31 January 2023

Attachment 3.6: Draft Plan for 2024-29

Ausgrid's 2024-29 Regulatory Proposal

Empowering communities for a resilient, affordable and net-zero future.

Ausgrid

Our Draft Plan for 2024-29

For consultation

September 2022

Empowering communities for a resilient, affordable and net zero future

Ausgrid

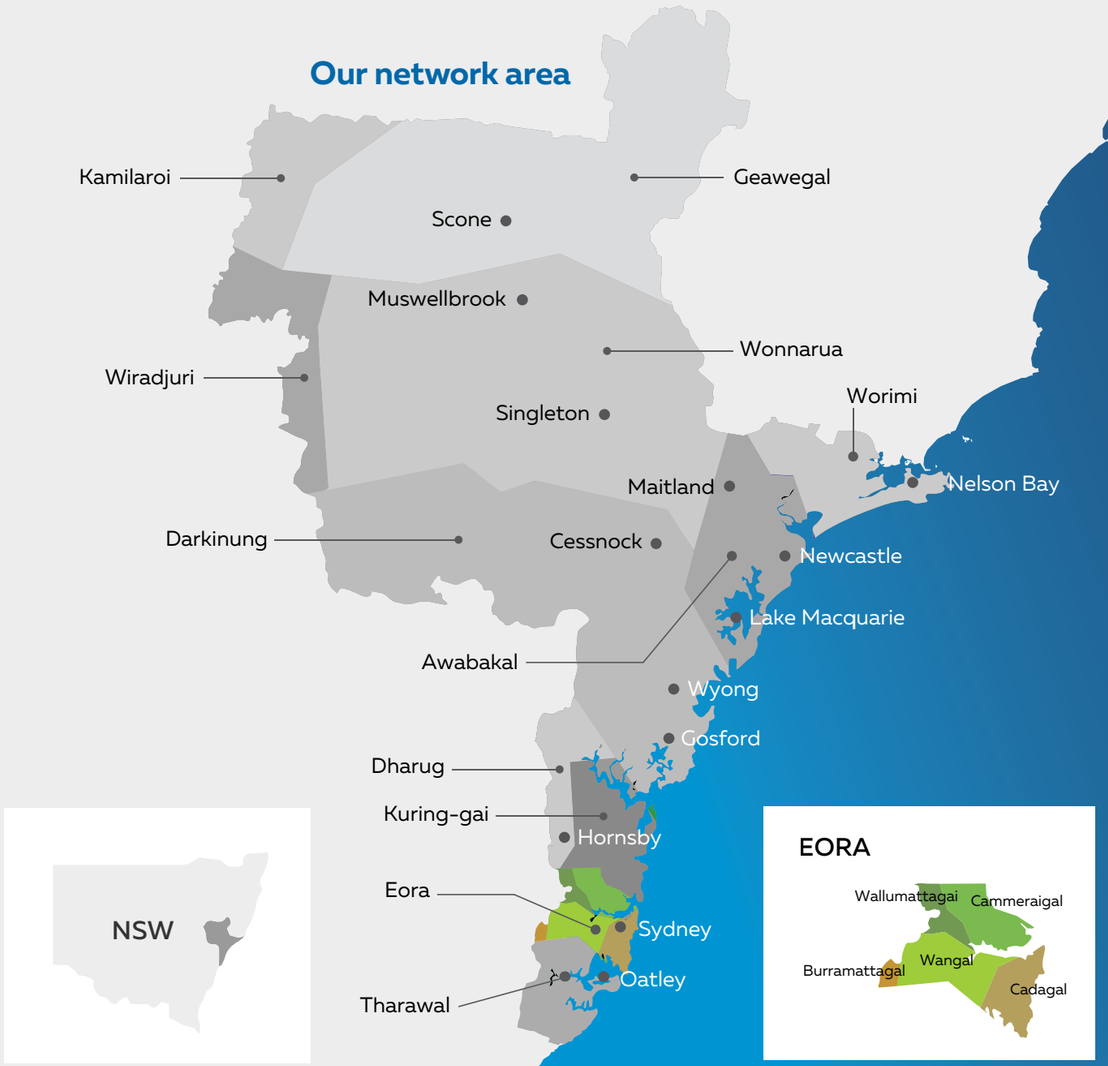
Acknowledgment of Country

We acknowledge the Traditional Custodians of the lands where the Ausgrid distribution network is located, and we pay our respects to the elders past, present and emerging.

As set out in our Reconciliation Action Plan, it is important that this recognition leads to industry wide support and understanding of the knowledge, stories, languages and experiences of Aboriginal and Torres Strait Islander peoples, as our way of paying respect, and contributing to, some of the oldest continuous cultures of the world.

Our network and operations span the traditional country of 17 languages, tribal and nation groups in Sydney, the Central Coast and Hunter regions of New South Wales. We want to lead and foster a workforce, and approach to our operations, that embraces the learnings, voices, cultures and histories of these Traditional Owners into our own organisation.

Our network area



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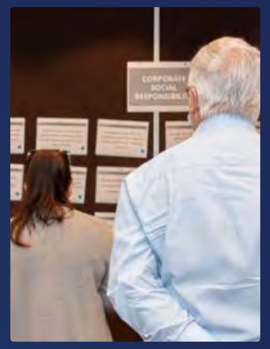

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Our vision is for communities to have the power in a resilient, affordable, net zero future

Our role in the communities we serve

Ausgrid owns and operates the network of substations, powerlines, underground cables and power poles that deliver power to communities across large parts of Greater Sydney, the Central Coast and the Hunter.

Each day we build, operate and maintain this distribution network with a focus on providing a safe and reliable energy supply. The wide range of services we provide is illustrated on the **next page**.

We serve our 1.8 million households, small and large business customers, as well as all those who rely on and benefit from their energy supply.

In addition to these customers, our communities include our delivery partners such as energy retailers, local councils and accredited service providers (**ASPs**), as well as customer advocates and government agencies.

Purpose of this Draft Plan

Every 5 years, we submit a proposal to the Australian Energy Regulator (**AER**) setting out our plans for serving our communities in the 5 years ahead, including our planned expenditure and pricing.

The AER reviews our proposal to ensure it reflects the services our customers value at the lowest sustainable cost. It then determines how much revenue we can recover from our customers over the 5-year period. This process is known as a 'regulatory reset'.

Our next regulatory reset is approaching. We must develop a proposal for the period from 1 July 2024 to 30 June 2029 and submit it to the AER in January 2023.

We are currently engaging with our communities to inform this proposal. This Draft Plan outlines what we are hearing through this engagement, and our current thinking on how we might respond in our proposal.

This is the first time we are releasing a Draft Plan for consultation before developing our proposal for the AER. It marks a significant step forward in how we engage with our communities, and we are excited to share it with you.

Engaging early and often gives us the opportunity to deeply consider our communities' evolving ambitions for an affordable, fair, and more sustainable future, and what those ambitions mean for the services we provide.

This Draft Plan is based on our consultation to date. But our process is not over. We want our proposal to balance our communities' expectations of our services with their need for affordable services. This is not easy, and we need your help.

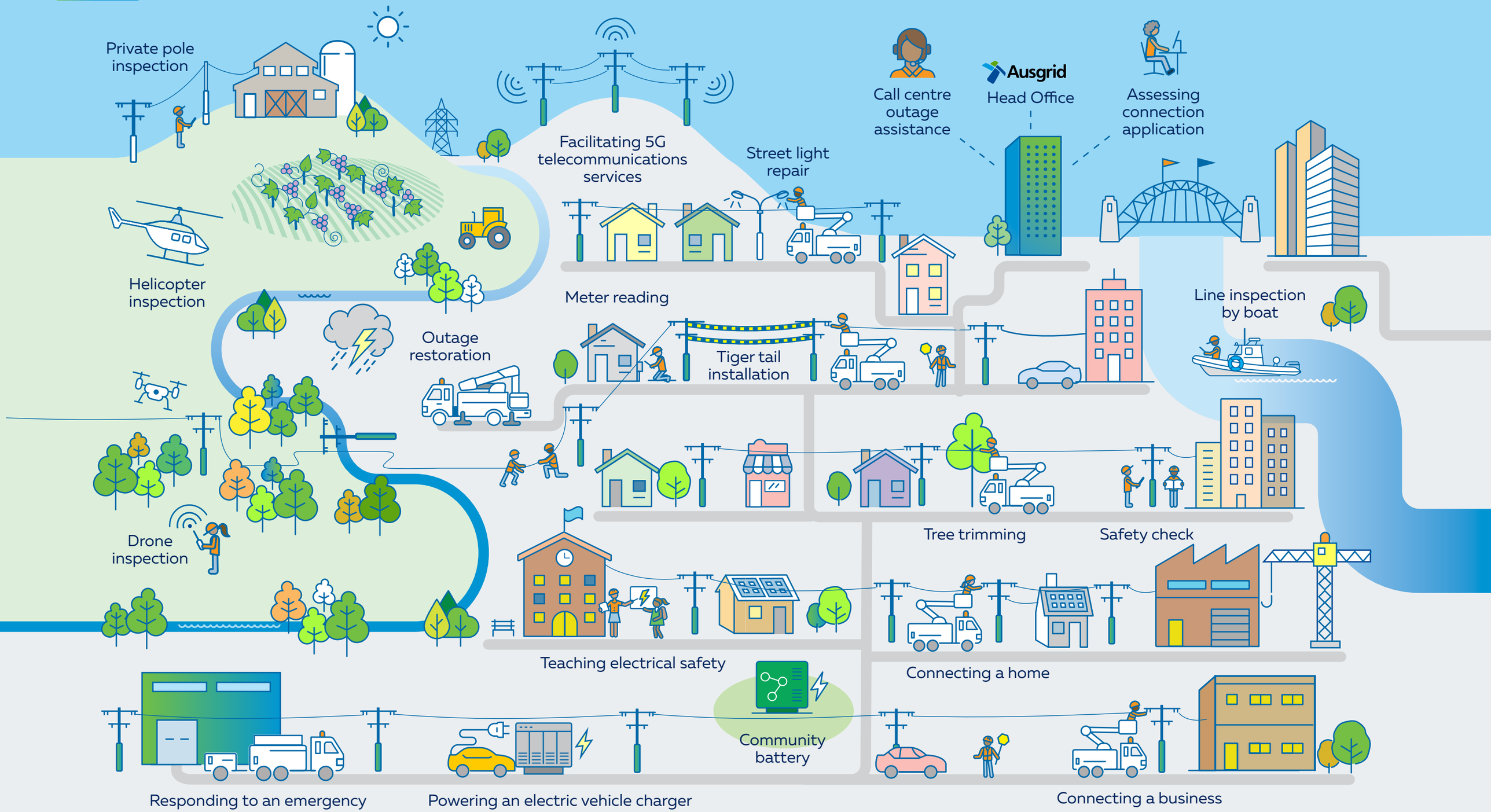
While certain aspects of our proposal will be impacted by economic circumstances beyond our control, there are also a range of significant decisions that you can influence.

We invite your feedback by 4 October 2022 via our engagement website. See **Section 3.4** for information on how to share your feedback with us.

Note: All financial values presented in this Draft Plan are in real FY24 dollars, unless stated otherwise.[1]

1 See the Glossary for more information on real versus nominal numbers.

Our role in the community



Welcome from the Chairman and CEO

Five years ago, during consultation on our plan for 2019-24, we heard loud and clear that our business could do more to meet our communities' expectations.

Our customers wanted us to be more innovative and take a leadership role in the energy transition. Our customer care was not where it needed to be. We were not easy to deal with, and customers asked us to invest more time understanding their experience with us. We also heard that we needed to reduce our costs and do more with less.

So, we took up the challenge.

In 2019 we committed to improving our customer and community engagement, and to make it central to our day-to-day operations. We implemented a Network Innovation Advisory Committee (**NIAC**), bringing customers and external experts into our decision-making to help us innovate in ways our communities valued. Our community battery trial is a great example of our collective achievements.

Our Pricing Working Group (**PWG**) has helped us continually think through how we can evolve our pricing to better facilitate a low-cost energy transition. We expanded our Customer Consultative Committee (**CCC**), and we seek their frank advice on how to become a better business for our customers.

We also established, and are continuing to build, an 'always on' Voice of Community program to tell us how our customers feel about the services we provide, and where we need to improve.

And, importantly, we took necessary but difficult steps to reduce our cost base, building on efforts that were already underway.

We are now the most improved network business in the National Electricity Market (**NEM**). Compared to 2015, our residential customers' bills have reduced by $241 or 30%.[2] Our service experience has improved vastly, we have less customer outages and we are a safer business.

Our successes to date are not only due to our hard work but also due to the support we have had from our customers and stakeholders.

We have seen the value of our growing customer focus and a new approach to collaboration, and this has encouraged us to take on an even greater challenge for this Draft Plan.

We are implementing an ambitious program of community engagement across households and businesses, including Indigenous and culturally and linguistically diverse (**CALD**) communities. We have been both humbled and exceptionally impressed by how our communities and their representatives are grappling with many of the same issues we do at the Board and Executive tables.

Through this engagement our communities are telling us they expect an affordable, resilient and net zero future. This Draft Plan outlines a range of potential responses we are considering, including:

- Building network and community resilience in response to more severe weather and more sophisticated cyber threats;
- Readying the grid for further customer uptake of technology such as rooftop solar, batteries and electric vehicles (**EVs**), and supporting a fair transition to net zero; and
- Transforming our business' core Information Communications and Technologies (**ICT**) platforms to deliver simpler, faster and more efficient services into the future.

We would value your feedback on the responses we are considering - particularly the impact on customer bills in light of the unprecedented investment required in the electricity transmission and generation sectors, which will put upward pressure on our customers' total electricity bills.

We have no doubt the initiatives included in this Draft Plan and our accompanying Pricing Directions Paper can be even better with your input. We welcome your feedback on how they can be improved.

Thank you for continuing to engage with us.

Yours sincerely,

Dr Helen Nugent AC
Chairman, Ausgrid

Richard Gross
CEO, Ausgrid

2 Nominal. Bill reductions are due to a combination of factors including AER rate of return decisions and lower interest rates as well as Ausgrid becoming more efficient.

1

Our communities want us to do more than continue to deliver safe, reliable and affordable energy services. They also want a more resilient grid that supports the transition to net zero

1 Summary of our Draft Plan

Over the past decade, Ausgrid has taken difficult steps to transform our business and better meet our customers' expectations. This has included reducing our costs, delivering more affordable services, and working to better understand and respond to our customers' expectations.

Taking bold steps forward, with support from our customers, has prepared us to meet the challenges of our changing climate and the transition to a low carbon economy (**Figure 1.1**).

Figure 1.1: Our recent achievements

1. Industry-leading safety	• Since 2015, we have reduced our total recordable injury frequency rate by 71%. It is now at an industry-leading level
2. Reducing our costs	• Since 2015, we have reduced our operating costs by $400 million (50%) and our share of household bills by $241
3. Voice of Community	• Launched our business-as-usual (**BAU**) Voice of the Community program to better understand our performance across 25 different services, channels and market segments
4. Emissions reductions	• Our emissions target is an 8% reduction by 2023-24, and Net Zero by 2050. So far we are ahead of our plan with a 13% reduction achieved
5. Supporting EV charging	• Established our partnership with JOLT to provide electric vehicle charging from our electric kiosks. We now have 15 connected to our network
6. Community battery trial	• Began trialling 3 community batteries, saving participating customers up to $200 a year by enabling them to use more rooftop solar

1.1 Challenges and opportunities for our Draft Plan

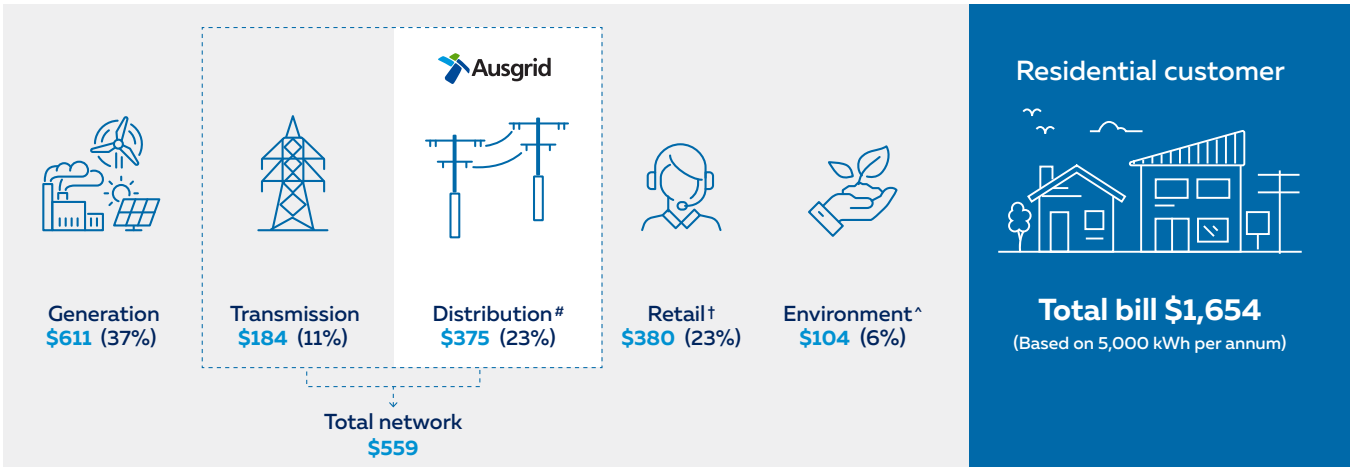
As we look ahead to the 2024-29 period, the challenges and opportunities for Ausgrid and the communities we serve have never been greater:

- **Climate change** means our poles, wires and other assets must be able to withstand more frequent and extreme weather conditions. At the same time, **cyber attacks** are becoming more frequent and sophisticated. Both of these challenges present growing risks to the reliability of our network services. Without greater network resilience, we could see more frequent and prolonged power outages, with significant impacts on lives, livelihoods and safety across our communities.
- The **transition to a low carbon economy** is being spurred on by government commitments to net zero by 2050 and our customers' increased uptake of Distributed Energy Resources (**DER**) - such as rooftop solar, household and community batteries, and electric vehicles. Electricity networks like us are an essential platform for the transition to net zero. We need to be able to accommodate the growing uptake of DER and manage the increasingly complex energy flows this will create. This is both a significant challenge, and an exciting opportunity.
- The **continuing evolution of digital technologies** is expanding opportunities to improve our service delivery, provide innovative service offerings, increase our efficiency in resolving customer concerns, and make it simpler and easier for customers to interact with us.
- **Economic conditions are worsening**. Inflation is at its highest level for more than 20 years. Interest rates are rising and are expected to continue rising over the coming years. This will increase our borrowing costs, and place financial strains on our communities.

