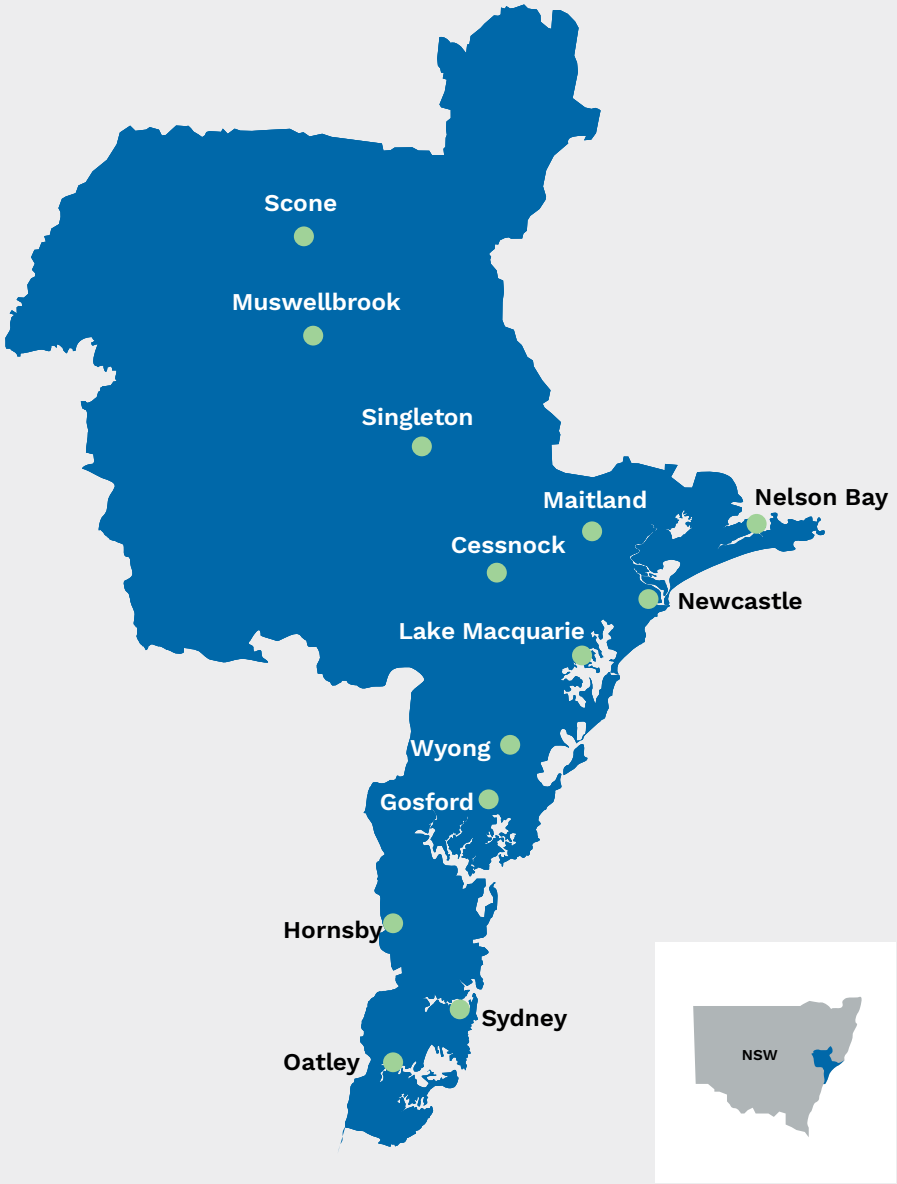
Reliable

We are forecasting to invest $1.7 billion in replacing older assets and $216 million on technology systems to maintain network reliability.

Sustainable

We are playing our role in encouraging customers to invest in renewable technologies while we develop the grid to support the energy mix of the future.

Ausgrid's network map



03 How we engaged with our customers and stakeholders

To help ensure our Regulatory Proposal meets customer expectations, we have been consulting with customers and stakeholders since late 2016. Our engagement process has involved over 2,500 customers, our Customer Consultative Committee, local government representatives and retailers. This section explains the approach we took to ensure that we engaged effectively and understood what our customers and stakeholders were telling us.

Understanding the long-term interests of our customers

We need to understand our customers' long-term interests so we can make the right network investment decisions now.
When we asked research participants what they were most interested in over the long term they said:

Price Management

Customers want energy network prices to stabilise or decrease – this was their top priority for Ausgrid.

Reliability

Reliability is a fundamental expectation and a particular concern for business.

Renewables & New Energy Technology

Most participants believe Ausgrid should be actively involved in the shift to renewable energy resources.

Safety

Safety is seen as essential, although not something that most customers think about every day. Safety should be a continuous point of emphasis.

Engagement

Participants felt we should focus more on improving public understanding of Ausgrid's responsibilities and provide information on how to save money on electricity bills.

Customers

The 'Customers at the Centre' program incorporated two-hour focus groups, as well as four-hour deliberative forums and a quantitative survey, in total over 2,500 customers. Participants in the forums reflected the diversity of Ausgrid's customers, comprising a good mix of culturally and linguistically diverse individuals; older and younger cohorts; businesses; and vulnerable customers.

We asked customers what they wanted from the network, their knowledge and attitude to electricity related issues, what they expected of Ausgrid and how we could become a more customer-centric business. We asked for feedback on early concepts for our Proposal, including potential price structures and investment plans.

In the deliberative forums, senior Ausgrid staff explained how our pricing works and shared models of different pricing structures so people could see the impact on their bills. Customers debated the pros and cons of different options and voted on the approaches they liked.

We also used online forums to test out ideas for encouraging customers to use technology, like solar panels and batteries, to help us manage peaks in demand. We also explored customers' attitudes to allowing their air-conditioners and batteries to be controlled by Ausgrid during times of network congestion in exchange for grid support payments.

Stakeholders

Customer Consultative Committee

We have fundamentally changed the way we engage with our stakeholders. We re-formed our Customer Council into the Customer Consultative Committee (CCC), to provide advice on our plans and service delivery; our Proposal; and how to become more customer-centric in everything we do.

The Reset Working Group (RWG) was established as a subset of CCC members, to provide more detailed feedback on the development of our Regulatory Proposal. Since their establishment, the new CCC and the RWG have each met seven times, alternating each month.

Our revised approach is most clearly captured in the Reset Engagement and Empowerment Framework (Table 1), which was co-developed and titled in conjunction with our CCC. It guides us to be:

- **Customer focused** – our primary focus is on the long-term interests of customers
- **Accountable and transparent** – key decisions are supported by robust evidence, using an open and transparent process that ensures stakeholders' views are clearly taken into account
- **Respectful and collaborative** – relevant stakeholders are consulted and involved at each key stage in respectful two-way conversation with information provided in a simple format.

Table 1.

Ausgrid Reset Engagement and Empowerment Framework

Customer focused	Primary focus on long-term interests of customers, with the best possible customer service we can deliver
Ethical and responsible	Safety never compromised, environmentally and socially responsible, always an ethical, responsible employer
Optimal solution	Delivering reliability and risk management with optimal revenue, investment levels and affordability. Incorporating market/ policy trends, technology and innovation
Fair and reasonable	Proposals for reliability, investment levels, revenue and pricing are seen as fair and reasonable by customers and stakeholders
Accountable and transparent	Key decisions supported by robust evidence, with an open and transparent process, and customers' and stakeholders' views clearly taken into account
Respectful and collaborative	Relevant stakeholders consulted and involved at each key stage in respectful two-way conversation; necessary information provided simply
Stakeholder-supported	Broad support from most stakeholders
Rules and regulation compliant	Meets all legal and regulatory requirements and in line with professional/industry codes

Local Government

We established consultation programs with local government representatives on street lighting and tree trimming.

Our consultation on street lighting included two meetings in 2017 with 41 local government councils represented and several sessions with the Southern Sydney Regional Organisation of Councils (SSROC).

On tree trimming, Ausgrid engaged with 33 Councils across Sydney, the Hunter and Central Coast. Our focus was on how we can better align our tree trimming practices with community expectations. In addition to these discussions, Ausgrid conducted risk assessment studies to assess the feasibility of potential changes in our practices.

Retailers

Retailers are responsible for billing customers, by bundling up our network charge along with the costs of generation, metering and other costs. We have met with AGL, EnergyAustralia, Alinta Energy and Origin Energy to discuss how we plan to structure our prices and how our plans might impact them.

Extended Stakeholder Consultation

We expanded our consultation program, after receiving the AER's approval to extend the submission deadline for our Proposal to 30 April 2018.

Extending the consultation program allowed time for an even greater level of community and stakeholder engagement on key aspects of our Proposal, specifically:

- Our capital expenditure and operational expenditure plans
- Operational performance
- Price impacts
- Pricing proposals.

The additional time also provided an opportunity to:

- Better understand the views of key stakeholders
- Identify key issues important to the communities we serve
- Work to resolve those issues that could be resolved
- Advise where a resolution could be achieved
- Highlight those issues where a resolution was still outstanding and propose a way forward.

The Extended Stakeholder Consultation Program began with the release of the Stakeholder Consultation Document on 30 January 2018. The document was designed to enable energy customers and stakeholders to understand the basis of our preliminary proposal and to provide further feedback. The document was presented in easily accessible, customer-friendly language.

Between 1 February 2018 and 23 March 2018 Ausgrid delivered eight independently facilitated consultation sessions, over 37 hours, with stakeholders from the following organisations:

- AER Consumer Challenge Panel
- AER representatives
- Council on the Ageing NSW (COTA)
- Energy Consumers Australia (ECA)
- Energy Users Association Australia (EUAA)
- Energy & Water Ombudsman NSW (EWON)
- Ethnic Communities Council of NSW (ECCNSW)
- NSW Council of Social Services (NCOSS)
- Public Interest Advocacy Centre (PIAC)
- Retailer representatives
- Southern Sydney Regional Organisation of Councils (SSROC)
- Total Environment Centre (TEC)
- Urban Development Institute of Australia (UDIA)

The sessions provided the opportunity for participants to ask questions on the content of our preliminary proposal. Ausgrid had a broad representation from across the business, including Ausgrid's Chief Executive Officer, Chief Operating Officer, executive general managers, senior executives and technical experts. Thirty-two of Ausgrid's most senior staff attended at least one session, and many attended multiple sessions, in order to be directly exposed to customer feedback.

Stakeholders raised numerous issues in relation to our pricing, opex and capex strategies – with Ausgrid fielding over 270 questions from participants over the course of the sessions held. The feedback received was valuable and has directly contributed to shaping our Proposal. In order to capture the value of the sessions, a summary of the issues raised and an overview of our responses, has been collated and is captured in our Extended Stakeholder Consultation Report.

In the following sections, we focus on the key themes that emerged through our customer and stakeholder consultation program, which commenced 18 months ago. These themes – affordable, reliable and sustainable – have guided the development of our Proposal and Ausgrid's corporate strategy. The Extended Stakeholder Consultation Program has been essential in providing specific feedback on where our preliminary proposal should be improved – it also reinforced our conclusion that 'affordable, reliable and sustainable' captures our customers' priorities for the next regulatory period.

04 What our customers and stakeholders have told us

Despite their very different energy needs and situations, our customers and stakeholders have three clear, common priorities. They want energy to be affordable, reliable and sustainable. The next three sections provide further details on our plans to deliver affordable, reliable and sustainable network services.

AFFORDABLE

What we heard

- Customers are challenged by rising prices with many experiencing 'bill shock'
- Customers want assurances that our capital proposals are consistent with a reasonable, long term expenditure profile
- Stakeholders were interested in the way we estimate how much customers value the reliable supply of electricity and how it drives capex
- Stakeholders support a transitional approach to pricing to assist low energy users and vulnerable customers as we change our pricing structures
- More information was needed on efficiency savings we achieved and how benefits were shared with customers.

How is Ausgrid responding?

We are:

- Aiming for zero real growth in value of our grid (regulated asset base) on a per customer basis
- Reducing prices with a 6% reduction in our component of electricity bills in real terms
- Locking in operational expenditure savings
- Focused on maintaining downward pressure on our expenditure plans and driving further efficiency improvements over time
- Adopting the AEMO value of customer reliability which is preferred by our stakeholders, and results in reduced levels of capex
- Ensuring customers most affected by new pricing structures are supported by transitional arrangements
- Looking first at where new technology, innovation and partnering will solve the network issues at a lower cost, rather than simply building more infrastructure
- Ensuring the benefits of efficiency savings flow through to customers.

RELIABLE

What we heard

- Customers value reliability and security, even though outages are rare
- Customers expect us to utilise existing spare capacity, rather than building new capacity
- Communities and councils are looking for a better balance between network safety and reliability needs, and the local community's aesthetic expectations for trees in their neighbourhoods.

How is Ausgrid responding?