We are also consulting on our Draft Plan at a time when costs in other parts of the electricity supply chain (see **Figure 1.1.1**) are expected to increase. For example, significant investment in transmission infrastructure to connect large-scale renewable generation to the grid will add costs to the system. Generation costs are expected to increase, as could environmental scheme costs under the NSW Government's Electricity Infrastructure Roadmap (see **Section 2.4**).

In this context, it is vital to ensure our investments reflect the priorities and expectations of our communities.

Figure 1.1.1 Breakdown of a typical residential customer bill (FY23)



Notes:

Distribution includes NSW Climate Change Fund.
† Retail includes Metering charges.
^ Government environmental schemes.
1. Amounts exclude GST.
2. Ausgrid total network charges include distribution plus pass through of transmission costs and the NSW Climate Change Fund. In FY24 our estimate of total network charges is $580.

1.2 Delivering value for money

In recent years our communities have felt the worst impacts of bushfires, floods and severe storms. They are telling us they are frustrated about the lack of co-ordinated action on climate change, and are demanding more from governments and businesses alike. At the same time, the impact of the global pandemic has been exacerbated in recent months by sharp increases in the cost of living.

As a result, our communities are telling us they want Ausgrid to do more than continue to deliver safe and reliable energy services. They also want a more resilient grid that delivers better value and supports the transition to net zero.

Our Draft Plan, summarised on the **next page**, reflects how we could deliver our customers' evolving priorities. If implemented, our Draft Plan would result in our component of bills (the poles and wires) increasing in price by 4.7% for households, 5.9% for small businesses, and 6.9% for large businesses, on average each year over the 2024-29 period (nominal). This is in addition to the external factors impacting cost of living and energy bills outlined in **Section 2.4**.

In **Figure 1.2.1** we depict our price change for households (as an example) in the context of significant reductions since 2014. It shows that a 4.7% per annum increase is equivalent to our share of the household bill rising from $580 in 2023-24 to $729 by 2028-29.

Of this $149 increase:

- $111 is caused by external factors predominantly **outside of our control**, like rising interest rates and insurance premiums. While we are doing what we can to reduce their impact, these factors will still cause bills to rise (see **Section 2.4**); and
- The remaining increase of $38 over the period is driven by investment in areas such as climate resilience, cyber security, delivering net zero and digitisation – reflecting the priorities being communicated to us by our customers.

The challenge in front of us is that the economic environment is putting pressure on our costs, even before we start talking about investing more to deliver the community's future vision.

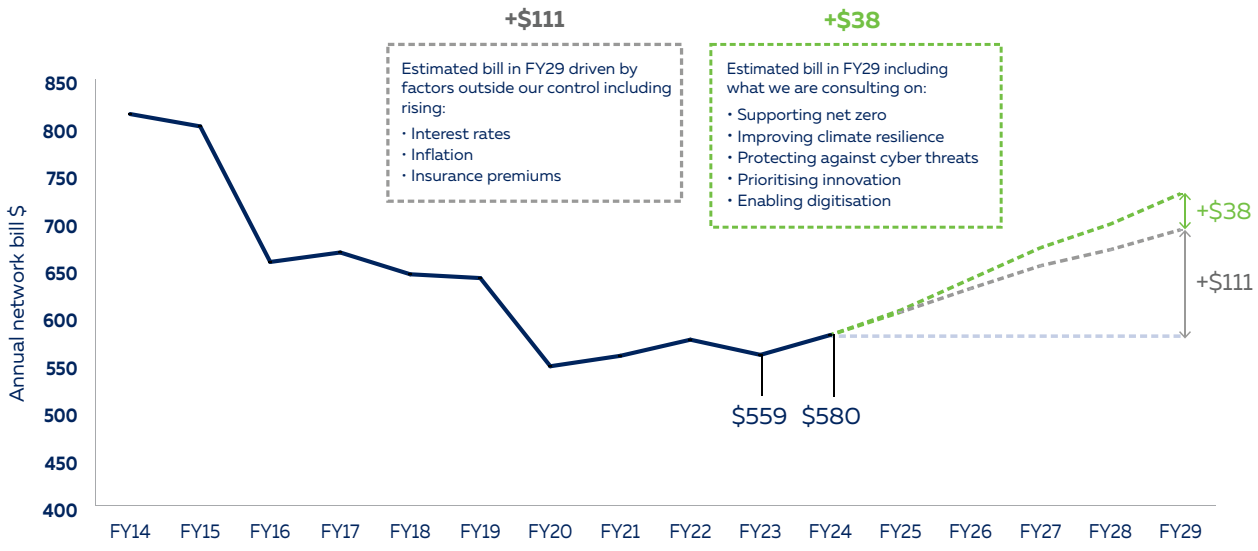
As noted, we also expect costs in other parts of the electricity supply chain to increase.

Given this, we need your help to determine whether the additional investment, which translates to a $38 additional increase in household bills by 2028-29, is value for money for our communities and future generations.

Consultation question 1:

Given our communities' expectations for the grid, and the affordability challenge they are also facing, how do we deliver value for money into the future?

Figure 1.2.1 Drivers of potential increases in household network charges ($ nominal, excl GST)



Note: Ausgrid total network charges include distribution plus pass through of transmission costs and the NSW Climate Change Fund. In FY24 our estimate of total network charges is $580.

Our 2024-29 Draft Plan on a page

Improving customer experience

More timely and accurate outage information

Making connection processes easier and increasing support for our delivery partners

$20m

Transforming the grid

Introducing pricing arrangements that empower customers and support net zero (see our Pricing Directions Paper)

Prioritising innovation and continued transformation through modernising our systems

$193m

Delivering net zero

Connecting 620,000 customer energy assets (including rooftop solar systems, batteries and electric vehicles)

Investing to allow another 1 million customer energy assets to connect beyond 2029

$153m

Building resilience

Protecting against cyber attacks by implementing industry best practice safeguards

Reducing the impact of outages caused by severe weather and supporting community resilience

$310m

Safety and reliability

Ensuring the safety of our people and the community

Maintaining the performance of our 5 million network assets

$2,055m

Connecting customers

Expanding network capacity to accommodate growth

Connecting 55,000 new homes and businesses

$159m

Diversity and Inclusion

Delivering our Reconciliation Action Plan (**RAP**)

Improving services for culturally and linguistically diverse (**CALD**) customers

Exceeding our employee diversity targets

Legend

Increasing priorities

Continuing priorities

$m

2024-29 total expenditure

2

We are consulting at a time when the challenges and opportunities in front of us have never been greater

2 Context for our Draft Plan

Over the past decade, Ausgrid has taken steps to transform our business - including reducing our costs and working to better understand and respond to our customers' expectations. Taking these important steps, with support from our customers, has helped us prepare for the challenges of a changing climate and the transition to a low carbon economy.

Our Draft Plan explores how we continue this transformation over the 2024-29 period, in the context of 4 key challenges and opportunities facing us:

- Climate change risk and other external threats to our network;
- The increased pace and urgency of the transition to a net zero economy;
- The continuing evolution of digital technologies and the opportunities this provides; and
- Challenging external factors impacting costs such as high inflation and rising interest rates.

In the following sections we outline these challenges and opportunities and what they mean for our network and customers.

Our separate Pricing Directions Paper sets out potential implications for our pricing structures.

2.1 Climate risks and other external threats

As the climate changes, our network – like energy networks around the globe – faces increased risk from extreme weather events such as storms, floods and bushfires. At the same time, cyber attacks are becoming more frequent and sophisticated.

More extreme weather

Prolonged outages have major impacts on our customers' lives and livelihoods, particularly the most vulnerable in our communities. In extreme weather events, prolonged outages also make it difficult to use electronic devices to receive critical updates, seek help or check on neighbours. Fallen powerlines also create significant community safety risks.

Extreme bushfires in 2019 and 2020 and floods in 2021 and 2022 have heightened community expectations that governments and essential service providers act to manage climate risk.

For networks like ours, this involves building climate resilience so that our poles, wires and other assets are better able to withstand extreme weather. It also involves having adequate recovery resources ready for when outages do occur.

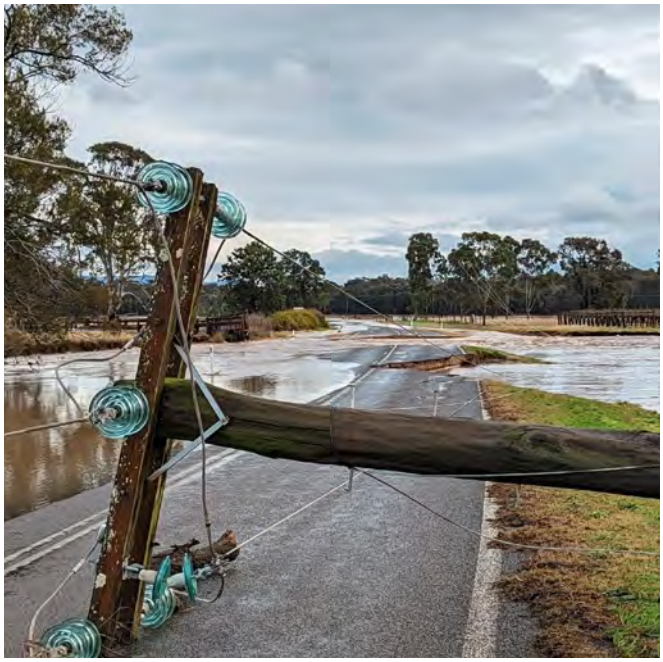
Growing cyber threats

There is now one reported cyber attack every 8 minutes in Australia,[3] with a growing proportion being categorised as 'substantial' in impact by the Australian Cyber Security Centre (**ACSC**). The potential consequences of these threats grows as our own digital footprint expands and more electric devices interact with our network.

A catastrophic cyber attack on our network (which includes Sydney CBD) would have social, economic, health and even geopolitical ramifications for Australia. We estimate a complete shut-down of our network would have a total economic impact on our customers of $120 million per hour or approximately $2.9 billion over one full day alone.[4]

To manage cyber threats, NSW regulations require us to use 'best industry practice' to ensure our network and ICT systems can only be accessed, operated and controlled from within Australia. New requirements now also exist under the recently amended Commonwealth *Security of Critical Infrastructure Act 2018*.

3 ACSC (2021). Annual Cyber Security Report 2020-21.
4 Based on the AER's Value of Customer Reliability (**VCR**).



2.2 Transition to net zero

While Australia has been transitioning towards a cleaner and more sustainable energy system for some time, the pace and urgency of change is accelerating.

Distribution networks like Ausgrid play a critical role in enabling this transition.

Government policies

The NSW Government is seeking to make NSW a net zero jurisdiction. In addition to the NSW Electricity Infrastructure Roadmap (see **Section 2.4**), new policies include the:

- 2020 Net Zero Plan which commits to net zero emissions in NSW by 2050;
- 2021 Electric Vehicle Strategy which provides $500 million in tax cuts and incentives to increase uptake of EVs in NSW; and
- 2021 Hydrogen Strategy which will result in a significant number of hydrogen electrolysers connecting to our network in the Hunter region.

The May 2022 Federal election showed that the community wants action on net zero. On 16 June 2022, the new Federal Labor Government announced an international commitment to reduce Australia's emissions by 43% by 2030.

Its election commitments included the roll out of over 400 community batteries across Australia and a $20 billion 'Rewiring the Nation' plan to accelerate investment in the transmission network and facilitate the growth of large-scale renewable generation.

Customer investments in DER driving net zero

Households are telling us that they plan to invest more in DER. This is consistent with our forecasts (**Figure 2.2.1**), based on the Australian Energy Market Operator (**AEMO**) Step Change scenario.

We expect that by 2029:

- Rooftop solar uptake will nearly double in our area; and
- The number of home batteries will increase by around 113,000.

Our network will need to evolve to ensure it can efficiently accommodate the increasingly complex energy flows this will create. This has implications for our investment needs over the 2024-29 period.

Figure 2.2.1 Our forecast of DER uptake in our network area (aligned with AEMO's Step Change scenario)

Total number on our network (% of total customers)	2022	2029	2034	2039
Rooftop solar systems	220,000	400,000	510,000	610,000
(% of all customers)	(12.3%)	(21.7%)	(26.3%)	(30.5%)
Behind-the-meter batteries	17,000	130,000	320,000	540,000
(% of all customers)	(0.9%)	(6.9%)	(16.7%)	(27.1%)
Electric vehicles	3,000	370,000	1,110,000	2,050,000
Flexible customer load (e.g. swimming pool pumps and electric hot water systems)	470,000	430,000	410,000	380,000
Total DER assets[5]	**710,000**	**1,330,000**	**2,350,000**	**3,580,000**

5 Refers to number of DER assets not customers.

2.3 The opportunity of digitisation

While we have made significant progress in recent years, Ausgrid and the energy sector more broadly remain out of-step with customer expectations for service delivery and automation with our delivery partners.

Our goal is to ensure that when a customer interacts with Ausgrid, it is a simple, easy and empathetic experience that exceeds their expectations. To this end, we want to leverage digital technologies to:

- Offer more innovative services, such as tailored supply and price offerings to provide customers with more choice and ability to manage their energy costs;
- Better understand our customers' unique needs so we can provide high quality, personalised support;
- Improve how we share data with our delivery partners, to enable more seamless interactions and smoother service delivery to our mutual customers, and in turn develop a coordinated approach for rebuilding consumer trust in the energy sector; and
- Make our processes more efficient, for example, by automating manual processes to reduce errors, save time and resolve customer issues more quickly.

A cyber-safe digital transformation is critical to keep pace with customers' evolving service expectations while delivering efficiently for customers.

2.4 External factors impacting costs

We expect that the factors largely outside our control will increase our costs over the 2024-29 period.

Interest rates

Over recent years, interest rates have been at historically low levels. This has meant that our cost of borrowing has been relatively low, which has helped contribute to lower network prices.

However, economic conditions have now started to change and interest rates are rising. The Reserve Bank of Australia (**RBA**) increased the cash rate in May, June, July and August 2022, and further increases are expected.

As interest rates are a major influence on the costs we incur, this will put upward pressure on our prices. More information on our financing costs can be found in **Appendix C**.

Higher inflation

The cost of living and doing business is rising. In addition, the higher inflation is, the higher our costs, and this will flow through to our network charges. Some of the materials we use to build and maintain the network are increasing by rates much higher than headline inflation. We are currently absorbing some of these costs.

Increasing insurance premiums

Climate change is causing more frequent and severe weather events. This means more frequent damage to electricity networks, which in turn impacts the safety and reliability of supply.

Insurers are limiting their exposure to the energy sector by increasing network businesses' insurance premiums because of the increased risk of extreme weather events.[6]

New costs we must pass through to customers

The NSW Government's Electricity Infrastructure Roadmap aims to deliver significantly more renewable generation capacity by 2030 through 5 renewable energy zones (**REZs**).

The NSW Government requires Ausgrid and the other NSW distribution networks to pass through a range of costs associated with implementing the Electricity Infrastructure Roadmap (including transmission investment and potential distribution network upgrades) to NSW customers' energy bills from 1 July 2023.[7]

6 In addition, increased liability claims under Directors and Officers Liability insurance, property bushfire losses under Industrial Special Risks (property) insurance, and the increased potential for claims under cyber insurance have seen our current and forecast insurance premiums for these insurance classes rise significantly.

7 Our customers have told us they want information about what makes up their total retail bill and we are engaging with the NSW Government on how the Electricity and Infrastructure Roadmap's costs and benefits will be communicated.

3

We are committed to being ambitious and transparent in engaging on this Draft Plan

3 How we are engaging

When we were preparing our plans for the current 2019-24 period, we engaged deeply and intensively in the months ahead of submitting our proposal to the AER. While valuable, we knew we could do a lot more to improve our engagement.

Over the past 3 years our business has been transforming with the support of our communities. By listening and responding to what we hear from our communities, we are delivering better outcomes and becoming a better business.

So, when designing our engagement for our 2024-29 planning process, we wanted to be both ambitious and brave. We knew that taking risks, moving out of our comfort zone, and occasionally failing, would build greater levels of trust and deliver better outcomes for our communities.

Building on our earlier improvements to our 'always on' BAU engagement, we worked with our CCC to:

- Establish an independent challenge panel, the Reset Customer Panel (**RCP**);
- Co-design a broad and deep engagement program (detailed in the bd Infrastructure Customer and Stakeholder Engagement Report); and
- Refresh our corporate vision and strategy.

We also committed to publishing this Draft Plan, and giving our communities opportunities to comment on and to influence outcomes ahead of submitting our proposal to the AER in January 2023.

Delivering on this ambition to date has not been without obstacles, including the COVID-19 pandemic. Creating a cohesive picture of the expectations and ambitions of our diverse communities has also been challenging. This drove us to be innovative:

- Our Voice of Community Panel (citizens jury) included both whole of community and regional sessions, and online and in-person sessions, and we invited experts from across the industry to provide independent voices to the process; and
- We created a 'conversation' between specific voices such as our CALD customers and the Voice of Community Panel.

The diagram on the **next page** illustrates our engagement journey to date. This weaves together what we are hearing through our BAU Voice of Community program, and our engagement for the 2024-29 planning process.