We are:

- Targeting our expenditure plans to maintain current levels of reliability, only replacing ageing assets where there is no alternative
- Investing to protect against security threats
- Shifting load and reconfiguring the network to ensure that we utilise the existing network effectively
- Implementing our new network standard for vegetation clearances to allow less severe trimming and better canopy cover without compromising reliability or safety.

SUSTAINABLE

What we heard

- Customers and stakeholders support investment in renewables
- Customers want to be able to produce and consume electricity when and how they choose, for example, being able to feed electricity back into the grid
- Customers and stakeholders expect energy companies to support the transition to a lower carbon economy
- Local councils would like to implement options to reduce carbon emissions and reduce costs via accelerated replacement of streetlighting to LED (light emitting diode) technology for residential roads and main roads.

How is Ausgrid responding?

We are:

- Making it easier for residential customers to install solar panels and batteries by streamlining our connection processes
- Investing $58 million to deliver the 'future grid' sooner
- Investing an additional $41 million in an Advanced Distribution Management System, a software platform required in order to develop an intelligent modern grid
- Conducting demand management trials to incentivise solar and battery uptake and encourage investment in energy efficiency where it reduces the need for network investment
- Playing our part in implementing the Network Transformation Roadmap, developed by the Energy Networks Association and CSIRO
- We are progressively installing energy efficient LED lighting. We have given councils a list of options, including accelerated replacement of streetlighting to LED, so they can select a charging structure that best suits their needs.

05

Affordable – reducing and stabilising network bills

What happened in the past?

In the past, Ausgrid's capital investment profile was not stable. Underinvestment in the early 2000s led to a significant rise in the need to invest to replace ageing assets from 2005. Deterministic reliability standards, which were in place at the time, required us to provide a mandated level of reliability increasing the need to invest. As a result, we reached peak investment during the 2009–14 period.

Customers benefited from the increase in reliability, however the network component of power bills doubled during this period and affordability became a major concern for our customers.

Since this time, there has been a shift to less stringent and probabilistic reliability standards. Customers will now benefit from the investment of the past which will allow us to maintain a reduced level of capital expenditure, stabilise our investments over the longer term, and play our part in making power bills more affordable.

We're already doing better

Since 2013, we have cut our operating cost base by 19%, embedding $100 million in annual operating cost savings. As a result, the average network component of electricity bills will fall from 54% in 2013 to 38% in 2018. **This is a reduction of 30%**.

Since 2014 network charges for a typical residential customer have fallen by 17%. This means that the network charges covering distribution, transmission and NSW government Climate Change Fund are now 17% lower than they were at the end of the last regulatory control period.

What will be different in 2019–2024?

We have heard directly from our customers on the importance of affordability. In response we will continue to drive efficiency improvements so we can keep prices as low as possible, without compromising safety or reliability.

Our program will replace only what needs to be replaced, augment just enough, and invest on a no regrets basis in light of emerging technologies. Rather than simply planning for more network infrastructure, we are looking first at where new technology, innovation and partnering with other companies and our customers will solve the problem at a lower cost. This includes demand management solutions. We will partner with customers to reduce the need to replace ageing network infrastructure by leveraging batteries, smart meters, smart appliances and innovative rebate offers which support a low-carbon environment.

There will be a renewed focus on customer bill outcomes with a price reduction in the first year and no real price increases thereafter.

What we have achieved

Network charges

17% reduction in nominal terms since 2014 per typical household

Network component of bills

30% reduction since 2013

Operating expenses

19% reduction in real terms since 2013

Capital expenditure

57% reduction in real terms since the peak investment in 2012

If the AER accepts our Proposal, we will:

Reduce our component of network prices by 6% in real terms in 2020

Ausgrid's component of the typical household customer's network bill will reduce by 6% after 1 July 2019. When transmission and the NSW Climate Change Fund charges are taken into account the total network bill will reduce by 4% and then remain unchanged in real terms over the next four years to 2024. For our customers, prices will increase by less than inflation over the five-year period.

Lock in operating expenditure savings

Our opex proposal embeds a $100 million per annum saving that we have achieved from transforming our business. This saving is equivalent to approximately $76 per customer, per year. We will continue to put downward pressure on opex by:

- Continuing to look for and make changes that will make us more efficient
- Managing cost increases above our opex forecasts without passing these through to customers
- Being more innovative in the way we use new technology and work with other businesses and our customers
- Streamlining our internal processes.

Ensure zero real growth in the value of the regulated asset base per customer

To improve affordability in the long term, our network planning approach should enable us to meet the changing needs of customers without needing more assets per customer. We will do this by:

- Supporting and encouraging customers to manage peak demand
- Being more efficient in the way we spend capital.

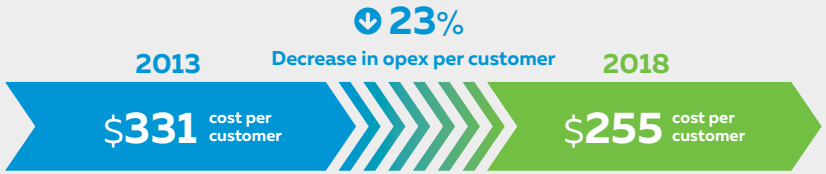
Change the pricing structure to increase efficiency whilst avoiding bill shock

Our new pricing strategy will lay the foundations for a future energy system that meets our customers' needs at the lowest sustainable cost. It is designed to lower overall system costs by rewarding customers who use the network more efficiently and by avoiding unacceptable bill impacts.

Our proposed level of capex is expected to be maintained into the future even under a growing customer base – so that prices per customer will decline on average.

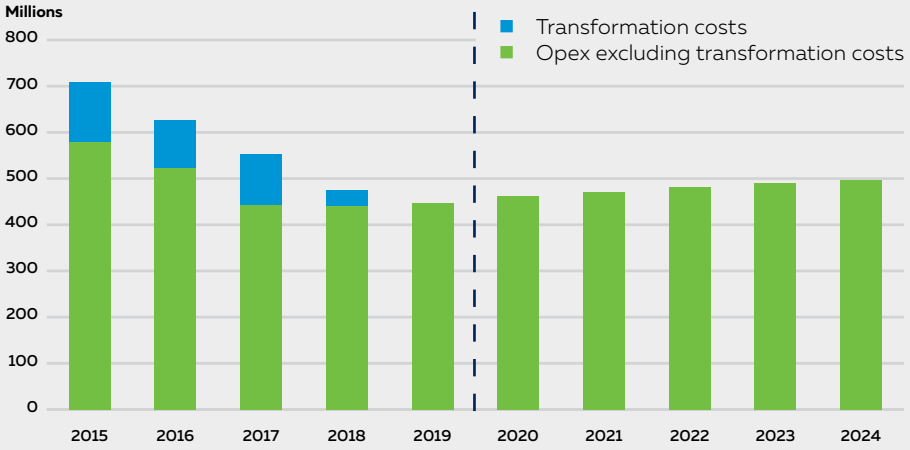
Network costs don't come down when we use less power – they come down when we use less power at peak times.