We are committed to continuing to be ambitious and brave in engaging on this Draft Plan. Details about how you can share your views with us are set out in **Section 3.4.**

Engagement journey to date

Key:

- Voice of Community ongoing engagement program
- Partner and stakeholder engagement
- Customer engagement
- Joint network (DNSP) engagement

pre 2021

- Voice of Community program established 2019
- ASP seminars
- CCC, NIAC and PWG established
- Retailer service performance meetings
- Council forums
- Industry forums
- Council hub on Ausgrid.com.au
- Life Support hub on Ausgrid.com.au

2022

January

- DNSP forum – Tariffs
- 10 CALD small business conversations

February–June
Voice of Community Panel – 8 sessions

February

- DNSP forum – Resilience
- 2 Small business focus groups
- 2 Lived experience focus groups
- Youth focus group
- MP survey

March

- Council working group: Joint DNSP and Resilience Sydney – Resilience
- 12 Large customer interviews
- Aggregator roundtable
- Retailer hub on Ausgrid.com.au
- ASP-2 forum

March–April
Large connection customer one-on-one interviews

April

- 3,404 Life support customer surveys

March–July
Monthly Retailer newsletter

Phase 3

July

- Indigenous yarns
- Council working group – Vegetation

June

- Retailer forum
- 2 Household focus groups – Resilience
- Council working group – Innovation and Sustainability

May

- Council working group - Streetlighting
- ASP-1 forum
- Small business focus group
- Lived experience focus group
- Large connection customer forums
- Household focus groups -Vietnamese, Mandarin, Arabic
- Small business and lived experience peak body roundtables

2021

Phase 1
Phase 2

June

- Dedicated council inbox
- RCP established

August

- Contact channel for ASPs and Large customers

September

- DNSP forum – Service classification

October

- Pricing working group – Tariff statement
- Council working group – Vegetation
- Council working group – Innovation

November

- 2 Small business peak body roundtables
- Household focus groups - Vietnamese, Mandarin, Arabic
- 2 Lived experience peak body roundtables
- 4 Household focus groups - Event effected

December

- Council working group – Street lighting
- ASP-3 workshop

Glossary

- **DNSP** Distribution network service provider.
- **ASP** Accredited service provider.
- **MP** Member of Parliament.
- **Lived Experience** Customers experiencing vulnerability.
- **CALD** Culturally and Linguistically Diverse.
- **CCC** Customer Consultative Committee.
- **PWG** Pricing Working Group.
- **NIAC** Network Innovation Advisory Committee.

Ausgrid

3.1 Establishing the Reset Customer Panel

The RCP is an independent panel, which includes 6 members of our CCC and an independent Chair (**Figure 3.1.1**). Their role is to represent the long-term perspectives of customers and challenge Ausgrid throughout the engagement process.

The RCP meets frequently to discuss and debate issues among themselves, and with Ausgrid and representatives of our Board. They are separately funded to conduct independent research or engagement.

The RCP is also an integral part of our customer and stakeholder engagement governance structure, reporting regularly to the CCC and ensuring alignment with our key consultative bodies, the PWG and NIAC.

In forming the RCP we asked ourselves whether the panel needed to be 'representative' of the communities we serve. In considering this, we weighed the benefits of a larger, more diverse panel that may have been more representative, against a smaller panel that could potentially engage more effectively with each other, and with us.

We decided that a smaller group with exceptional experience and technical capability would be most effective. We selected the RCP members carefully to ensure deep economic, engineering, policy, legal and engagement expertise, and also representing a range of interests - from commercial to vulnerable and CALD customer groups.

Each community engagement stream has an RCP sponsor, and at least one RCP member attends every community engagement session. We think this approach is working well, but note it does rely on a significant time commitment from RCP members, and corresponding investment from Ausgrid.

There is no doubt that the RCP is pushing our business to find better answers to the questions confronting us. Occasionally this has been uncomfortable and will likely continue to be. But it is consistently proving to result in more innovative engagement approaches and better outcomes for customers.

The RCP's perspective on this Draft Plan and our approach to community engagement is provided in a separate report on our engagement website.

Figure 3.1.1 Who are Ausgrid's Reset Customer Panel members?

Tony Robinson (Chair)

Tony led the AusNet Services Customer Forum ahead of the distributor's 2019 proposal. He also managed the Brotherhood of St Laurence's financial inclusion department. These appointments followed 13 years in the Victorian Parliament.

Louise Benjamin

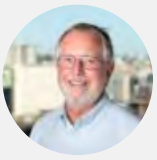
Louise is a commercial and regulatory lawyer with extensive experience in telecommunications and energy regulation.

Gavin Dufty

Gavin is Executive Manager of Policy and Research at St Vincent de Paul Society, Victoria. He undertakes research and policy development in the energy sector.

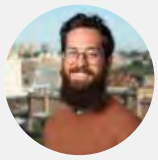
Mark Grenning

Mark is an experienced energy consultant focusing on larger consumers. His work includes advocacy to energy market bodies, networks and governments covering electricity and gas.



Iain Maitland

Iain has worked as the Energy Advocate for the Ethnic Communities' Council of NSW since 2014.



Jan Kucic-Riker

Jan is an energy policy officer with the Public Interest Advocacy Centre. His work seeks to promote sustainable, equitable and affordable access to energy for all people and communities.

Mike Swanston

Mike is a professional engineer with a passion for energy sustainability and a fair deal for energy customers.

3.2 Engaging broadly and deeply

The communities we serve are large and diverse. Our ambition is to engage across these communities in ways we have never tried before. We are particularly keen to engage with CALD and Indigenous communities, as these groups are often underrepresented in community engagement.

We are aiming to engage both broadly and deeply:

- **To achieve breadth** – we are seeking perspectives from a wide range of customers and stakeholders (14 different cohorts to date) on a broad range of topics; and
- **To achieve depth** – we are exploring and debating topics through meetings with our RCP and PWG (60 meetings to date).

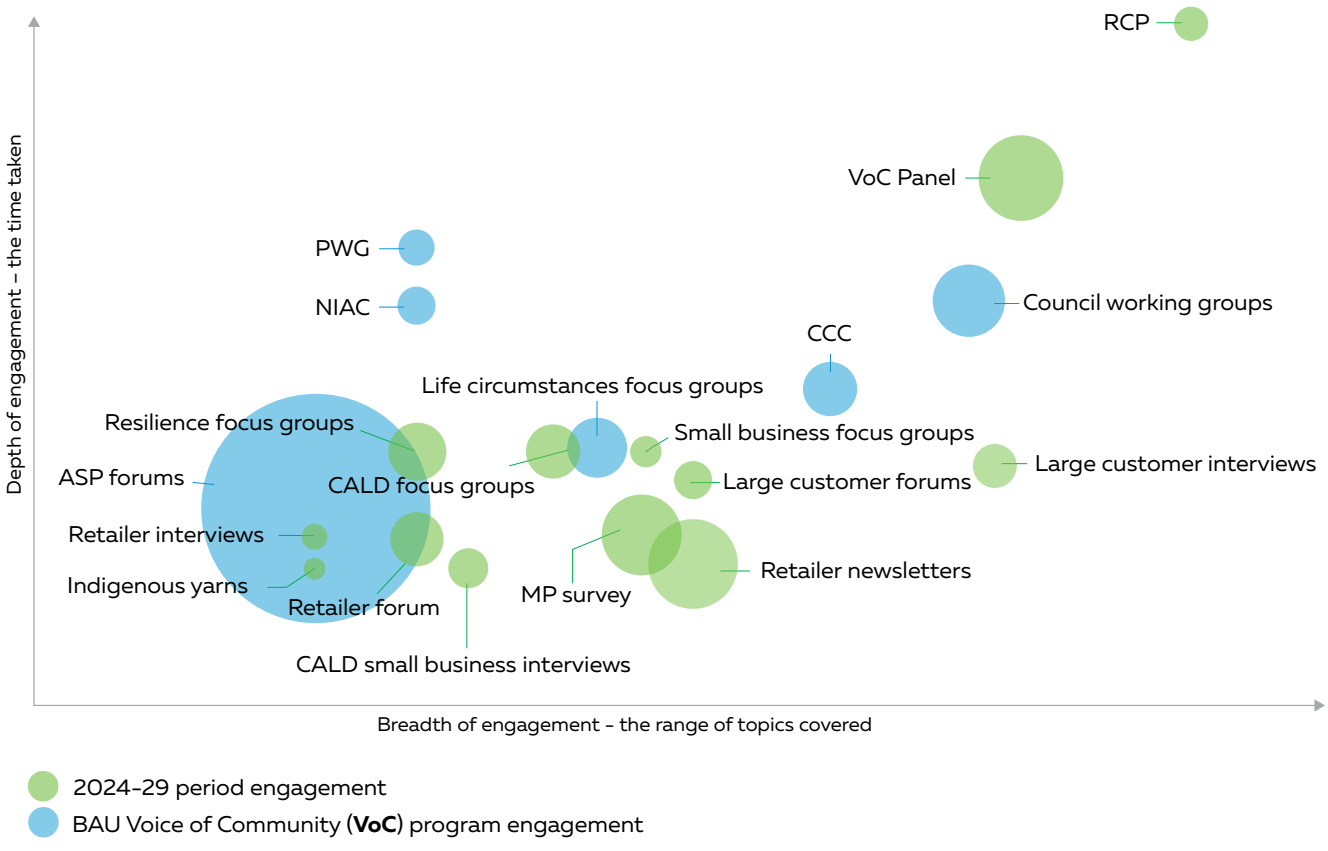
Our engagement meetings and other activities are also open to stakeholders to observe and provide information. We are grateful to the AER and the AER's Consumer Challenge Panel (**CCP**) for engaging with us, as it has benefited our program. We consider our program is exceeding the AER's engagement expectations.[8]

Figure 3.2.1 illustrates the breadth and depth of our engagement to date, showing the relative volume of customers and other stakeholders we have engaged with to develop this Draft Plan.

VoC verbatims analysis
40,000
Customer responses analysed

Life support survey
3,404
Life support customers surveyed

Figure 3.2.1 The breadth and depth of our engagement to date



Note: The size of the circles illustrates the relative number of customers or advocates involved in the engagement activity.

8 In particular the AER's Better Resets Handbook - December 2021 and the 'Consumer engagement framework' at Appendix C to the AER's Final Decision - AusNet Services distribution determination 2021-26 - Overview - April 2021

3.3 Next steps in our engagement process

Our Draft Plan tries to reflect what communities are telling us they expect from our services and their aspirations for the future.

This has naturally resulted in compromises and trade-offs between differing viewpoints. In publishing our Draft Plan, we would like feedback on whether we have the balance right.

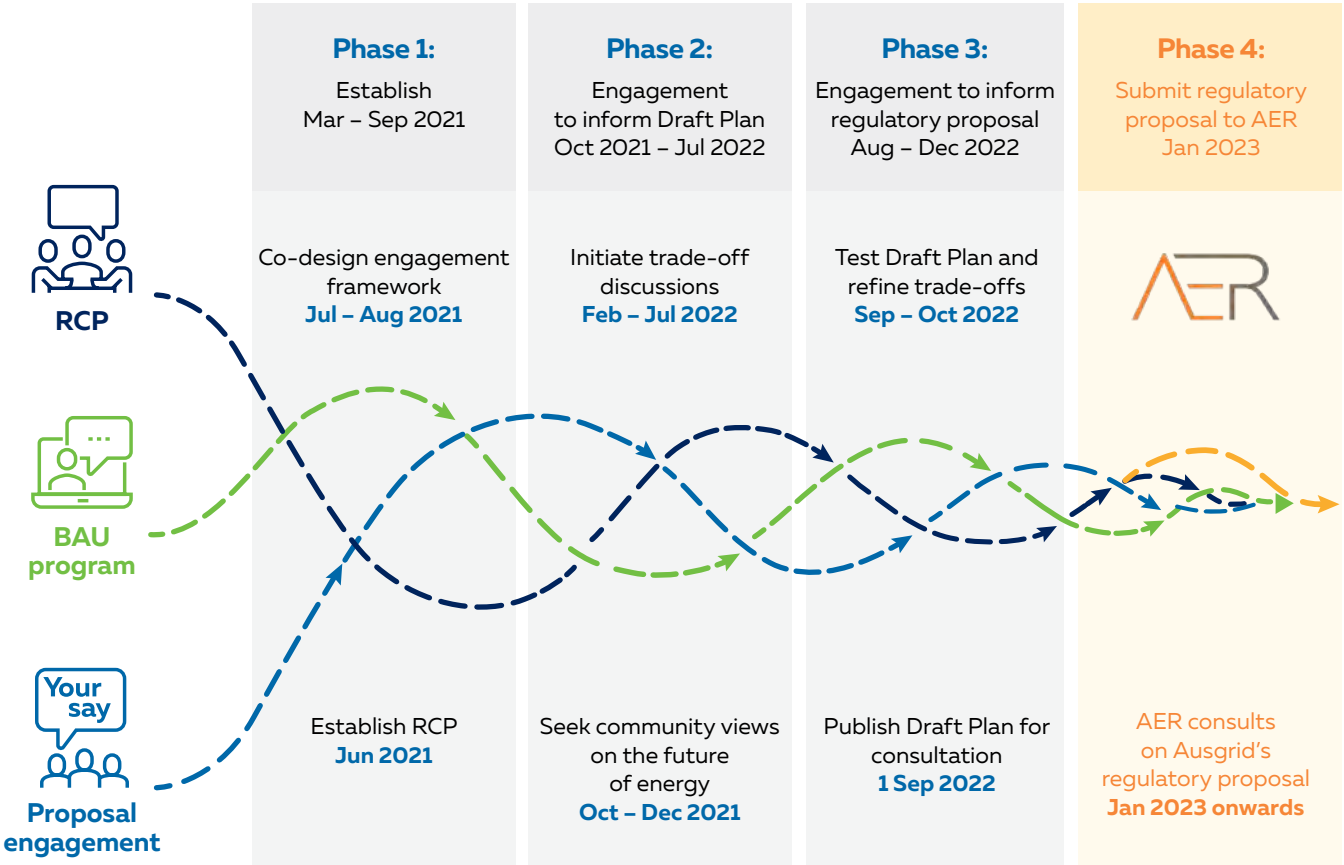
We also recognise that a lot has changed in the economy in recent months. The generation component of electricity bills has risen sharply, and high inflation and rising interest rates are creating cost of living pressures.

We are keen to understand whether this changes our communities' priorities, and hear your views on how we can deliver value for money over the 2024-29 period.

We invite all interested parties to provide feedback on our Draft Plan (see **Section 3.4**). In addition, we will reconvene our Voice of Community Panel, and revisit all the stakeholder groups we have engaged with to date to test our Draft Plan. We will then consider all feedback received and use it to inform our continued work with the RCP and the AER to develop our regulatory proposal that will be submitted to the AER on 31 January 2023.

Figure 3.3.1 demonstrates how we are integrating our BAU engagement and our engagement across 4 phases of our engagement to date and planned engagement through to our January 2023 proposal to the AER.

Figure 3.3.1 Integrating our BAU engagement and our engagement across 4 phases of developing our 2024-29 proposal to the AER



3.4 How you can provide feedback

We welcome all feedback on our Draft Plan, whether in response to the consultation questions included in **Sections 1, 4, 5** and **the Appendices**, or on any topic you would like to share a perspective on.

You can submit your feedback via the YourSay.Ausgrid.com.au website by:

- Answering a simple survey;
- Providing your own thoughts using your own format; or
- Making a formal submission (using the supplied template if you wish).

Figure 3.4.1 outlines some additional opportunities to engage on our Draft Plan.

We would appreciate your submission by **close of business 4 October 2022**.

We commit to considering all feedback we receive ahead of our 2024-29 regulatory proposal being submitted to the AER on 31 January 2023.

Mark any information you do not wish to be published as confidential.

Figure 3.4.1 Opportunities to find out more and share your views on our Draft Plan

Commercial and industrial customers:

- Visit YourSay/large-business-customers to submit your feedback

Household or small business customers:

- Visit YourSay/households or YourSay/small-business to submit your feedback
- Play our 'Be the Boss' game to let us know how you would get the balance right if you were the boss of Ausgrid

Retailers:

- Register for our forum at **9am on 20 September 2022**
- Visit YourSay/retailers to submit your feedback
- Visit our dedicated retailer webpage Ausgrid.com.au/retailers

Accredited Service Providers:

- Visit YourSay/asp to submit your feedback

Local councils

- Register for our street lighting forum by emailing YourSay@ausgrid.com.au
- Register for our Draft Plan forum by emailing YourSay@ausgrid.com.au

4

We are hearing from customers that they want us to build resilience to support thriving communities, deliver net zero, provide a better customer experience and facilitate an affordable energy transition

4 What we are hearing, and potential responses

In **Section 3**, we set out how we are engaging with our diverse communities to inform the development of our proposal for the 2024-29 period.

So far, what we are hearing through this engagement is that our communities want Ausgrid to do more than continue to deliver safe, reliable and affordable energy services over this period. They also want us to focus on 4 priorities:

- Building the resilience of our network to reduce climate and cyber risks;
- Delivering net zero;
- Providing a better customer experience; and
- Facilitating an affordable energy transition.

Figures 4.0.1 to 4.0.4 provide an overview of what we have heard to date, the initiatives and investments we are considering in response, and what these responses would deliver for our communities. The following sections discuss our potential responses in more detail.

The bd Infrastructure Customer and Stakeholder Engagement Report details some of the options that we and our communities have been considering.

Figure 4.0.1

What we are hearing on building resilience to support thriving communities, and what we are considering in response

What we have heard to date

		What we are considering	For our customers, this would mean
Partnering with customers	Customers want a say on how we build resilience	**Partnering with customers to decide what climate resilience investments we make**, by:	
		• Developing our climate resilience framework alongside customer advocates	• Customers shape our decision-making
		• Supporting affordability by spending no more than $204 million on climate resilience initiatives over the 2024-29 period	• Price impacts are contained and climate risk is managed
Climate resilience initiatives	Improve outcomes for those most impacted by extreme weather	**Making investments that meet different customer needs**, by:	
		• Installing stronger powerlines in areas with large amounts of vegetation, potentially in partnership with local councils	• Current reliability levels are maintained
	Improve emergency response	• Maintaining our current storm response capabilities, while adding $5 million per annum in anticipation of more storms	• Rolling out up to 5 community resilience vans so that our customers have a place to charge their phone and connect with loved ones when they lose supply
			• Our field crews can restore power and clear safety hazards as quickly as they do now
Cyber resilience	Improve cyber security	**Keeping pace with the growth in cyber security threats**, by:	
		• Ensuring our safeguards align with industry best practice by investing $106 million	• Reducing the risk that homes, hospitals and businesses will have their power cut due to a cyber attack

Figure 4.0.2

What we are hearing about delivering net zero, and what we are considering in response

What we have heard to date

		What we are considering	For our customers, this would mean
Evolving our services	**Find a way (for those who can afford to) to contribute more**	**Evolving how we deliver and charge for services**, by: • Introducing pricing arrangements that encourage customers to export energy to the grid between 3pm and 9pm, when demand is highest • Exploring how customers could donate their energy exports to local community members, including those experiencing vulnerability Partnering with councils and retailers to: • Support us deliver community batteries and other local energy solutions that could help save customers up to $200 per year on their bill • Advocate for regulatory changes that would help us more effectively manage the network, and offer tailored solutions to our customers	• A fairer distribution of costs between customers • A more affordable energy transition in the long-term
Support DER uptake	**Prioritise innovations that support the transition** **Proactively prepare the network for net zero**	**Investing to support higher uptake of DER**, by: • Testing new technology that supports DER uptake via our industry-leading innovation program (resulting in a total innovation investment of $50 million over the 2024-29 period) • Implementing a range of new processes and tools, including upgrading our ICT systems to give us better visibility of all parts of our network, through an investment of $153 million • Better understanding 2-way energy flows across the network and monitor potential electrical faults that can cause safety hazards, by investing $24 million in smart meter data[9]	• They can efficiently connect an additional 620,000 rooftop solar systems, batteries, EVs or controlled load to our network over the 2024-29 period, and another 1 million over the 2029-34 period • A more agile, innovative and greener grid that supports the transition to net zero
Our carbon footprint	**Reduce Ausgrid's carbon footprint where economically justifiable**	**Reducing our own carbon footprint cost-effectively**, by: • Electrifying our vehicles as options become more affordable and available • Finding ways to avoid using equipment containing sulphur hexafluoride (**SF_6**) (a greenhouse gas)	• We are reducing our emissions in a responsible and cost-effective manner to achieve a 50% reduction by 2030 and net zero by 2050

9 $153 million for delivering net zero is DER total expenditure (totex) and includes $96 million in network and $34 million in DER ICT capital expenditure (capex) and $24 million in smart metering data operating expenditure (opex). Note the total $153 million does not sum due to rounding.

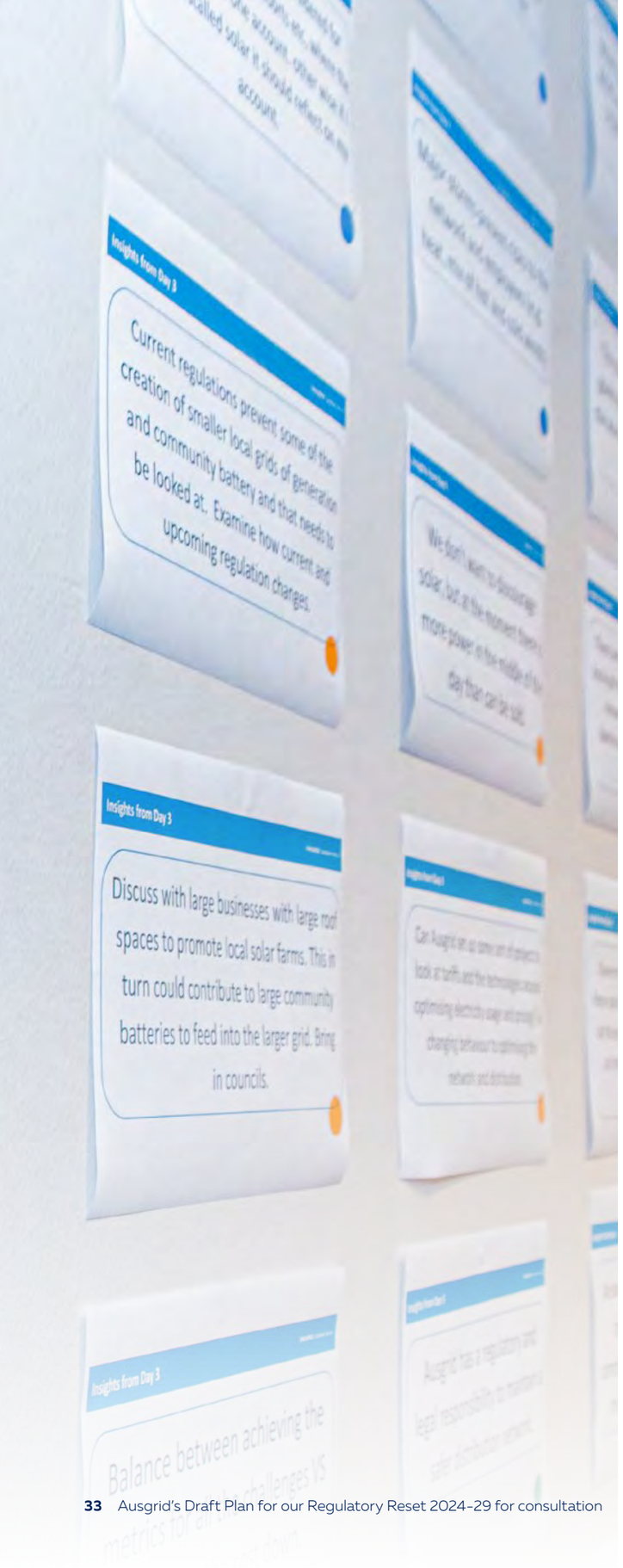


Figure 4.0.3

What we are hearing about providing a better customer experience, and what we are considering in response

What we have heard to date

Service delivery

		What we are considering	For our customers, this would mean
We need to enhance our communications as outage information is crucial		**Making the customer experience simpler and easier**, by	
		• Improving the timeliness of outage communications through a $14 million additional investment in our Advanced Distribution Management System (**ADMS**)	• Faster unplanned outage communications that provide more accurate estimated restoration times
		• Improving the quality of outage information so delivery partners (such as retailers) can better communicate with customers during an outage	• SMS updates about planned outages progress, including forecast timing and estimated restoration times
Being able to speak to a real person is important		• Maintaining the quality of service delivered by our contact centres	• If they call us, they will talk to someone who knows their local area
		• Proposing that the AER apply a Customer Service Incentive Scheme (**CSIS**) to us from 1 July 2024	• We return up to $43 million to customers if we do not improve our customer service
Our services need to be simple and easy to engage with		• Improving the complex customer connection process via a $7.5 million investment in our customer information systems	• Complex connections are delivered faster and with less hassle
		• Introducing fast, easy digital self-service options for delivery partners and large customers, via an investment of $10 million	• Digital self-service options which would save around 43.5 minutes of effort per customer per year

Figure 4.0.3 **continued**

What we are hearing about providing a better customer experience, and what we are considering in response

What we have heard to date

		What we are considering	For our customers, this would mean
Partner collaboration	**Improved engagement and processes with our delivery partners will be more efficient for all**	**Engaging more effectively with our delivery partners and large customers**, by:	
		• Improving the timeliness and accuracy of outage information delivered to delivery partners and large customers, via the above-mentioned $10 million investment	• Delivery partners and large customers are better equipped to communicate with our mutual customers and can better manage their operations during an outage
		• Recruiting 2 additional dedicated Customer Managers to support delivery partners and large customers during the connection process for large sites	• Faster connections for large sites
Diversity and fairness	**Our services need to be empathetic to individual and diverse customers needs**	**Becoming more empathetic in supporting the individual needs of our customers**, by:	
		• Delivering better-tailored services to our customers via a $2.5 million investment to improve our contact centre, website and SMS communications	• A more empathetic service for our CALD, life support, regional, urban, digitally illiterate, and disabled customers, and customers experiencing financial hardship
	Indigenous knowledge is a foundation for managing our impact on Country **Strengthen our relationships with Indigenous communities as the first step towards reconciliation**	• Incorporating Indigenous knowledge into our planning processes	
		• Continuing to build relationships with the Indigenous communities in our network area	• Indigenous communities can influence projects and improve the management of Country
		• Recognising local languages and artwork in our property plans	

Figure 4.0.4

What we are hearing about facilitating an affordable energy transition, and what we are considering in response

What we have heard to date...

		What we are considering	For our customers, this would mean
Bills	**Energy costs are difficult to manage, so energy needs to be affordable**	**Building on our significant cost reductions implemented since 2015**, by: • Making an upfront commitment to reduce our operating costs by $32 million over the 2024-29 period • Continuing to enhance our investment governance, building on the significant improvements made since 2018	• A more affordable energy system in the long-term
Choice and empowerment	**Flexible 2-way pricing provides a fairer transition to net zero emissions**	**Giving our customers more choice and control over their energy services and bills**, by: • Transitioning an additional 500,000 customers to pricing arrangements that better reflect what drives our costs	• They can lower their energy bills by changing when and how they draw power from the grid or export power to it
		• Introducing pricing arrangements that encourage customers to export energy to the grid between 3pm and 9pm, when demand is highest	• A more affordable energy system in the long-term
	Customers want improved visibility of the different costs driving their energy bills	• Deepening our engagement with regulators to support bill transparency, for example supporting the AER's review of retail bill requirements • Identifying effective ways to communicate what drives electricity bills via our website or social media platforms	• They are better able to take targeted action to manage their electricity costs
Intergenerational equity	**Invest to reduce long-term costs**	**Taking a risk-based approach to investment that delivers equitable outcomes across generations**, by: • Better understanding the performance of our 5 million assets in service across the grid	• They are confident we are spending efficiently and our costs are being fairly shared across current and future generations
		• Maintaining a stable asset base so that investments we make today do not create an affordability challenge for future generations	

4.1 Building resilience to support thriving communities

Based on our engagement to date, building our network's resilience to climate change is a priority across our communities. We are hearing they support the science on climate change, expect extreme weather events to continue becoming more frequent and intense, and they want a say on our initiatives to build climate resilience in their local communities.

Customers are telling us that communities likely to be most impacted by extreme weather should be the focus of our efforts. They want us to prioritise innovation and investments to build climate resilience in these high-risk areas.

Building resilience to cyber attacks also appears to be a priority, though we are hearing differing views on whether we need industry best practice cyber security protections, given the costs this would involve.

The initiatives and investments we are considering in response to our communities' expectations on building resilience are discussed below.

4.1.1 Partnering with customers to decide what climate resilience investments we make

In deciding how we build and maintain our network, we can no longer assume our future climate will reflect historical weather conditions. We recently undertook our first Climate Impact Assessment to forecast the likely impact of extreme weather events on the performance of our network out to 2090, but with a focus over the next 30 years.

We also recognise that the costs of mitigating these impacts are likely to be significant. Therefore, the benefits of investments in climate resilience must be balanced with their impacts on the affordability of our services. Getting the balance right is challenging, and we need to do this in partnership with our customers.

Developing our Climate Resilience Framework alongside customer advocates

To embed a customer perspective in our decision-making, we have co-designed a draft framework with customer advocates called *Promoting the long-term interests of consumers in a changing climate: A decision-making framework* (**Climate Resilience Framework**). **Figure 4.1.1** on the **next page** provides an overview of the Climate Resilience Framework.

We are considering using this framework to guide how we decide if a climate resilience initiative should go ahead. The framework requires us to apply scientific evidence, analyse opportunities and options, report back on our findings via accountability measures, and engage with the community at all stages.

We plan to review and update the Climate Resilience Framework with customer advocates as we, and the broader industry, learn more from building climate resilience. A draft version has been published with our Draft Plan for broader customer and stakeholder comment before we finalise it later in 2022.

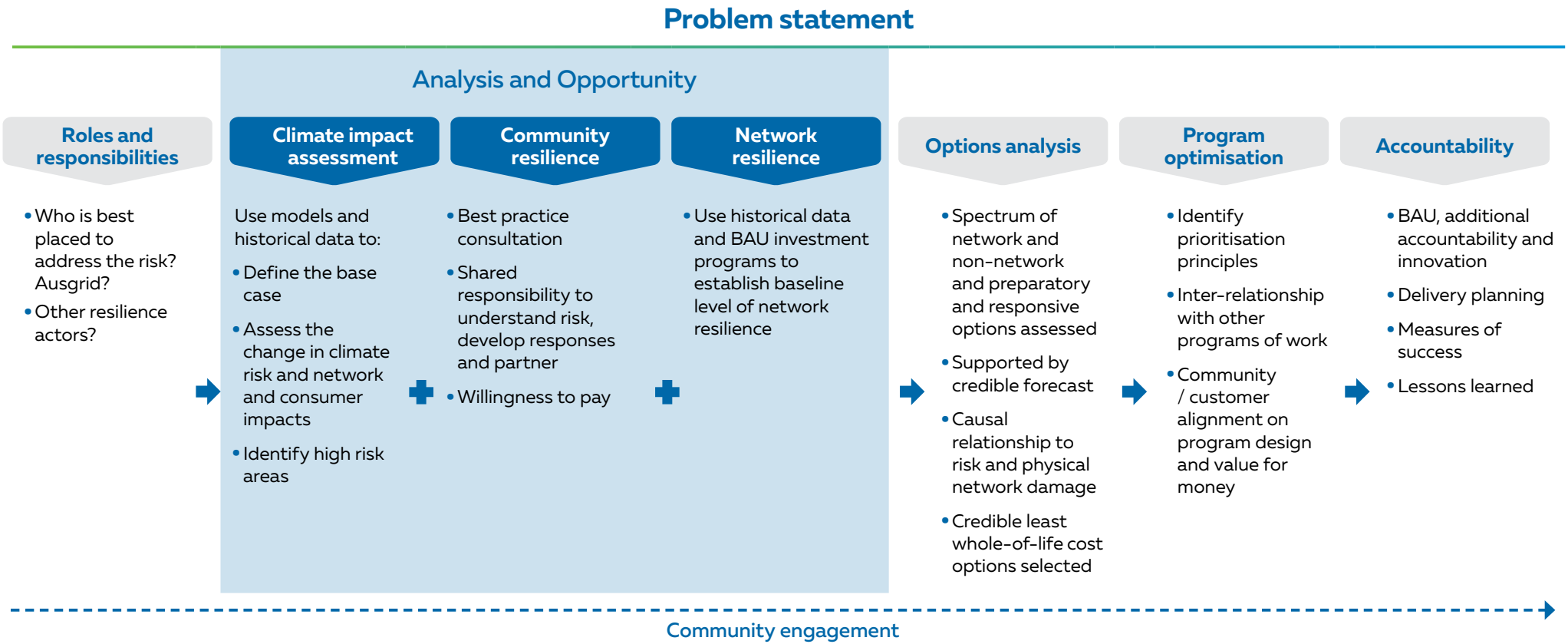
Embedding a customer perspective through a co-design process

The co-design process we used to develop our draft Climate Resilience Framework included multiple in-person workshops involving Ausgrid, the RCP and the Total Environment Centre, and the co-authorship of a written document.

This process was very different to our traditional approach to developing new policies for dealing with significant risks like climate change. We think it will lead to better customer outcomes by embedding customer perspectives in our decision-making at the earliest stage in our resilience planning.

Figure 4.1.1

Overview of our co-designed Climate Resilience Framework



Keeping climate risks and costs steady over the long-term

Our Climate Impact Assessment combines data on the expected changes in weather conditions with engineering data relating to our network.

This combination of climate and engineering information allows us to assess how risks are changing on our network, from inconveniences caused by short interruptions to extended outages that could compromise the health of vulnerable customers.

Taking a risk-based approach

We are seeking to maintain existing levels of climate risk. This means acting to contain growth in climate-related events that could lead to longer outages or increase in safety hazards.

To do this we have calculated:

- Our baseline level of climate risk in FY20; and
- The change in risk in a 'do nothing' scenario (modelled over low, medium and high Emission Pathways, whereby Emissions Pathways are greenhouse gas concentration trajectories adopted by the Intergovernmental Panel on Climate Change).

Our analysis uses an AER input called the Value of Customer Reliability (**VCR**). It allows us to calculate the equivalent dollar impact of network outages. Using VCRs, the customer impact of a network interruption due to more extreme weather can be translated into a dollar value ($m) which we can then compare with the cost of acting.

The cost of doing nothing

Our modelling approach focused on forecasting the increasing costs associated with climate change. These costs include:

- The additional expenditure due to unplanned asset replacement; and
- The economic impact of longer and more frequent outages, as measured by the AER's VCRs.