Comparison of operating cost per customer ($, real 2019)

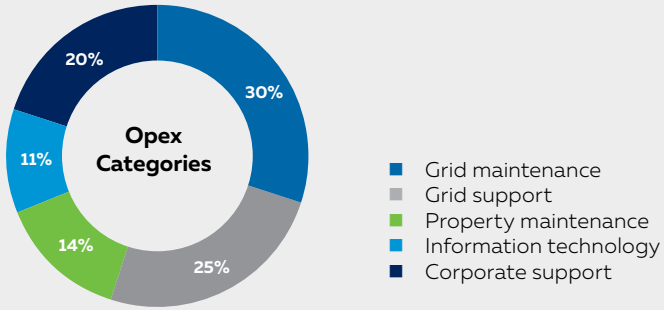


Source: Ausgrid

Overall opex spend: actual and forecast



Source: Ausgrid



Source: Ausgrid

Why demand management is important to keep prices down

In the past, deterministic reliability standards meant we built the grid strong enough to ensure customers would continue to be supplied with electricity under almost all circumstances, including the very unlikely event that a failure in part of our network would occur during the peak periods. This effectively required us to provide a level of redundancy in all parts of our network and, at least in part, accounted for our peak investment from 2009 to 2014 and the corresponding impact in customer bills. The reliability standard has now changed, which means that we can take a different approach to meeting our customers' demand at peak times and invest in reliability using smarter approaches, rather than simply building new infrastructure.

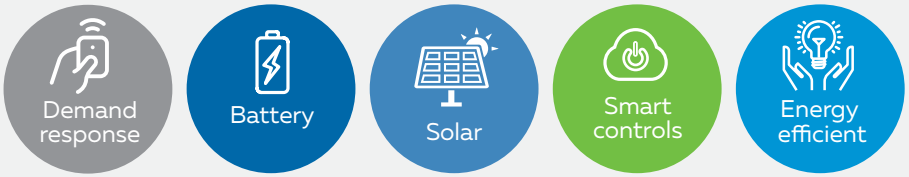
Partnering with customers to better manage electricity demand from the grid is called 'demand management'– and we consider it is vital to meeting our customers' needs. With these new and emerging technologies to complement existing demand management solutions, Ausgrid can lower costs for all customers. It will help us to deliver the same levels of reliability with a lower cost asset base by reducing the need for network investment.

In our Extended Stakeholder Consultation, stakeholders were uncertain whether we were giving sufficient attention to the value that demand management can deliver. In response to stakeholder feedback, Ausgrid is allocating an additional $5 million per annum over the period to demand management. Our analysis indicates that this expenditure will defer up to $66 million of capex.

Today, new technologies have given us better ways to handle peak demand periods. A smart grid and smart devices can make it easier for customers to use less energy at peak times, and use solar panels and batteries to support the grid during the peak.

Ausgrid has also increased funding for network innovation and smart network trials to a total of $58 million. This funding will directly assist in network transformation and deliver the future grid sooner and lead to lower future network costs, through implementing innovative non-network solutions to meet demand. We have increased our proposed expenditure in this area as a result of the specific feedback we received in the Extended Stakeholder Consultation, which indicated that we should be more innovative in our approach.

Smart demand management



A new energy ecosystem needs a new approach to pricing

We are moving into a new world where customers will increasingly be producers as well as consumers of electricity and where demand management becomes an integral part of the energy ecosystem. These changes represent a paradigm shift in the energy sector which brings with it new challenges, but also new opportunities. Right now, the way we recover network costs from our customers is based on the outdated concept of a one-way flow of electricity. This means, if we continue with our current pricing structure, we will create an energy ecosystem that is more expensive to operate than it needs to be.

To avoid this, we are proposing to change our pricing structures to be relevant to the grid of the future. Our new pricing approach will:

- Focus on the costs of providing network connection services, not on how much energy flows in one direction. Price structures will reflect these largely stable costs, similar to how customers pay for internet access, and the additional infrastructure costs associated with using the network at times of congestion.
- Provide incentives for distributed energy resource investments and reward customer behaviours when they reduce the network cost for the community; this way those that save existing and future network costs reduce their bills.
- Promote bill stability by reducing the potential for a customer's bill to rise due to the consumption habits of other customers.

We must start now, but move slowly and be sure we are heading in the right direction

We will make the changes gradually to ensure the transition is as smooth as possible. We will:

- Avoid sharp swings in customer bills and give customers time to plan
- Start by transitioning away from one-way energy charges and, when smart meters allow, continue the transition to charging arrangements which are best suited to the network of the future
- Ensure these changes make the next steps in the transition easier for customers
- Consult with customers before taking those next steps.

In finalising our pricing approach, we have listened carefully to the specific feedback received from stakeholders during our Extended Stakeholder Consultation. In response we are introducing greater pricing flexibility, by introducing a demand pricing structure that will initially have no customers assigned to it, but that can be implemented if our research program indicates that it will deliver better outcomes for our customers.

In our Tariff Structure Statement, which sets out our proposed pricing and charging structures, we will also provide commentary on our strategic long-term pricing 'end point', in order to help stakeholders understand, and challenge, Ausgrid's proposed transition to a more efficient price structure. Ausgrid will also conduct regular Pricing Working Group meetings to keep stakeholders informed so that they can provide timely feedback on our progress.

06

Reliable – maintaining a reliable and secure network

What happened in the past?

In the early 2000s, Ausgrid did not invest enough in renewing and upgrading the network. To improve reliability, we were required to increase our capex significantly in the 2009–14 period. This expenditure improved our reliability performance significantly for the benefit of our customers, but it also contributed to rising electricity prices.

Since 2012, we have cut our total capex by more than 57% as part of our transformation program. The cuts have been assisted by a change in the reliability standards which allow more discretion on when and how to invest in the network, and the use of smarter engineering to enable outages to be detected, isolated and restored in an increasingly automated way, rather than simply building new infrastructure to ensure that outages never occur.

We're already doing better

We have an excellent track record in restoring power quickly and safely following natural disasters. In April 2015, Ausgrid's network area was hit with a 'super storm' that resulted in 22 local government areas being declared national disaster areas. The storm damage caused widespread power outages that affected 369,000 (over 20%) of our customers. In an exceptional response in adverse weather, within five days we restored power to almost all of our customers.