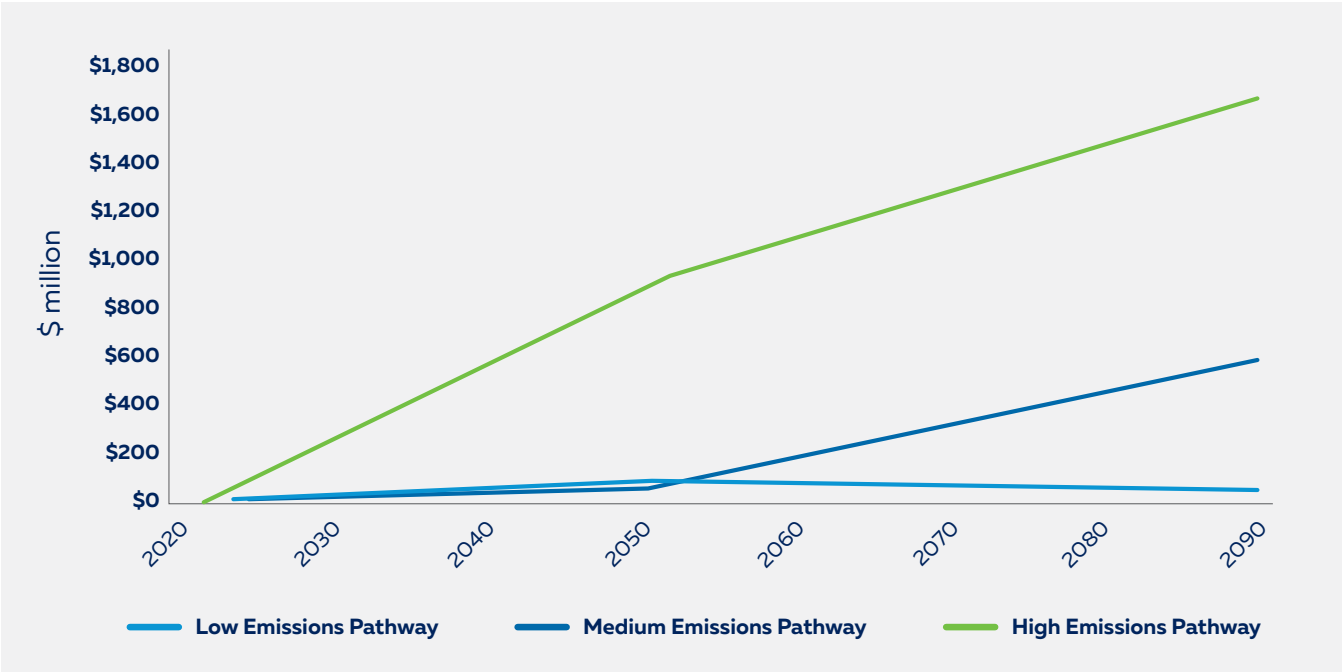
Figure 4.1.2 below sets out the growth in risk ($m) for the Emissions Pathways modelled under a 'do nothing' scenario. It shows that future customers would face materially higher climate risks, and ultimately costs, if we did not act today to tackle the long-term challenge of climate change.

Setting an efficient expenditure ceiling

Our modelling allows us to set an efficient expenditure ceiling. By keeping our resilience spend below this cap, the benefits to customers will be greater than the costs incurred on risk mitigation initiatives. We have calculated a $41 million per year expenditure ceiling, with the initiatives feeding into this amount outlined in more detail in **Section 4.1.2** below.

Setting an efficient expenditure ceiling allows us to pursue a smooth investment profile. This promotes long-term affordability by avoiding bursts of activity that can lead to inefficiencies. It also furthers inter-generational equity as targeted resilience initiatives can be employed so that current and future customers face similar levels of climate risks and costs.

Figure 4.1.2 Estimated cost of growing climate risk under a 'do nothing' scenario



4.1.2 Making investments that meet different customer needs

Building climate resilience involves reducing the risk that more extreme weather events will result in more outages on our network, as well increasing our ability to support our communities when outages occur, and our ability to restore power quickly.

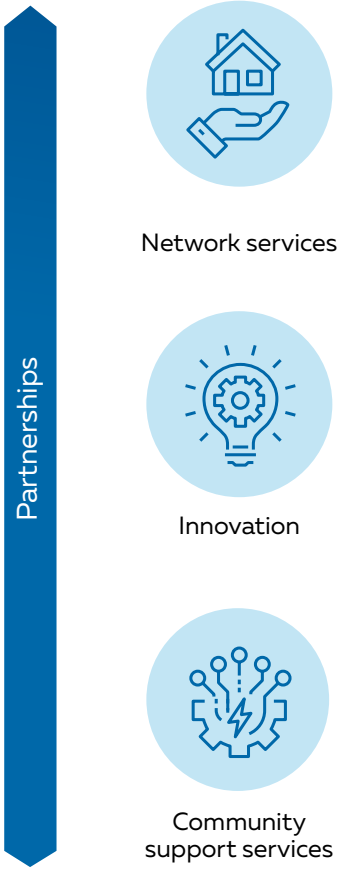
In developing resilience initiatives, we are planning to use targeted solutions to meet different resilience needs (**Figure 4.1.3**). These include:

- **Network services**: building assets to a more suitable standard given the expected change in weather conditions due to climate change
- **Innovation**: undertaking research, trials and pilots of innovative technologies and resilience initiatives to test their effectiveness before rolling them out on a larger scale
- **Community support services**: working with local councils and key partners on coordinated community resilience plans, and providing other basic needs that are disrupted when an extended outage occurs (e.g. vans where people can charge their phones)
- **Partnership**: working with governments, other essential service providers (fire services etc) and other industry partners in the community's best interests

Consultation question 2:

How should we decide which community support services we offer?

Figure 4.1.3 Spectrum of resilience options



4.1.3 Keeping pace with the growth in cyber threats

We want to deliver an experience for our customers that takes advantage of digital technologies while still maintaining a reliable network service with robust protections against the growing risk of cyber security breaches.

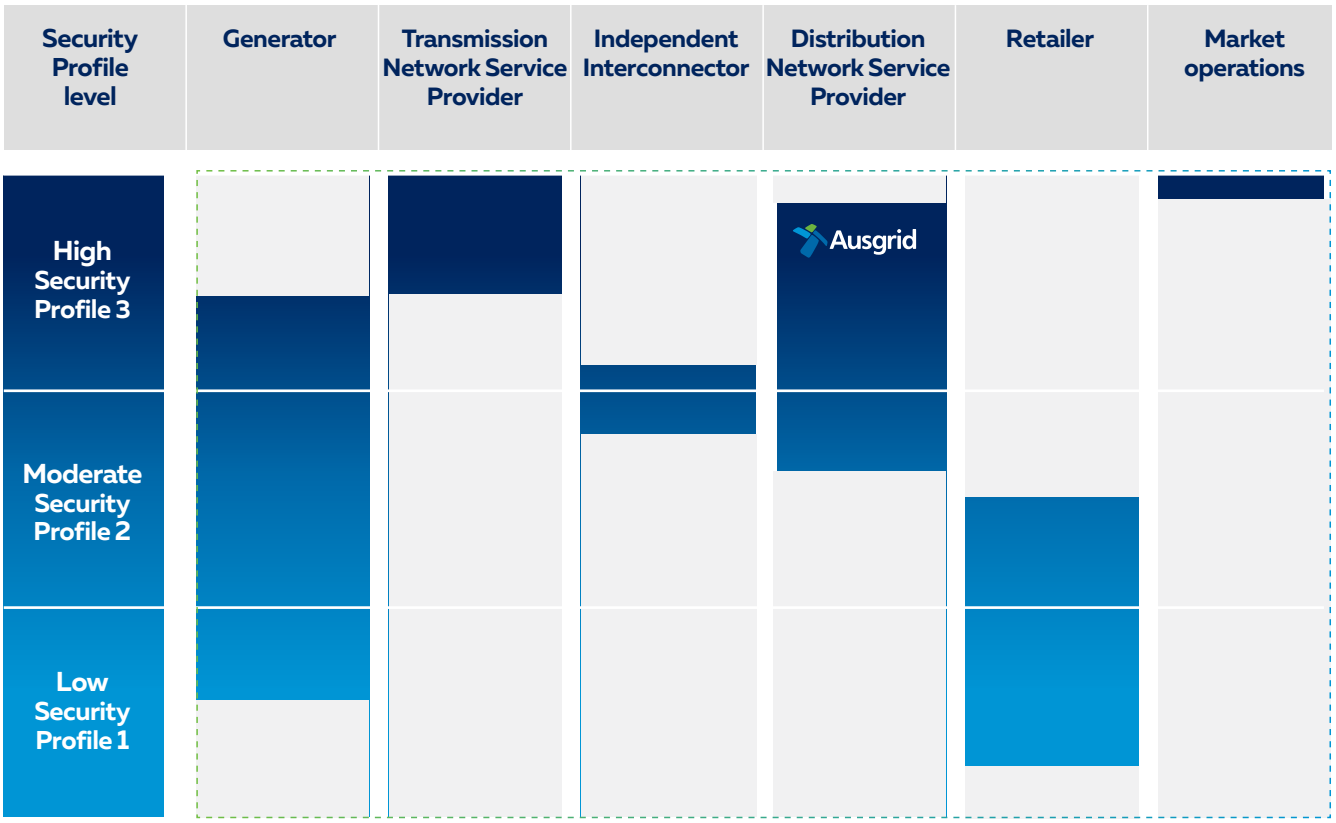
In line with this, we are considering investing in a cyber program that would enable us to adopt practices and protections in line with industry best practice (Security Profile 3 of the Australian Energy Sector Cyber Security Framework).

We took this position to our Voice of Community Panel to get their thoughts. They grappled with this issue and did not reach a clear consensus. Many panel members supported our view, but others remained unconvinced of the value of adopting Security Profile 3, given the cost involved. The cost of a cyber program based on Security Profile 3 is $106 million (see **Appendix A**). This is $26 million more than the cost of a program based on Security Profile 2 (which is about $80 million).

On balance, while there is no strict regulatory requirement, we consider Security Profile 3 to be the prudent maturity level for our business. This is based on our analysis using an AEMO criticality assessment tool (see **Figure 4.1.4**). Given the lack of consensus among our Voice of Community Panel, we are making it a priority to continue engaging on this issue with key stakeholders.

Consultation question 3:
When deciding how to invest in our cyber security program, what factors should we take into account?

Figure 4.1.4 Ausgrid's self-assesed cyber security criticality rating



Source: Ausgrid's analysis based on AEMO's 2022. AESCSF framework and resources.

4.2 Delivering a net zero energy transition

Electricity networks like ours are an essential platform for the transition to net zero. Increasingly, we will be required to manage 2-way energy flows – to customers drawing energy from the grid, and from DER customers and other small generators exporting renewable energy to the grid.

We are hearing our communities want us to proactively prepare to deliver net zero, to avoid reactive, costly network investment and worsening customer outcomes in the future.

In addition, our customers want to play a key role in the transition and want us to provide information and opportunities to do so. This includes lower cost and cleaner energy options like DER.

They also want all customers to benefit from DER and are looking to us to find ways to share the benefits across our communities. This includes advocating for solutions such as community batteries, which will support equitable access to clean energy into the future. This feedback has not been surprising given up to 60% of our Sydney-based customers are renters.

The initiatives and investments we are considering in response to these expectations are outlined below.

4.2.1 Evolving how we deliver and charge for services

We are focusing on evolving our services to support a fast, coordinated transition to net zero. We aim to become a 2-way platform that enables our customers to get the most value from the network and their investments in DER.

Based on what we have heard through our engagement to date, we are proposing 5 key principles to guide our investments to achieve this aim:

1. Understand our customers' needs and their role in accessing cheaper, zero emissions solutions;
2. Explore smarter, flexible solutions through tariffs and data-driven asset management solutions;
3. Avoid restricting customer exports where efficient to support a cost-effective transition to net zero;
4. Recognise almost all low carbon technologies will connect to our network; and
5. Share the benefits of DER with all customers.

Consultation question 4:
What are your views on our proposed 5 key principles for DER investment?

Advocating for an efficient energy transition

We are considering how best to advocate for regulatory reform that supports an efficient transition to net zero. This includes reforms to:

- Allow more effective management of the grid (see **Section 4.2.2**);
- Ensure exports to the grid are only restricted where the cost outweighs the benefits, as defined by our customers; and
- Enable community batteries and other localised solutions that share the benefits of DER.

We think the AER currently understates the cost to customers of restricting exports to the grid.[10] For example, customers are telling us they see a reduced role for coal generation into the future. Restricting customer exports as an energy source for the community may prolong the use of coal generation. We are therefore proposing that the cost of restricting customer exports is higher than the AER's current cost assessment.

10 Ultimately, a higher value aligns with a higher percentage of renewables in the grid and will support the investment needed to support the renewables being integrated into the network. This was articulated in network businesses' submissions to the AER's consultation on developing the CECV (see AER (2022). CECV Methodology).

Supporting DER through community batteries

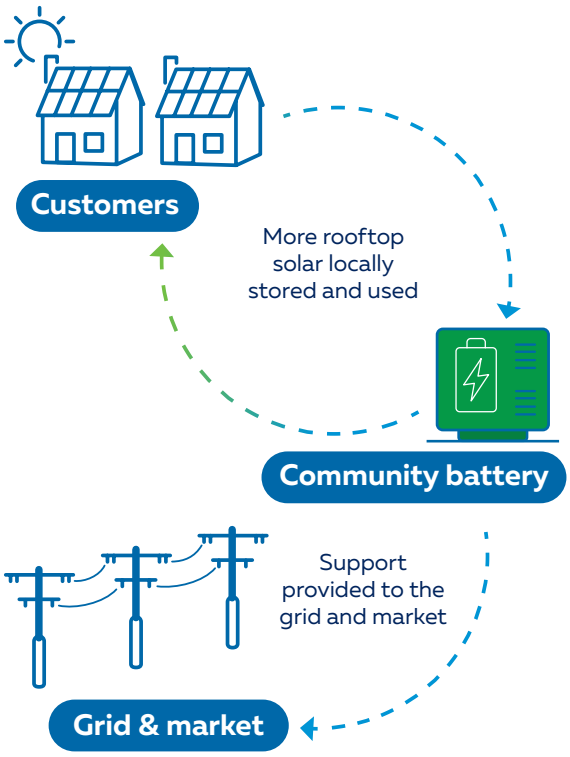
Battery storage is universally recognised as a key enabler for the 100% renewable energy system required for net-zero emissions[11] and Ausgrid is investing to accelerate this transition.

Our Voice of Community Panel is telling us that they strongly support innovation such as our distributor-led community battery trial. **Figure 4.2.1** illustrates how community batteries can provide benefits for customers and the grid.

We are advocating for regulatory reforms that would allow us to maximise the community value of these investments.

Consultation question 5:
What role do you think Ausgrid should play in community battery initiatives?

Figure 4.2.1 Community battery benefits



11 See, for example, International Energy Agency (2022), Energy Storage.

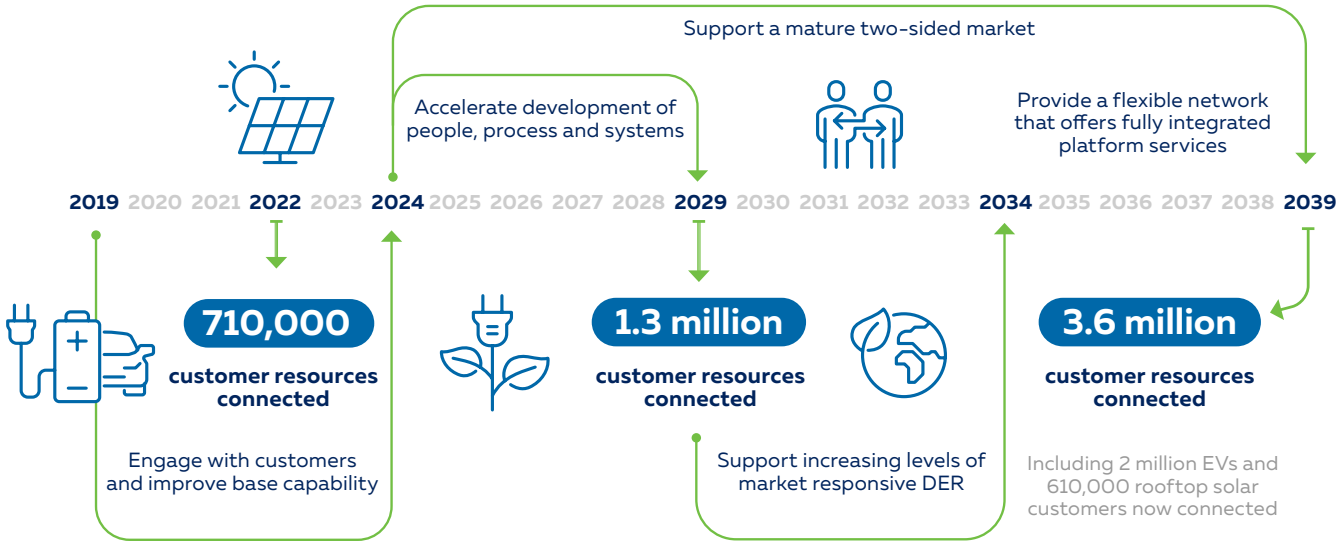
4.2.2 Investing to support a higher update of DER

As we noted in **Section 2.2**, we expect almost a 90% increase in DER in our network area by 2029.

We are developing a roadmap for integrating more DER to support an efficient transition to net zero (see **Figure 4.2.2**).

Adopting this roadmap could result in us investing $153 million over the 2024-29 period to develop the capabilities we need to manage the increasingly complex 2-way energy flows and fairly share costs and benefits across all customers.[12]

Figure 4.2.2 Potential roadmap for DER integration to enable the transition to net zero



Note: Customer rescources include rooftop solar, storage, electric vehicles and controllable loads like hot water.

12 $153 million for delivering net zero is DER totex and includes $96 million in network and $34 million in DER ICT capex and $24 million in smart metering data opex. Note the total $153 million does not sum due to rounding

Enhancing our network management capabilities

Sometimes called 'dynamic network management' we are investigating a range of flexible tools and smart approaches to prepare for our 2-way grid. We plan to implement:

1. **Innovative pricing options**: Providing incentives for customers to use energy in ways that put less pressure on the grid. **Section 4.4.2** outlines the reforms we are considering, and the Pricing Directions Paper provides more detail
2. **Education and collaboration**: Providing information to customers about how to make the most out of their DER and community batteries
3. **Network visibility**: Leveraging network and customer data (including from smart meters) to help us pinpoint constraints on the network, to ensure our solutions are as targeted as possible
4. **Better voltage management**: Using network assets and customer devices to better manage voltage across the network
5. **Tailored connection agreements**: For customers with significant flexibility in how they use the network, offering tailored connection agreements that deliver win-win outcomes for them and the grid[13]
6. **Network augmentation**: Upgrading network capacity where efficient
7. **Curtailment**: Selectively restricting customer exports where options 1-6 above are inefficient or unviable

Building on innovation

During the current 2019-24 period we have been trialling and testing solutions to support and leverage DER, including community batteries, stand-alone power systems (**SAPS**) and microgrids which offer flexible solutions for the transition. These innovations have been supported by our NIAC.

Over the 2024-29 period we are considering to continue investing in line with our current 2019-24 period's level of capital expenditure ($9 million), as well as an additional $1 million of operating expenditure on innovations to support the transition to net zero.[14]

This program would focus on:

- Utilising smart meters to enhance customer safety and improve outage response times;
- Network assets which can lower network losses and reduce our carbon emissions; and
- Systems and capability that increases DER hosting capacity in the network.

13 This includes using dynamic operating envelopes (**DOEs**) which are the limits that an electricity customer can import and export to the electricity grid. They are agreed limits between networks and customers (or their agent) as part of the customer's connection process and serve to signal available capacity where customer equipment is able to respond to network constraints.

14 The proposed innovation expenditure is $50 million totex and includes $45 million in capex and $5 million on opex.

4.2.3 Reducing our own emissions footprint cost-effectively

Our emissions reductions target

Ausgrid is responsible for 3 types of emissions:

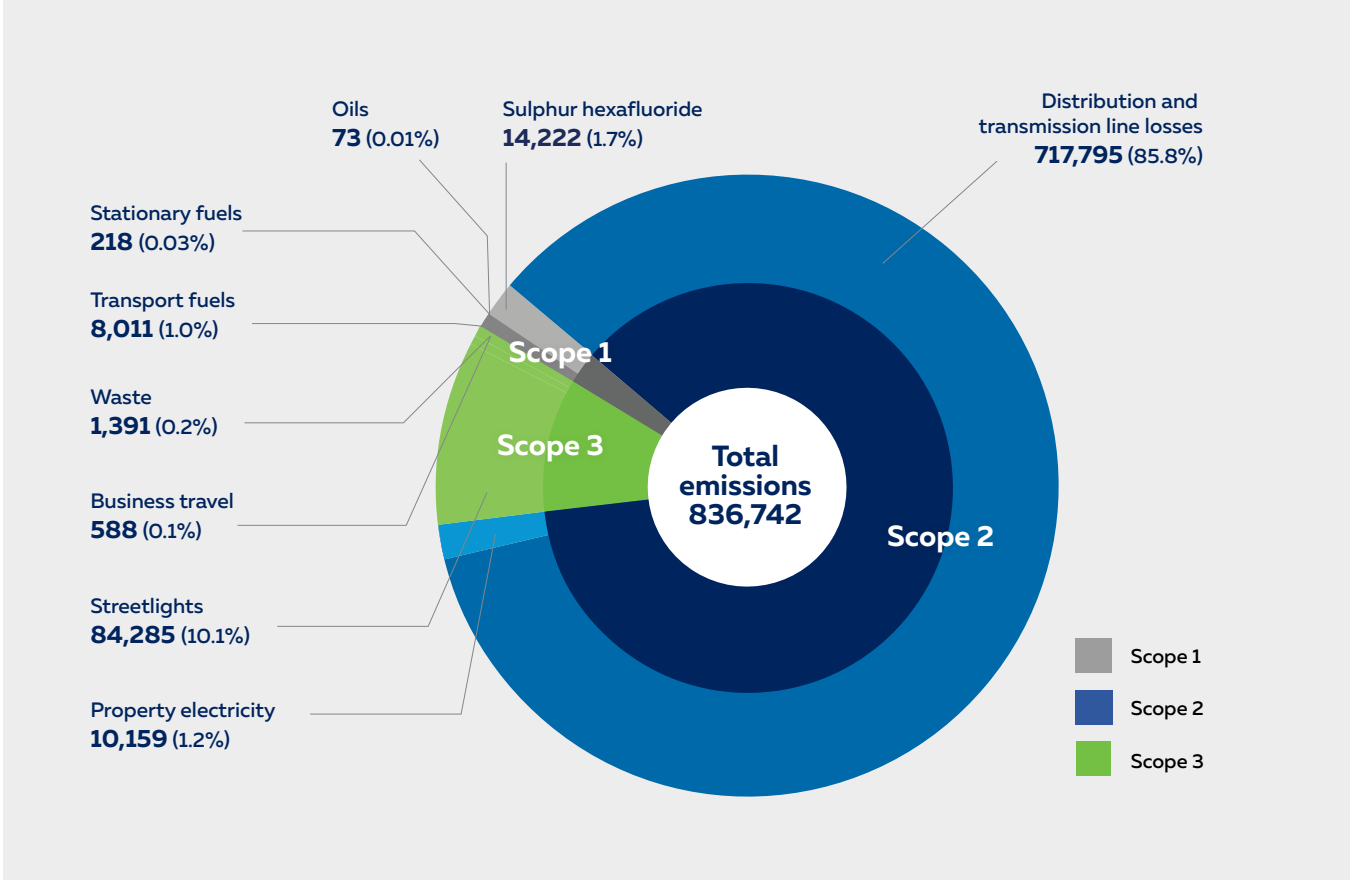
- **Scope 1 direct emissions** from petrol, oils, diesel, LPG, natural gas and sulphur hexafluoride (SF_6);
- **Scope 2 indirect emissions** from electricity use, and distribution and transmission line losses; and
- **Scope 3 value chain emissions** from waste, business travel and streetlights.

Currently, 86% of our emissions are Scope 2 emissions from line losses (**Figure 4.2.3**).

Our near term target is to reduce total Scope 1, 2 and 3 emissions by 8% by 30 June 2024.

We are committed to achieving emissions reductions (including line losses) of 50% by 2030 and net zero no later than 2050. When it comes to reducing our own emissions, our communities are telling us we should do this in a cost-effective manner. Over the 2024-29 period, we are considering electrifying our passenger vehicle fleet as EV options become more affordable, and continuing to roll out smart LED street lighting

Figure 4.2.3 Ausgrid's FY22 emissions breakdown by scope and type (kilotonnes of CO2e)



4.3 Providing a better customer experience

We are hearing from our customers and delivery partners that dealing with us should be a simpler and easier experience. Our customers and delivery partners want to be able speak to a real person when they contact us and also want better communications from us during outages.

In addition, our communities want our service delivery to be more empathetic to our customers' diverse individual needs, and they want us to incorporate Indigenous knowledge to better manage our impact on Country and foster better relationships with Indigenous communities.

The initiatives and investments we are considering in response to this feedback are outlined below.

4.3.1 Making the customer experience simpler and easier

We are considering a range of investments to make our customers' experience simpler and easier.

Improving outage information

By investing an additional $14 million in our Advanced Distribution Management System (**ADMS**) we would enhance our use of SMS to communicate outage information.

This would enable us to:

- Provide customers with real time updates of restoration progress, by expanding our use of SMS alerts to keep customers informed about the progress and resolution of other service requests;
- Provide better information to customers on the reasons for a planned outage; and
- Collaborate more closely with retailers to ensure we have up-to-date contact information to support the success of these initiatives.

Improving how we manage our customer relationships

We want to progressively move delivery of our key services onto one digital platform, our Customer Relationship Management platform (**CRM platform**).

We are considering investing $10 million to improve this platform. This would allow us to send more frequent and helpful updates to our customers on the progress of connections and other work. It would also allow us to have all customer information in one place, which would reduce manual processing and handover between teams and reduce the timeframes to complete work.

In addition, our CRM platform could:

- Introduce a range of fast and easy digital self-service options which will allow customers to identify outage duration, get a quote for tiger tail installation, or check when trees will be trimmed;
- Provide more tailored responses to our different types of customers and delivery partners;
- Improve our data to enable us to get in touch with customers using their preferred contact method; and
- Introduce less intrusive techniques for private and Ausgrid pole inspections, which would also provide more accurate pole condition data and reduce inspection costs.

Introducing a Customer Service Incentive Scheme

We are considering proposing a new Customer Service Incentive Scheme (**CSIS**) to the AER, to drive improvements in our service delivery performance. Under this scheme, we would risk losing $43 million in regulated revenue over the 2024-29 period if we do not improve our performance in key service areas over the period.

In close collaboration with our RCP, we have identified 5 service areas that we believe our customers would most value improvement, and a mix of operational and sentiment metrics that would challenge us to do better in these areas.

The total value of the revenue we would risk is +/- 0.5% of our annual revenue for the 2024-29 period. This equates to around $9 million per year. We have balanced the incentive weightings across the services to reflect the number of people impacted.

Figure 4.3.1 outlines the 5 service areas and metrics in our proposed CSIS.

For information on our other incentive schemes, see **Appendix E**.

Consultation question 6:

Would the proposed Customer Service Incentive Scheme encourage improvement in the service areas that matter most to customers?

Figure 4.3.1: Proposed Customer Service Incentive Scheme metrics

Customer priorities for the CSIS			How we measure	Recent performance	Proposed revenue at risk
Outage management	Planned Outage Management	Urban	Service Ease Score	56%	0.1%
		Regional	Service Ease Score	66%	0.1%
	Unplanned Outage Management		Website – Service Resolution Score	40%	0.075%
Connections	Improved complex connection timeframes		Non-basic connections – median number of weeks from connection offer acceptance to energisation	25.5 weeks	0.175%
Complaint resolution	Improved quality of supply complaint timeframes		Time to resolve quality of supply complaints (DER export and voltage variation)	33.5 days	0.05%

Upgrading our ERP system

Businesses like ours use an Enterprise Resource Planning (**ERP**) system to manage assets, projects, data and our workforce, purchase goods and services, engage safely and efficiently with suppliers, prepare financial accounts, and monitor risk and ongoing compliance.

We are considering investing $143 million in upgrading our ERP system during our 2024-29 period. This would enable us to:

- Provide more innovative services offerings, such as dynamic supply and pricing options;
- Improve our network planning and investment decision-making;
- Improve customer experience by supporting simpler internal processes with fewer handovers between teams;
- Ensure our ERP supplier is still willing to provide us with technical support if needed; and
- Improve our data, which will ultimately make it easier for customers to interact with us.

Our current system has been in place since 1996 and is now due for replacement. Although $143 million may sound like a significant investment, these types of investment are lumpy and infrequent.

4.3.2 Engaging more effectively with our delivery partners and large customers

Our delivery partners are critical to ensuring we meet our communities' expectations. We are hearing from these partners that working with us should be easier and more efficient.

Figure 4.3.2 outlines what we are considering in response to what we are hearing from our delivery partners.

Figure 4.3.2 What we have heard to date from our delivery partners, and what we are considering as a response

	Local councils	Large customers
Who	The local councils in our network areas are essential delivery partners for us as we work collaboratively to plan, operate and maintain our network	Due to their scale, large commercial and industrial customers are a new potential delivery partner in reducing network costs
Ask	Local councils want us to: • Coordinate better with them on works • Improve our vegetation management and public lighting services	These customers want us to: • Lower our costs, invest efficiently and improve productivity • Prioritise greater reliability because outages can have significant cost implications for their businesses (for example inventory wastage) • Give them access to live and accurate outage data • Provide faster connections for complex connections
We are considering	• Improving visibility of Ausgrid's performance on public lighting repairs with local councils by automating processes into our CRM platform • Increasing information exchange to support improved emergency management response during outages • Exchanging data to guide street tree planting, inform vegetation management, and optimise EV infrastructure roll out • Exchanging capital works forward plans through iWORCS to identify opportunities for aligning construction, minimising disruption to the community and reducing costs	• Including faster connections for complex connections as part of our proposed CSIS • Implementing end-to-end optimised digital processes for complex connections via an investment of $7.5 million • Providing dedicated resources to help plan these customers' electrification journey • Identifying opportunities for automated data flows via application programming interfaces (**APIs**) for partners (e.g. NBN) to allow them to better support their customers before and during outages

Continued

Figure 4.3.2 What we have heard to date from our delivery partners, and what we are considering as a response

	Retailers	Accredited Service Providers (ASPs)
Who	Retailers provide the key interface to our customers. They have our customers' contact details and pass through our network charges on their bills to customers	ASPs are key partners that perform work on our network under the NSW Government's ASP Scheme. We provide ASPs with relevant training and authorisation
Ask	Retailers want us to: • Streamline our network prices where possible, particularly because we intend to offer more innovative prices in future • Continue to invest in APIs to ensure they can provide us with customer details in a secure manner • Provide timely communications about changes to our service order timings	ASPs want us to provide: • Easier access to the information they need • Simplified training to maintain their accreditations at a more reasonable cost • Increased 'self-serve' capability so they can provide information to us more quickly • Faster turn-around times for their requests
We are considering	• Streamlining existing prices to support the introduction of new innovative prices and tariff trials • Continuing to implement automated customer data transfer • Continuing to work constructively with retailers on completion of service orders	• Enhancing our ASP portal so that it is easier for ASPs to get the information they need to progress their work and their applications with us • Streamlining our extensive list of Ancillary Network Services fees

4.3.3 Becoming more empathetic in supporting the individual needs of our customers

To deliver more tailored services to support the individual needs of our diverse customers, we are considering investing $2.5 million to improve our contact centres, website and SMS communications. These improvements will allow us to provide a more empathetic service to all our customers, with a particular focus on:

- CALD customers;
- Life support customers;
- Customers in regional areas;
- Customers who are unable to use digital technologies;
- Customers living with a disability; and
- Customers experiencing financial hardship.

Developing a CALD community strategy

We serve some of the most culturally and linguistically diverse areas in Australia and we want to support CALD customers engaging and dealing with us. In addition to the improvements discussed above, we are considering implementing a CALD community strategy that:

- Provides a clear framework for how we engage with CALD communities; and
- Embeds dedicated CALD customer processes in all our customer experience touch points.

This strategy would build on previous initiatives to improve our service delivery to CALD customers, including:

- Participating in a pilot program with other energy businesses to help improve energy literacy and safety for CALD communities;
- Training our front-line staff on how to work with telephone interpreters and provide culturally empathetic support; and
- Translating our life support materials into the 10 most common languages across our network area.

Consultation question 7 (for CALD customers and their representatives):

What should we consider when improving the services we deliver to CALD communities?

For example, are there culturally significant dates that we should be aware of when scheduling planned outages?

Incorporating Indigenous knowledge into our planning processes

We recognise the Traditional Owners of the lands on which we operate, and on which our infrastructure is built.

Over the 2024-29 period, we are considering incorporating Indigenous knowledge into our planning processes so that Indigenous communities in our network area have opportunities to influence our project plans and improve the management of Country by sharing their knowledge. We also plan to continue building our relationships with these Indigenous communities, and moving further towards reconciliation.

In February 2022 we launched our second Innovate Reconciliation Action Plan (**RAP**). This plan sets out our vision for reconciliation, which includes 4 actions with 18 deliverables to be completed by June 2024. We will develop a new RAP for the 2024-29 period.

Better meeting the needs of life support customers

We recently surveyed our life support customers to understand their ongoing needs. They told us they would value:

- Advanced warnings and on-time and accurate communications relating to outages;
- Back-up power to support their life support equipment and telecommunications;
- Support to access better information related to battery and solar usage;
- Installation of community batteries in their local network; and
- An easier renewal process of their Life Support Customer status.

We are exploring options to address these needs.

4.4 Facilitating an affordable energy transition

We are consulting on our Draft Plan at a time of significant economic upheaval. As we outline in **Section 1**, the aim of our Draft Plan is to deliver value for money services and support the transition to net zero.

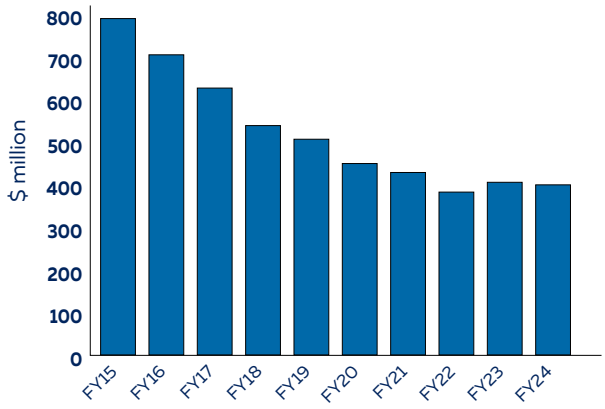
We are considering the following initiatives to facilitate an affordable transition.

4.4.1 Building on our significant cost reductions implemented since 2015

Committing to further operating cost savings

We are proud to have reduced our annual operating costs by around 50%, or around $400 million, since 2015 (see **Figure 4.4.1**). We have done this by improving our productivity to drive long-term bill savings for our customers.

Figure 4.4.1 Operating costs since FY15 (real $, FY24)



We are committed to continuing to reduce our operating costs over the 2024-29 period. One way we will demonstrate this is by embedding a productivity target in our proposed operating cost allowance. This target establishes a minimum level of cost reductions that will be fully passed through to customers upfront.

The AER expects a productivity pre-commitment of at least 0.5% per year which would require us to find $32 million in additional savings over the 2024-29 period. Our Draft Plan includes a productivity factor of 0.5%. However, the target we will adopt for our final proposal to the AER remains an open discussion with our customers and the RCP.

Consultation question 8:

How do we fairly share the benefits of productivity gains with customers?

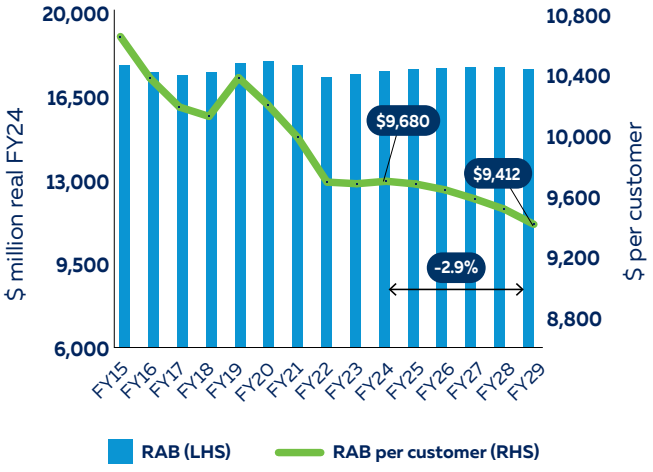
Controlling our capital expenditure

When we invest capital in new network and other assets to provide our services, we recover the cost of that asset from customers over many years.

One way we can assess whether our capital investments could create an affordability challenge for our customers is by measuring the value of our assets per customer over time. Significant or steady increases in this value would lead to higher prices for our customers generations into the future.

As **Figure 4.4.2** shows, based on the capital expenditure included in our Draft Plan, we expect that our real asset value per customer will decline by 2.9% over the 2024-29 period. This includes the capital expenditure required for all the proposed responses to our communities' expectations on building our network resilience, delivering net zero and providing a better customer experience, as well as our annual capital expenditure needed to keep the system safe and reliable and support our operations.