What will be different in 2019–2024?

In 2019–24 we will continue to maintain high levels of reliability and safety while taking a different approach to the way we spend money on the grid. We will keep capex to a minimum by only replacing ageing assets where there is no alternative. As a result of this approach, our proposed capex can be maintained into the future, even under a growing customer base, so that network costs will decline on a per customer basis.

Directly in response to stakeholder feedback, rather than simply building more infrastructure, we will look first at where new technology, innovation and partnering with other companies and our customers will solve the network issues at a lower cost. This will support our customers' investments in distributed energy resources, such as solar and batteries. This will also ensure any investment is sustainable, helping to keep prices stable for customers over multiple regulatory periods in the future.

The figures below provide summary information on our capex plans for the next period. We also provide useful historical context to our forecasts, showing the journey we have taken to a lower, more sustainable level of network expenditure.

Our customers want us to maintain our reliability performance. To meet this objective at the lowest possible cost, we optimise our opex and capex to manage the risk of outages and improve our response times when outages do occur. We replace assets that are in poor condition. We also install new assets to ensure we can reliably connect new customers, and meet increases in demand.

Capex plan and forecast summary

Customers have given Ausgrid feedback that they want to avoid future peaks and troughs in expenditure and the corresponding impact on prices by setting a sustainable level of capital expenditure going forward. Given the regulatory framework, revenues per customer represent a good proxy for the costs Ausgrid incurs providing network services.

Efficiency savings

During our Extended Stakeholder Consultation Program, we received important feedback that we needed to provide more explanation on the efficiency savings that we achieved during the current regulatory period, and how these benefits are shared with customers. Stakeholders also wanted to understand why capex could not be maintained at the lower levels achieved in the current period. These important questions are covered in further detail in Attachment 5.01 in our Proposal, and in our Extended Stakeholder Consultation Report.

In broad terms, we can assure our stakeholders and customers that:

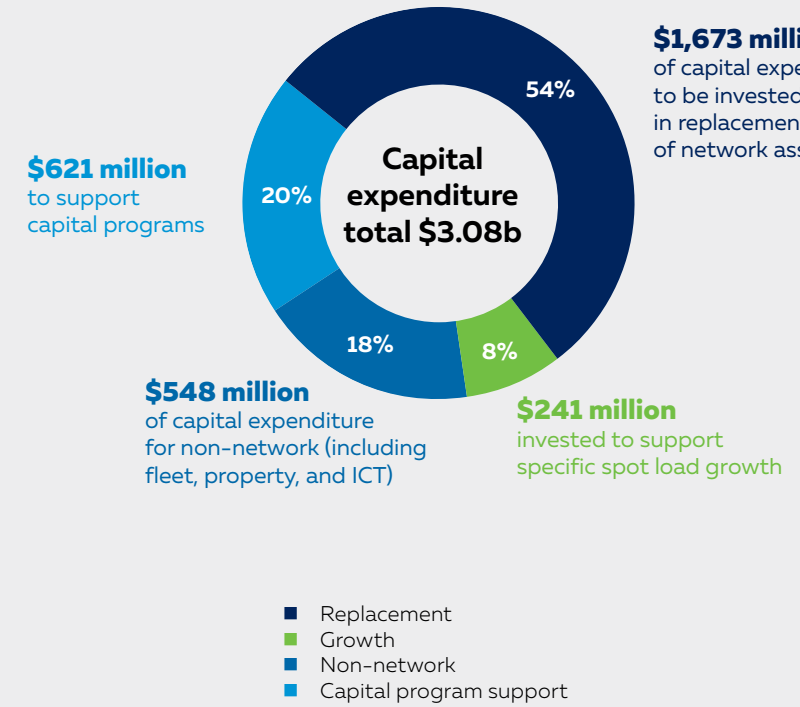
- The benefits of efficiency savings in capex are shared with customers (all savings flow directly to customers in later years) in accordance with the regulatory framework
- Our proposed capex balances the risk of deteriorating reliability performance and safety against cost considerations.

Stakeholders also sought further information to demonstrate the efficiency of our capital expenditure program. Specifically, customers wanted to understand the consequence of the 'do nothing' option for replacement expenditure. To provide greater confidence regarding our investment strategy, we conducted two capex sessions in which we stepped through, in detail, our approach to both augmentation and replacement expenditure. The presentation highlighted the costs, in terms of safety, reliability and environmental impacts, of 'doing nothing', and the economic basis for our proposed expenditure.

In our Extended Stakeholder Consultation, we also received important feedback on aspects of our expenditure proposals, including the impact of battery take-up on our demand forecasts. As explained in the Extended Stakeholder Consultation Report, we have addressed the issues raised and updated our capex proposal accordingly.

To achieve long-term sustainability, we plan to decrease our total capital expenditure by 1.3% to $617 million per annum. This is on top of the 57% reduction already achieved.

Allocation of Capital expenditure



Note: Numbers may not align due to rounding.

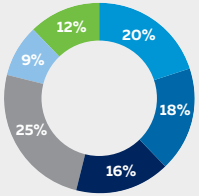
Our proposed capex achieves a balance between long-term affordability and service performance. We will renew our ageing network and invest in programs that maintain safety and facilitate our transition to a future grid. The key elements of our capex program are summarised below.

Balancing long-term affordability and service performance

We plan to spend $1.7 billion on replacing ageing assets

Of the $3.1 billion total capex, $1.7 billion will go towards replacing ageing assets, which is a decrease of 5% compared to the current period. Almost a quarter of our assets are more than 50 years old. We will need to replace them based on asset condition and risk assessment in order to continue to provide the reliability our customers want.

We will also invest in new technology such as an Advanced Distribution Management System (ADMS) to provide the building blocks for a reliable future grid, the benefits of ADMS are discussed further on page 23.



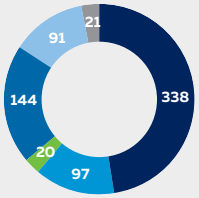
54% of expenditure will be invested in replacing ageing assets

- Zone substation
- Sub-transmission power lines
- Distribution substations
- Power lines
- Poles
- Others

We expect peak demand will increase by 1.6% per year between 2019 and 2024.

We plan to invest $241 million to connect new customers, including data centres

Of the $3.1 billion total capex, $241 million is required to invest in connecting Sydney's growing population and large industrial customers to the network. The next five years will see a rapid increase in connection needs for infrastructure projects, such as rail and transport, together with data centres which are essential to building Australia's digital economy. We must prepare the network to power these important building blocks of the future.