Figure 4.4.2 Asset value and asset value per customer (real $, FY24)



4.4.2 Giving our customers more choice and control over their energy services and bills

New ways of living and working are leading to new patterns of energy use. These changes create new opportunities for customers to be rewarded for using the network more flexibly.

For example, on 1 July 2019 we introduced demand pricing structures for residential and small business customers that have smart meters. Demand tariffs, if passed on to customers by their retailer, allow customers to lower their bills simply by spreading out when they use their appliances. We now have more than 160,000 residential and small business customers on network demand tariffs.

On 1 July 2022 we commenced 3 innovative tariff trials for 2-way energy flows, flexible loads and community batteries.

From 1 July 2024 we want to evolve our pricing arrangements to support an affordable transition to a net zero future (see also **Section 4.2.2**).

We are considering a range of pricing reforms. These include introducing export pricing with both a charge and a reward component. This would give DER customers an opportunity and incentive to adjust the timing of their energy exports to reduce the costs and increase the benefits of their exports for themselves and for the whole energy system. It would also signal the increasing costs of DER exports to the network, so that customers considering investing in DER can factor them into their decision-making.

We are also considering reforms to:

- Offer pricing arrangements that reward customers for being flexible in when they use energy (leading to a lower cost transition);
- Combine our shoulder and off-peak energy rates to reduce our daytime energy charges. This encourages load-shifting to times when rooftop solar systems are generating, and will reduce the cost of the system for all;
- Introduce embedded network pricing to improve fairness across our tariffs;
- Extend the demand charge to weekends for residential customers due to the observed usage patterns for this customer segment; and
- Amend our controlled load switching times to encourage hot water heating in the middle of the day.
- In addition, we plan to continue trialling several innovative new tariffs to facilitate take up of EVs and batteries in our network beyond 2029.

For more information on our proposed pricing reforms refer to our Pricing Directions Paper.

Consultation question 9:

How should we fairly balance price impacts across different customer groups?

4.4.3 Taking a risk-based approach to investments that delivers equitable outcomes across generations

Our investment evaluation and governance processes are something we have worked hard to improve in recent years. When we submitted our plans to the AER for the current 2019-24 period, these processes were not where they needed to be.

Our evaluation and governance approaches are now industry best-practice. We employ a sophisticated software program that allows us to analyse the performance of the millions of assets across our network. This allows our Board and investment governance committees to optimise their decision-making by giving them access to highly advanced analytical information calculating the change in risk from either making an investment or deferring it to a later time. We are routinely conducting project post-implementation reviews to ensure we are continually learning and improving.

Taking a risk-based approach promotes equity across generations. This can be achieved by calculating a sustainable level of investment that prevents current and future customers facing materially different levels of costs and risk. We will continue to improve our investment evaluation and governance processes because this will result in the most optimal investments being made to deliver for our communities.

5

If implemented, our Draft Plan would mean our share of an average household bill will increase by 4.7% per annum (including inflation) over the 2024-29 period

5 Indicative bill impacts

Our Draft Plan reflects an 'all-in' approach for responding to our communities' expectations and ambitions for a cleaner, more resilient, and fairer energy system. We think the potential responses we have outlined in the previous sections of our Draft Plan would deliver what our customers, partners and other stakeholders are telling us about what they want from us in the 2024-29 period and beyond.

However, it is also important that our responses deliver value for money for our customers. As previously noted, we are presenting our Draft Plan at a time when the cost of living is rising due to a range of factors, many of which are outside of our control.

In this section we outline how our Draft Plan, if implemented, would impact annual electricity bills to help an assessment of the Draft Plan's value for money.

If we implemented our Draft Plan, we estimate that the network share of average bills would increase in real terms (excluding inflation) by 2.2% for households, 3.4% for small businesses, and 4.4% for large businesses in each year of the 2024-29 period.[15]

In nominal terms (including inflation) this is equivalent to 4.7% for households, 5.9% for small businesses, and 6.9% for large businesses in each year of the 2024-29 period (see **Figure 5.1**).

For a typical household, this would mean the network component of an annual electricity bill would rise from $580 in 2023-24 to around $729 in 2028-29 – or by $149 by the end of the 2024-29 period (see **Figure 5.2**).

15 The distribution component of a customer's bill represents 34% and 38% of the total bill for households and small businesses (respectively). This means the percentage impact on the total bill will be smaller than the impact on the network bill.

Figure 5.1 Estimated annual impacts of our Draft Plan on customer bills over 2024-29 (nominal)

Annual bill change %	Residential		Small business		Large business	
	Network share	Total bill	Network share	Total bill	Network share	Total bill
2024-25	4.5%	1.5%	6.5%	2.4%	6.7%	Varies by customer size
2025-26	5.4%	1.8%	7.2%	2.7%	8.3%	
2026-27	5.1%	1.7%	5.9%	2.2%	7.2%	
2027-28	3.8%	1.3%	4.7%	1.8%	5.7%	
2028-29	4.5%	1.5%	5.2%	2.0%	6.5%	
Average	**4.7%**	**1.6%**	**5.9%**	**2.2%**	**6.9%**	**N/A**

Note: Ausgrid total network charges include distribution plus pass through of transmission costs and the NSW Climate Change Fund. In FY24 our estimate of total network charges is $580 Assumes the same bill share in FY23 applies to FY29. Ausgrid does not control transmission, NSW Climate Change Fund, retail, generation or environmental components of bills.

Of this $149 total annual increase:

- Most (around $111) is due to factors largely outside our control, like rising interest rates and insurance premiums (discussed in **Section 2.4**). This shows the bill impact of changes in the economic environment are significant, even before we respond to our communities' expectations; and
- Around $38 would reflect the costs of implementing our potential responses to what we have heard from our communities in our engagement to date (outlined in **Section 4**).

Other factors affecting bills

Network costs are only one component of our customers' electricity bills. Their bills also recover the costs of electricity generation and transmission, as well as retail and environmental scheme costs.

We expect to see significant investments in transmission infrastructure to connect large-scale renewable generation to the grid over the 2024-29 period, which would lead to increases in the transmission component of bills.

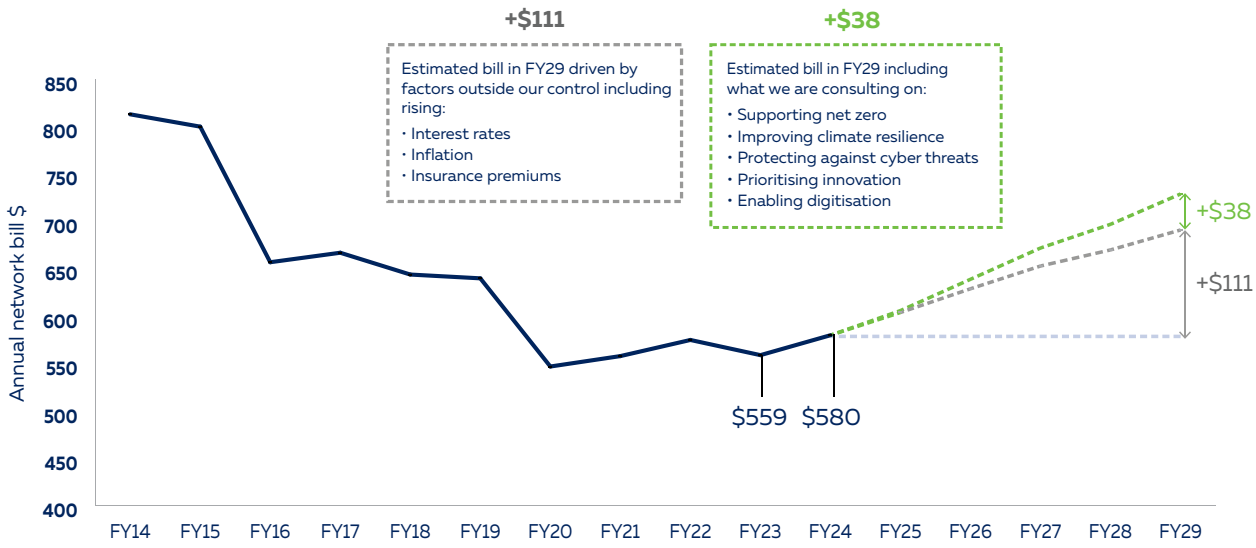
Generation costs could also increase, as could environmental scheme costs under the NSW Government's Electricity Infrastructure Roadmap (see **Section 2.4**), resulting in further increases in bills.

We are also interested in your views on how the bill increases are spread over the 2024-29 period. For example, we could even out the expected increases so they are around the same percentage increase each year. Or we could have a higher increase in earlier years and lower in later years, or vice versa.

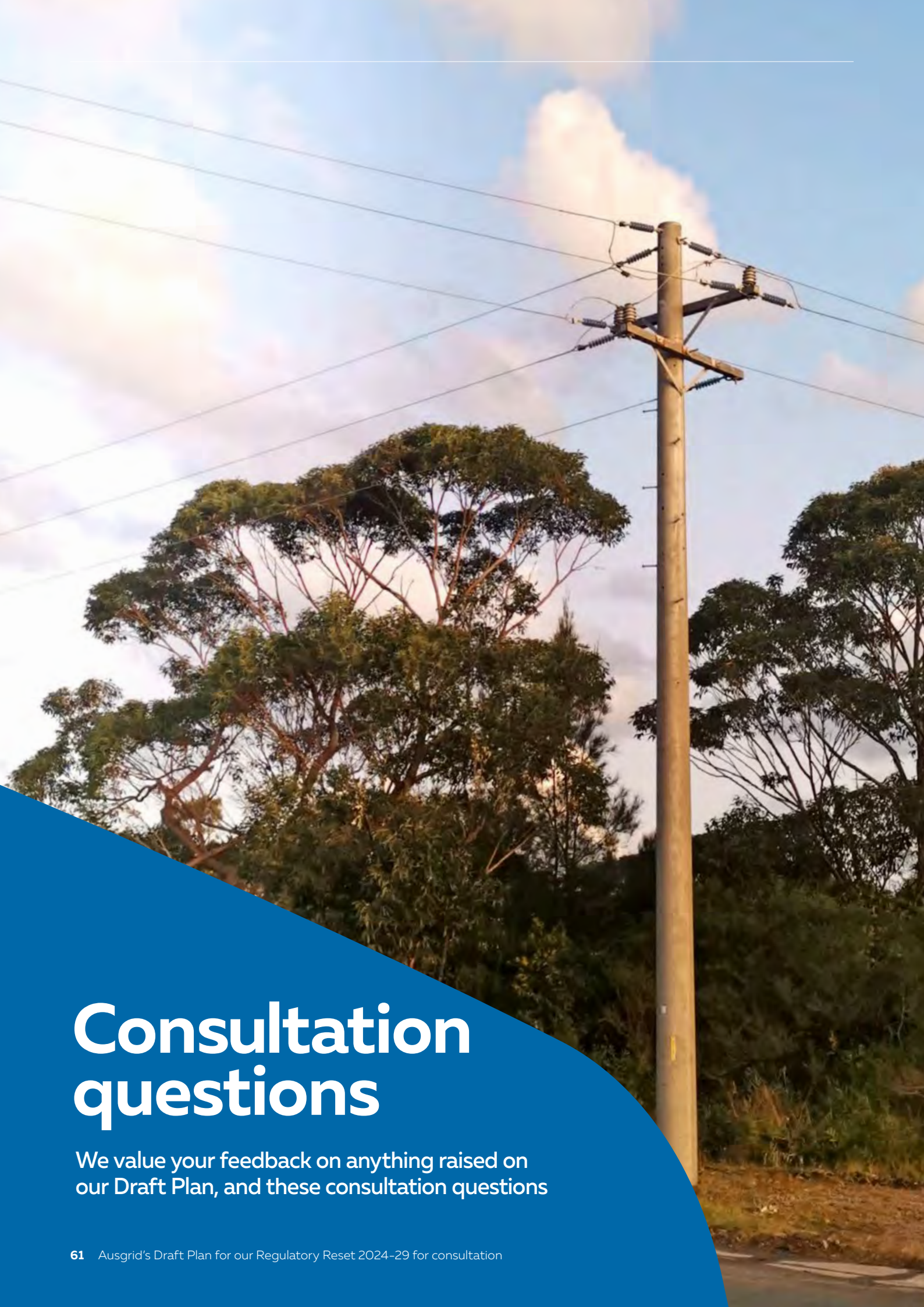
Consultation question 10:

What factors should we take into account in spreading customer price impacts across the 5 year period?

Figure 5.2 Drivers of potential increases in household network charges ($ nominal, excl GST)Notes:



1. Ausgrid total network charges include distribution plus pass through of transmission costs and the NSW Climate Change Fund. In FY24 our estimate of total network charges is $580.



Consultation questions

We value your feedback on anything raised on our Draft Plan, and these consultation questions

What we would like your further feedback on

Page 13

1. Given our communities' expectations for the grid, and the affordability challenge they are also facing, how do we deliver value for money into the future?

Page 42

2. How should we decide which community support services we offer?

Page 43

3. When deciding how to invest in our cyber security program, what factors should we take into account?

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4. What are your views on our proposed 5 key principles for DER investment?

Page 45

5. What role do you think Ausgrid should play in community battery initiatives?

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6. Would the proposed Customer Service Incentive Scheme encourage improvement in the service areas that matter most to customers?

Page 53

7. **For CALD customers and their representatives**: What should we consider when improving the services we deliver to CALD communities? For example, are there culturally significant dates that we should be aware of when scheduling planned outages?

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8. How do we fairly share the benefits of productivity gains with customers?

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9. How should we fairly balance price impacts across different customer groups?

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10. What factors should we take into account in spreading customer price impacts across the 5 year period?

Appendices:

Click here

Page 5 – Appendix A

11. What parts of our self-assessment do you agree or disagree with and why?

Page 19 – Appendix B

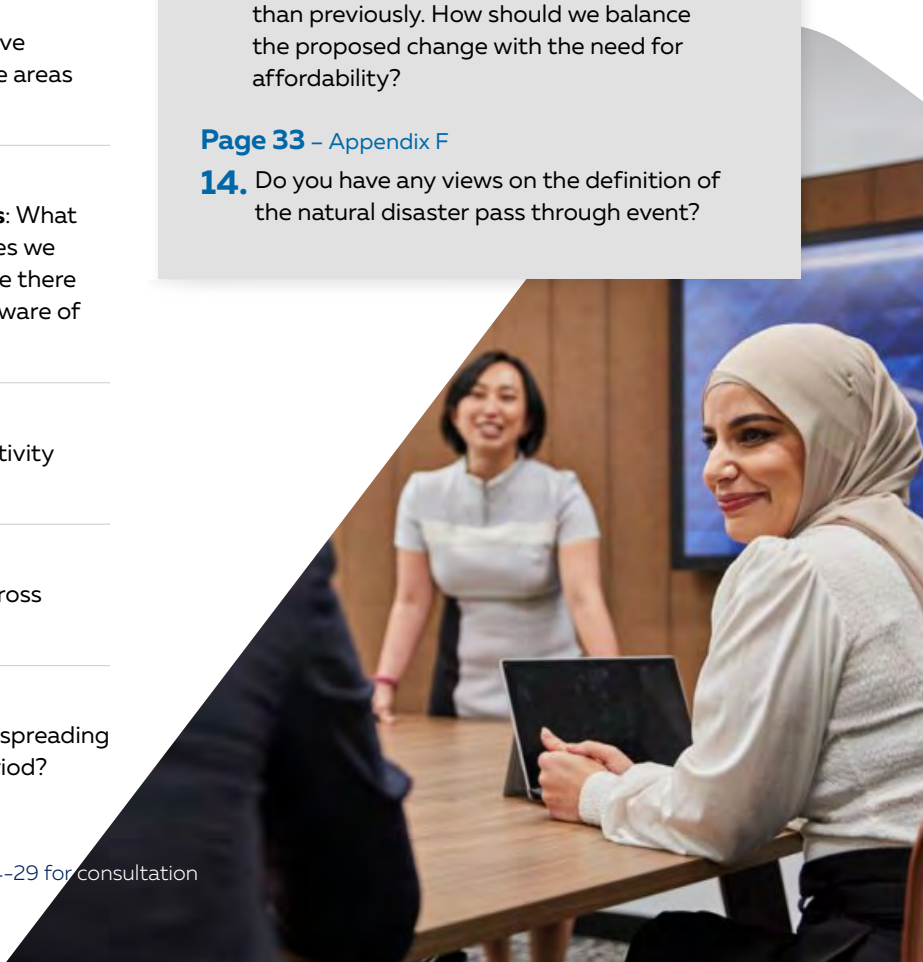
12. What is the best way of measuring improvements in the productivity of our capital investments?

Page 27 – Appendix C

13. While our proposed depreciation change will improve intergenerational equity, it will mean current customers bear a higher cost burden than previously. How should we balance the proposed change with the need for affordability?