8% of our capital expenditure will be used to support the 710MW increase in peak demand from new customers

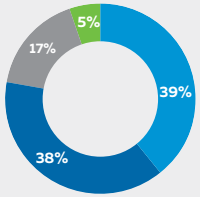
- Residential developments
- Data centres
- Mining
- Rail
- Roads
- Other

Note: Numbers may not align due to rounding.

We plan to invest $548 million on ICT, property and fleet over five years

We are investing to modernise the way we do business in order to deliver improvements in our customer service. To do this, we are implementing a new digital customer strategy including new systems and undertaking a website rebuild to make it easier for customers to communicate with us via their preferred channel. Digital maps show customers the location of network outages and allow faults to be reported.

The majority of our ICT investment relates to updating the systems that support our business-critical functions, and on continuing our transition to cloud based services. We are also investing in modernising and automating our services to customers. For example, we will be investing $30 million in workplace technology to provide a more streamlined and efficient service to our customers. This involves upgrading mobile devices so our field workers can directly access key business applications and corporate data while working in the field away from offices and depots. It will also streamline project planning and work activity in the field.



18% of capital expenditure will be used to modernise our property, ICT and fleet which will improve our customers' experience

- ICT and innovation
- Property
- Fleet
- Plant

Note: Numbers may not add to 100% due to rounding.

We will invest $208 million over five years on replacing and upgrading five of our 19 primary depots as well as upgrading offices. In most cases, these properties are over 50 years old and are at risk of not meeting basic workplace standards. In some cases, replacement of corporate property will result in surplus land which will be sold and used to lower the regulatory asset base to the benefit of our customers.

We will maintain the significant savings we have achieved in our fleet, which has been reduced by approximately 50% in the last five years.

In summary, we consider that our capex plans provide the best price-service outcome for our customers, both now and for subsequent regulatory periods.

07

Sustainable – preparing for energy market transformation

What happened in the past?

In the past, the electricity network was a one-way transport system that moved electricity from remote, large scale generators to industrial, commercial and residential customers.

Looking forward, our customers have told us that they want to be able to produce and consume electricity, when and how they choose, including, for example, being able to feed electricity back into the grid.

Residential customers are particularly interested in: solar power, solar hot water, home monitoring of usage and costs, home battery storage, home energy management systems and electric vehicles. About 120,000 Ausgrid customers have already installed solar power systems and 1,500 have installed battery storage systems.

We're already doing better

In recent years, we have undertaken important initiatives in response to new technology and our customers' changing needs:

- Lowered the cost of connecting solar and batteries and reduced red tape by making the process faster and simpler for our customers
- Implemented the innovative CoolSaver program where we partnered with 150 residential customers to reduce peak demand from air conditioners using new power saving technology
- Surveyed residential and business customers about solar, batteries and energy efficiency to better understand their motivations and preferences for installing new technology, and willingness to partner with Ausgrid to reduce demand
- Delivered a large-scale peak rebate program for business customers to refine demand management solutions from this customer segment
- Investigated the ability of a grid battery to reduce network demand and optimise solar operation for customer benefits
- Explored innovative approaches to reducing demand from hot water systems
- Tested the charging infrastructure, vehicle performance, behaviour and grid impacts from electric vehicles
- Explored the ability of residential batteries and fuel cells to reduce customer bills and network demand.

What will be different in 2019–2024?

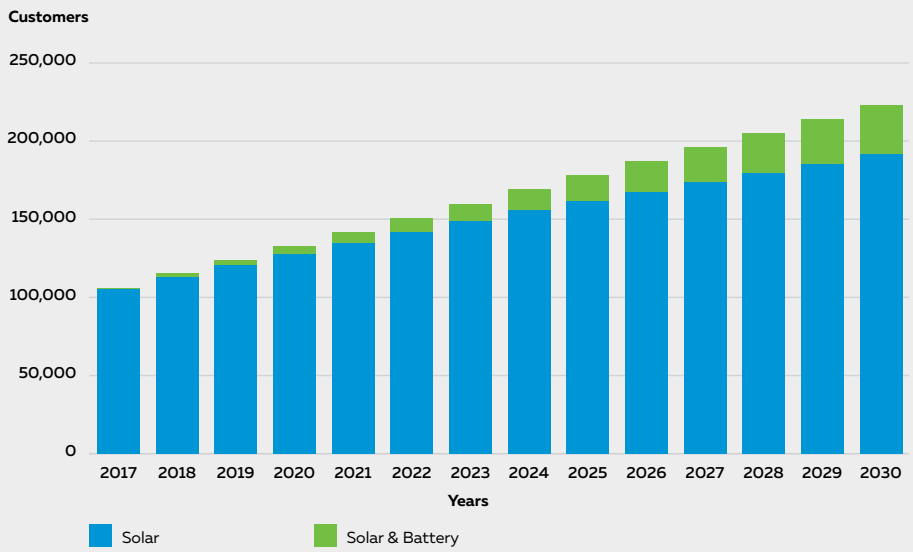
We are working to support emissions reduction via price reform, innovative trials and making the connection process easier for new network assets including, those that deliver emissions reductions.

We are also focused on managing system demand by supporting and encouraging customers to take up demand management, distributed energy resources and smart meters, as well as investing in grid technologies that enable all stakeholders to maximise the value of these investments.

Our proposal will continue the process of transforming our passive distribution network into an interconnected flexible platform that supports the transition to a lower carbon economy at the lowest cost.

The figure below shows our projections of solar and battery take up over the next two regulatory periods. We must be equipped to address the implications of this changing use to deliver a lowest cost, sustainable network for our customers.

Number of customers with small-scale solar and battery systems (2016/17–2029/30)



Source: Ausgrid.

If the AER accepts our Proposal, we will:

Undertake the initiatives set out below. These initiatives contribute to achieving a sustainable grid, which will better meet the long term needs of our customers and support the transition to a lower carbon future.

Support customers to generate their own power

We recognise the future isn't a one-size-fits-all grid system. We are making it easier for customers who wish to invest in solar power by:

- Lowering the cost of connection
- Making connection fast and simple by reducing red tape
- Trialling mini grids that help customers to generate, store and manage power so we understand what type of technology is needed to keep mini grids stable, reliable and delivering good quality power.

Innovate to evolve our network

During our Extended Stakeholder Consultation, we received feedback that we need to be more innovative in our planning and investment approach. Ausgrid agrees so we are investing $58 million for innovative projects and trials, to deliver the 'future grid' sooner.

Other plans include partnering with customers to reduce the need to replace ageing network infrastructure by using batteries, smart meters, smart appliances and innovative rebate offers. We will also conduct innovative projects to refine demand management solutions, including identifying the optimal mix of solar, batteries, energy efficiency and embedded generation to help us defer retiring or replacing network assets.

Invest an additional $41 million in an Advanced Distribution Management System

This software platform is required in order to develop an intelligent modern grid.

Our initial investment will set up the core of this platform. Eventually, as we continue to invest in future regulatory periods, this technology will allow us to:

- See what's going on in the grid in real time – so we'll know exactly when and where an outage occurs. Right now, we have to send a crew to find the tree that pulled down a power line. In future, the grid will tell us where the fault is.
- Add more renewables into the grid than the previous system allowed.
- Optimise orchestrated demand management solutions, such as partnering with customers to enable smart control of batteries and appliances to lower peak demand.
- In future, potentially enable peer-to-peer trading.
- Control batteries and appliances to help reduce power bills, with customers' permission.
- Manage the grid better through changes such as increased use of electric vehicles.

Transforming our public lighting service

We will transform our public lighting service by completing a mass rollout of 125,000 LED luminaires – equal to half of all streetlights on public roads in our service area. The lower energy consumption of LEDs will reduce our carbon footprint, delivering a more sustainable – and affordable – service to our customers.

Protect customers who can't – or don't want to – use new technology

We know that not everyone can or wants to adopt new technology. We will remain focused on our core service of providing safe, reliable and affordable network services for all our customers.

08 How we keep the public and our employees safe

Protecting the public

We have a Public Electrical Safety Awareness Plan, which we report on every year. As part of this plan, we are running public safety campaigns, such as:

- **Don't Work Blind** – launched in May 2017 on radio, social media and outdoor advertising. The campaign reminded construction workers to find out and mark where overhead wires and underground cables are before any work starts.
- **Storm safety** – including radio advertising and social media safety tips, proactive storm safety alerts through Facebook, Twitter and radio coverage.
- **Bushfire risk** – including a Bushfire safety guide for property owners, newspaper and radio advertising, a social media campaign and an online vegetation-reporting tool.

Teaching primary school children how to stay safe around electricity with programs developed with the NSW Department of Education and Communities, including an:

- Electricity Safety Week resources pack sent to 95% of primary schools in our area
- Electricity and Safety Unit for years five and six.

Providing public information on:

- What to do in an emergency
- How to stay safe at home
- How to work safe around electricity – including an online library of safety information, videos and fact sheets.

Making sure our employees go home safe

Ausgrid's approach to Health and Safety is based on our values of: Work Safe, Live Safe. Safety is paramount. We live safe, call out, speak out, stop, think and look after ourselves and each other. We encourage everyone at Ausgrid to: 'Put safety first in everything I do'. Recently, we launched a 'Safety Reset' program, where we took time out to pause and think about the way we do things at Ausgrid. This led to a clear plan to deliver an organisation where people:

Act Safely, responsibly, respectfully and trustfully

Feel Safe, proud and empowered, valued, respected, connected and supported

Are Leaders in safety, trained and capable, partners with our service providers and tech enabled

09

What else is in our proposal and where to find more information

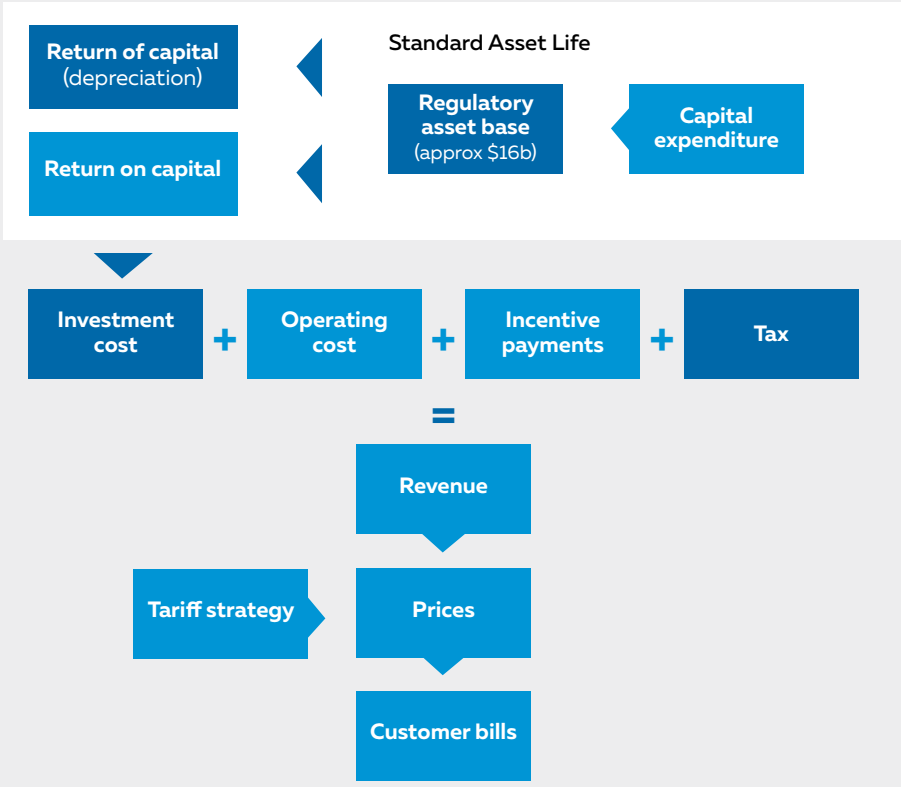
The AER will examine every aspect of our Regulatory Proposal, which includes detailed information on:

- Capital expenditure
- Operating expenditure
- Return on capital invested
- Asset depreciation
- Tax liabilities
- Incentive schemes

These elements are sometimes described as the 'building blocks' because they determine our revenue requirements and the prices our customers pay for using the distribution network.

Key components of our proposal and how they fit together

Further details can be found in our Proposal.



In the earlier sections of this paper, we provided a summary of our expenditure plans. In the paragraphs below, we provide an overview of the remaining components of the 'building blocks' shown above.

Return on capital invested

We receive an allowance for return on capital to fund the efficient costs of debt and provide a reasonable return on equity. We calculate the return on capital based on the value of opening asset base, the allowed rate of return and forecast capital expenditure.

In the next regulatory period, our proposal applies the AER's 2013 Rate of Return Guideline. We propose an overall allowed rate of return (nominal, vanilla) of 6.33% for the first year. This rate of return will be updated annually for changes in the benchmark allowed return on debt.

Financial market evidence indicates equity investors perceive a historically high level of risk across the equity market at present. At the same time, there is some evidence that electricity network businesses are facing increased risks relative to the market as a whole. This evidence suggests a higher return on equity than we have proposed for the 2019–24 regulatory period. However, we are committed to delivering positive price outcomes for our customers over 2019–24 and so have not factored these increased risks (which would increase our required rate of return) into our proposed rate of return at this time.

Asset depreciation

We receive an allowance to recover the cost of our investments as they depreciate over time. This 'return of capital' or depreciation is calculated using inputs, such as the projected value of the opening asset base as at 1 July 2019 and the assumed remaining lives of assets.

In recent regulatory reviews, network companies have proposed a change in the way that depreciation is calculated (called a 'year by year tracking' approach) so that it more accurately reflects when assets will reach the end of their useful life and therefore need to be replaced. The AER has accepted these changes, although it prefers an averaging approach.

We initially considered adopting the 'year by year tracking' approach. However, we calculated that it would increase our depreciation costs in the next regulatory period. Given our customers' concern regarding affordability and the feedback we received on our preliminary proposal, we have reverted to the AER's preferred averaging method. As noted earlier, this change has reduced our revenue requirements in the next regulatory period by $100 million.

Tax liabilities

We receive an allowance to meet our income tax liabilities, taking into account the benefit that shareholders receive from imputation credits. A key issue in the calculation of our tax liabilities is the value attributed to imputation credits, which is known as gamma. While this remains a contentious issue, we have adopted a value of 0.4, which is consistent with the AER's recent determinations and its 2013 Rate of Return Guideline.

Incentive schemes

We receive a revenue increase or decrease based on penalties or rewards from incentive schemes that applied in the 2014–19 regulatory period.

Alternative control services

The 'building block' components described above relate to our standard control network services – the services that our customers use regularly and pay for through network prices. In addition to these services, we also provide 'alternative control services', which are typically requested by customers as a particular need arises, such as moving house or seeking a new connection. Public lighting (street lighting) and some metering services are also classified as 'alternative control services.'

In the next regulatory period, the most significant proposed change to our alternative control services relates to public lighting. We propose completing a mass rollout of 125,000 energy efficient lights that will lower our carbon footprint and lead to a more sustainable and environmentally responsible service.

Further detailed information on all of the matters discussed in this paper are provided in our Proposal.

10

How our proposal will better serve our customers

Ausgrid is making important changes so we can serve our customers better. Our focus has moved from being good at building a grid to understanding and delivering the services our customers need and expect.

The plans we are asking to be approved in our Proposal will allow us to offer our customers:

AFFORDABLE

- Lower network prices within electricity bills
- Locked in operating savings
- Capital expenditure efficiencies supported by effective demand management
- New pricing structure to improve efficiency and minimise bill shock.

RELIABLE

- Prudent and efficient expenditure that seeks to maintain current levels of reliability
- Infrastructure to connect new customers, including data centres
- Cyber security to protect the grid.

SUSTAINABLE

- Rewards for using off-peak power
- Support to generate, store and sell solar energy
- Evolution to a smart grid, to support an energy mix that includes more renewables.

We seek to deliver services and make smart, responsible investments that are in the long-term interests of our customers. Our proposal will give our customers services that are affordable, reliable and deliver the sustainable electricity supply they are asking for.

Delivering

Increased savings for customers

Maintaining

High levels of reliability

Preparing

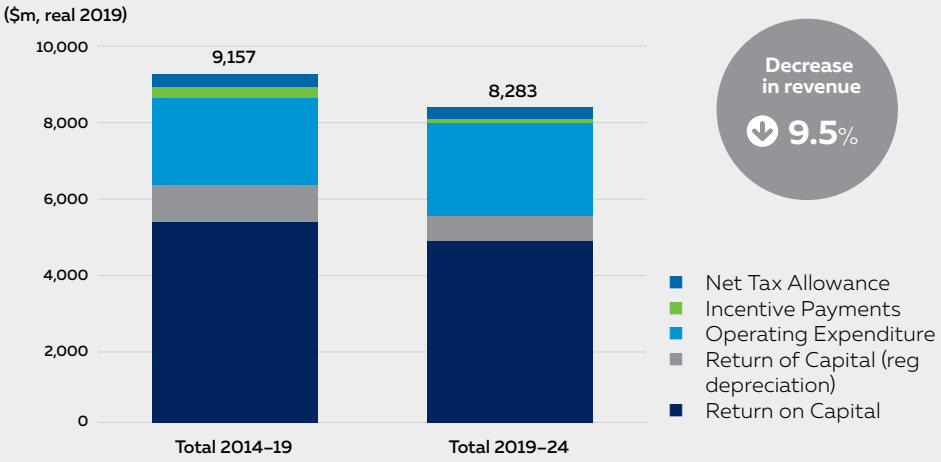
Our grid for a lower carbon future

Our Proposal will:

- Reduce prices in the short term and ensure the choices we make today don't unnecessarily increase prices in the future
- Keep costs down as much as possible while maintaining network reliability and security, and managing the transition to more renewable and distributed energy sources
- Move towards fair pricing structure appropriate for the future grid, but do it in a way that manages the impact on vulnerable customers.

We are asking for 9.5% less revenue in the next period. This reduction reflects lower proposed operating expenditure and financing costs but does not account for any adjustments resulting from resolution of the remitted 2014–19 decision.

Building Block Revenues 2014–19 v 2019–24



The table below summarises the benefits that our proposal will deliver to our customers. We also highlight the risks for customers and how we will manage them.

BENEFITS FOR CUSTOMERS	HOW WE WILL ACHIEVE THEM
Improved affordability	Lower total network costs
Vulnerable customers will be assisted	'Safeguard pricing' for vulnerable low use customers
Improved customer experience through easier access to the information they need	Focus on customer service and engagement and our digital customer strategy
Network price stability	Sustainable network investment over the long term
Maintain reliability	Focus on investments with reliability benefits
New uses for the network: distributed energy resources, selling energy, trading, demand management	Focus on future use of the network and invest to meet the changing needs of customers

RISKS FOR CUSTOMERS	HOW WE WILL MANAGE THEM
Bill shock	Use sustainable investment and price transition strategies to avoid potential bill impacts from price changes
Pace of industry change means the assets we build tomorrow may not be right for the future	Where possible and efficient use demand management and innovative solutions rather than building new assets
Power outages due to loss of upstream supply or damage/fault on our network	Replace ageing parts of the network and those in poor condition at the right time
Cyber attacks compromising the security of the network and potential loss of data	Invest in cyber security measures to protect the network


Ausgrid