Page 33 – Appendix F

14. Do you have any views on the definition of the natural disaster pass through event?



Glossary

2024-29 period – Ausgrid's next regulatory control period from 1 July 2024 to 30 June 2029

ACSC – Australian Cyber Security Centre

ADMS – Advanced Distribution Management System

AEMO – Australian Energy Market Operator

AER – Australian Energy Regulator

API – Application Programming Interface

ASP – Accredited Service Provider. ASPs perform contestable works on our distribution network. ASP-1s construct the networks, ASP-2s design service wire and cable connection work, and ASP-3s design the network

BAU – Business-As-Usual

CALD – Culturally And Linguistically Diverse

Capex – Capital expenditure

CBA – Cost Benefit Analysis

CCC – Ausgrid's Customer Consultative Committee

CCF – The NSW Government's Climate Change Fund

CCP – AER's Consumer Challenge Panel

CECV – Customer Export Curtailment Values

CESS – Capital Expenditure Sharing Scheme

Climate Resilience Framework – Ausgrid's co-designed climate resilience framework called *Promoting the long-term interests of consumers in a changing climate: A decision-making framework*

Communities – Our residential and business customers and the people and institutions who support them engage with the energy market, such as our partners (including retailers, councils, metering providers, ASP's and aggregators) and other stakeholders (including customer advocates and government agencies)

CRM platform – Customer Relationship Management platform

CSIS – Customer Service Incentive Scheme

DER – Distributed Energy Resources includes network assets like community batteries and SAPS and customer energy assets like rooftop solar, household batteries, EVs and flexible customer load such as swimming pool pumps, and electric hot water systems

DNSP – Distribution Network Service Provider

DMIAM – Demand Management Innovation Allowance Mechanism

DMIS – Demand Management Incentive Scheme

DMO – Default Market Offer

DOE – Dynamic Operating Envelopes

Draft Plan – This document

DSO – Distribution System Operators

EBSS – Efficiency Benefit Sharing Scheme

EWP – Elevated Work Platform

ERP – Enterprise Resource Planning

ESOO – Electricity Statement Of Opportunities

ESS – Energy Savings Scheme

EV – Electric Vehicle

GSL – Guaranteed Service Level

GSP – Gross State Product

ICT – Information Communications and Technologies

IFRIC – International Financial Reporting Standards Interpretation Committee

ISP – Integrated System Plan

LHS – Left hand side

MED – Major Event Days

MPFP – Multilateral Partial Factor Productivity

NEM – National Electricity Market

NER – National Electricity Rules

NIAC – Network Investment Advisory Committee

NUOS – Network Use Of System

OEF – Operating Environment Factors

Opex – Operating expenditure

OTI – Operational Technology and Innovation

PaaS – Product as a Service

PDRS – Peak Demand Reduction Scheme

Pricing Directions Paper – Our pricing directions paper, for consultation with our Draft Plan, outlines our current thinking on the pricing reforms and pricing innovation we will include in our January 2023 Tariff Structure Statement proposal

PTRM – Post-Tax Revenue Model

PWG – Pricing Working Group

RAB – Regulated Asset Base

RAP – Reconciliation Action Plan

RBA – Reserve Bank of Australia

RCP – Reset Customer Panel

Repex – Replacement expenditure

Repex model – AER's repex evaluation model

REZ – Renewable Energy Zone

RHS – Right hand side

SaaS – Software as a Service

SAPS – Stand-Alone Power System

SCS – Standard Control Service

STPIS – Service Target Performance Incentive Scheme

Totex – Total expenditure

VCR – Value of Customer Reliability

VoC – Voice of Community

Voice of Community Panel - comprises the 45 randomly selected members of the public who represent our diverse range of residential customers in our extensive citizens jury process

Voice of Community program – Ausgrid's Voice of Community program is an initiative that focuses on improved reporting and supporting better customer outcomes

WACC – Weighted Average Cost of Capital

WARL – Weighted Average Remaining Life

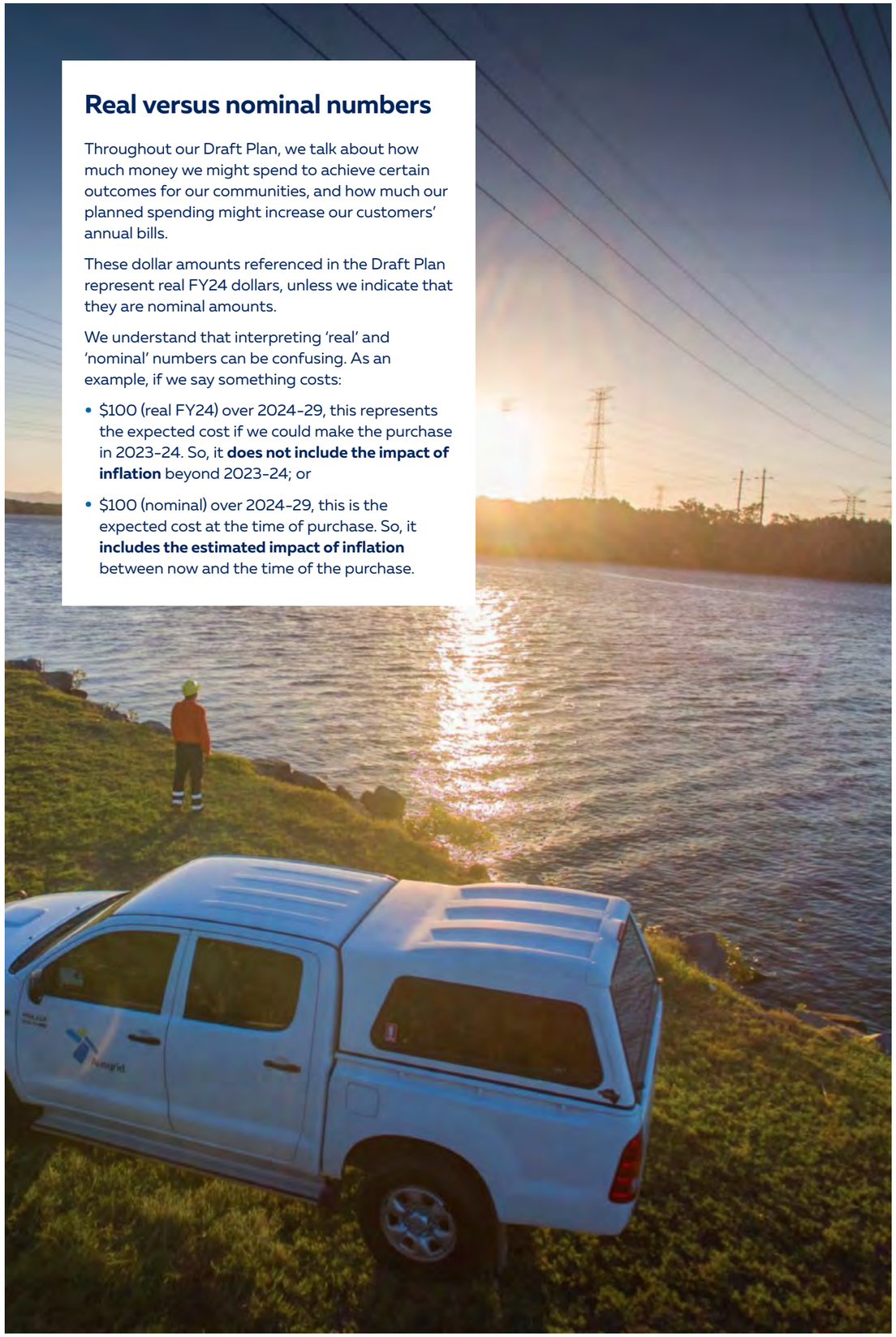
Real versus nominal numbers

Throughout our Draft Plan, we talk about how much money we might spend to achieve certain outcomes for our communities, and how much our planned spending might increase our customers' annual bills.

These dollar amounts referenced in the Draft Plan represent real FY24 dollars, unless we indicate that they are nominal amounts.

We understand that interpreting 'real' and 'nominal' numbers can be confusing. As an example, if we say something costs:

- $100 (real FY24) over 2024-29, this represents the expected cost if we could make the purchase in 2023-24. So, it **does not include the impact of inflation** beyond 2023-24; or
- $100 (nominal) over 2024-29, this is the expected cost at the time of purchase. So, it **includes the estimated impact of inflation** between now and the time of the purchase.



Ausgrid

For more information, or to make a submission go to:
YourSay.Ausgrid.com.au

September 2022

Appendices: Regulatory Matters for our Draft Plan

for consultation

Empowering communities for a resilient, affordable and net-zero future.

Ausgrid

List of appendices

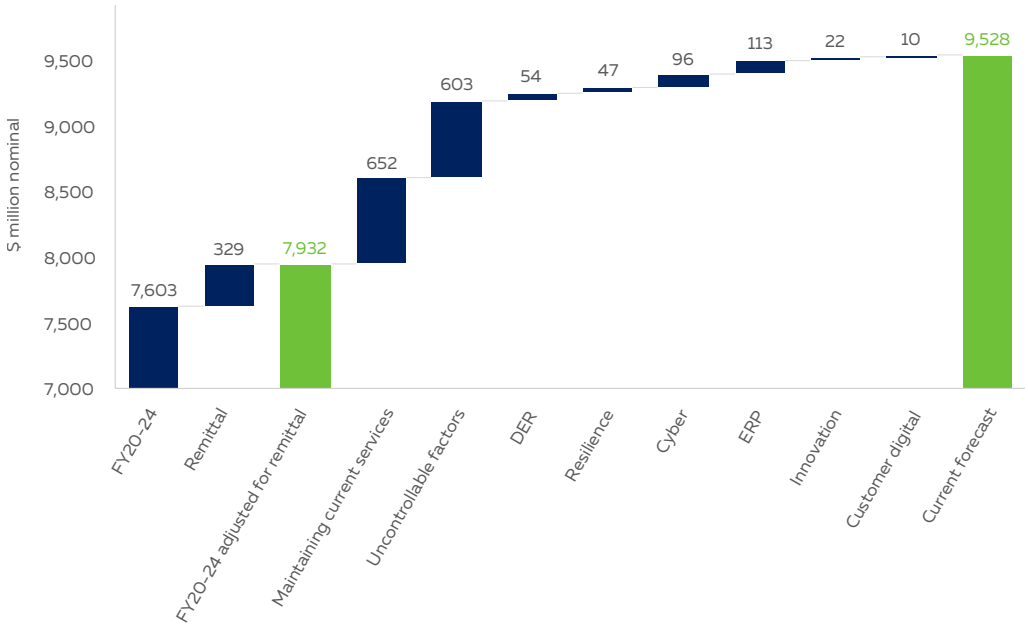
Introduction

The following appendices outline the technical regulatory details of our **Draft Plan**. This includes how we have converted the potential initiatives and investments outlined in **Section 4** of the Draft Plan into our forecast revenue and indicative bill outcomes.

As discussed in **Section 5** of the Draft Plan, the revenue we would require to recover the costs of the potential new investments is only a small portion of the overall bill increases.

Figure 1 shows the forecast revenue that results from the Draft Plan, broken down by factors primarily within and outside our control. Most of the increase is driven by factors that are challenging for us to control.

Figure 1: Forecast building block revenue ($ million, nominal)



Notes:

1. Ausgrid revenue, not total NUOS.
2. 'Remittal' is the amount paid back in 2019-24 for revenue over-recovery in 2014-19. Adding this back to 2019-24 revenue allows comparison of like with like revenue.
3. Maintaining current services is predominantly return on asset and depreciation of business as usual capex and assumes:
   - Capex in 2024-29 excludes amounts itemised in other steps;
   - Opex is rolled forward with no step changes;
   - Actual inflation equals forecast inflation in the current period; and
   - Weighted average cost of capital (**WACC**) is the same as current period.
4. 'Uncontrollable factors' include WACC, actual inflation, insurance and software accounting changes. Itemised revenue impacts are based on total expenditure (opex plus capex).

The appendices are as follows:

- **Appendix A** details our current thinking on capex;
- **Appendix B** details our current thinking on opex;
- **Appendix C** provides more detail about overall revenue; and
- **Appendices D-G** provide further regulatory information that may assist in understanding key aspects we are considering for our regulatory proposal in January 2023. This includes demand forecasts, cost pass throughs and service classification.

A 2024-29 capital expenditure

Capex is a significant driver of our component of electricity prices and customer bills. It refers to the investments we make in network assets (e.g. poles and wires) and supporting non-network assets (e.g. ICT systems, property and motor vehicles) to deliver customers the service they expect from us.

The assets we invest in today can remain in service beyond 2070. Throughout the life of these assets, we receive income to compensate for the cost of raising finance for these assets and to recover the value of the investment. In this way, the cost of an asset built today is not just borne by current customers but also future generations that may use the asset over its useful life.

Total forecast capex

Our total forecast capex for 2024-29 is $3,239 million. This is 7% higher than our current period spend.[1] Though an increase, this amount of capex will not cause growth in the value of our RAB per customer in real terms. This is because the amount of capex we forecast adding to the RAB is similar, in real terms, to the amount scheduled to be subtracted through depreciation, while our customer numbers are increasing.

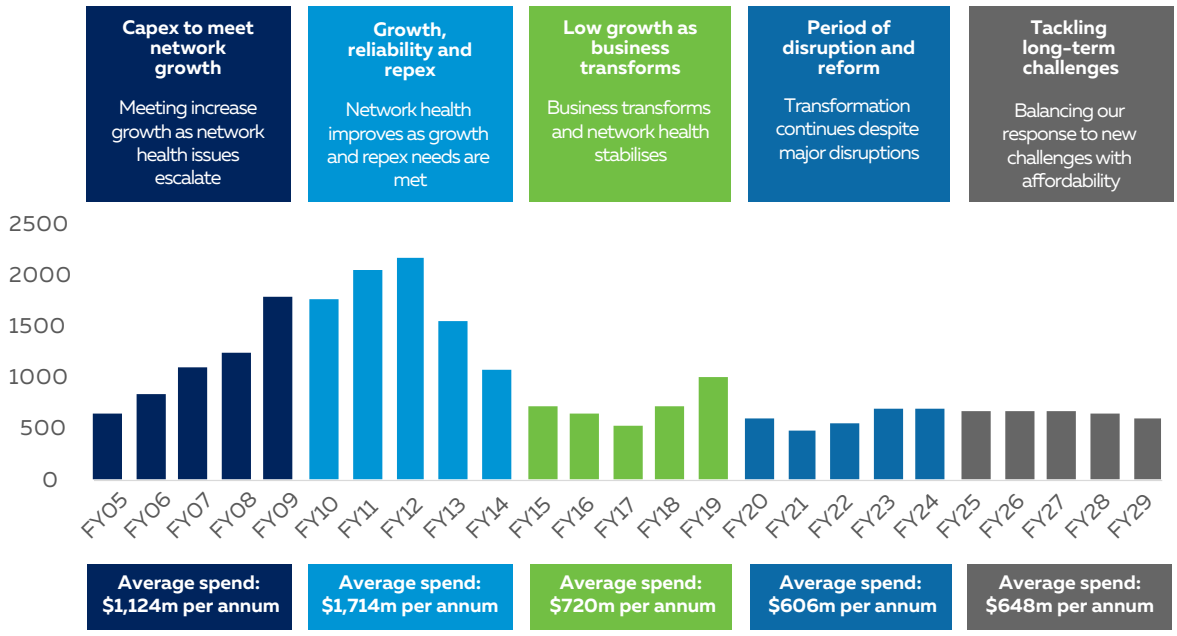
We are consulting on whether our approach appropriately balances the need to maintain the affordability of our services with the need to tackle long-term challenges like climate change, the facilitation of a net zero future and keeping pace with cyber threats.

Rising to the challenges ahead

We have experienced a period of major disruptions in recent years, including the COVID-19 pandemic, industrial action, and a pause on live work on our network. These disruptions slowed our capital program in the early years of the 2019-24 period, as shown in **Figure A.1**. During this period, we also took steps to transform our business by lowering our cost footprint and implementing reforms to make us more productive.

The reforms we introduced have set us up to meet the challenges that lie ahead. They will allow us to keep our 2024-29 capex reflective of our spend in recent years while we tackle the challenges of the future.

Figure A.1: We will keep our capex levels over the 2024-29 period consistent with recent periods ($ million, real FY24)



1 Our 2024-29 capex is 11% higher than the current period if Software-as-a-Service (**SaaS**) costs, which are now opex, were treated as capex.

Our self-assessment of our current forecast

Our aim is to submit a regulatory proposal to the AER that is 'capable of acceptance'. We want to hear from our customers about how close they think we are to meeting this standard.

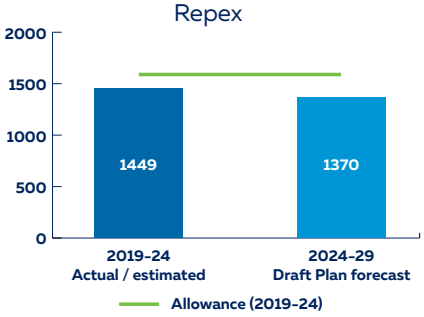
Figures A.2 and **A.3** below include a self-assessment which we invite stakeholders to review and, where they disagree, challenge. To perform this self-assessment, we have considered our forecast relative to our current period spend and other key considerations like the engagement we have had to date with our customers.

The feedback we get will help us focus our attention on the key areas that require more work, giving us the best chance to lodge a regulatory proposal that is capable of acceptance by the AER.

Consultation question 11:
What parts of our self-assessment do you agree or disagree with and why?

Figure A.2 Network and overheads capex ($ million, real FY24)

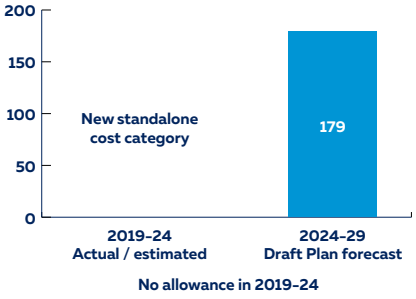
Repex



More work required — Capable of acceptance

Our repex forcast is 5% below our 2019-24 spend and 14% below our 2019-24 allowance

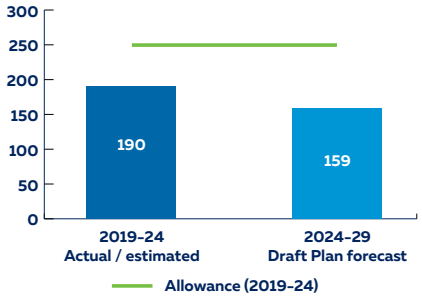
Resilience



More work required — Capable of acceptance

We are in the process of applying our Resilience Framework in collaboration with customer advocates

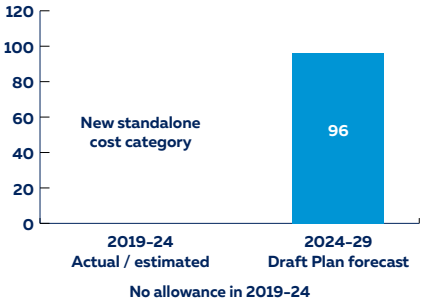
Growth



More work required — Capable of acceptance

Our growth forecast is 16% below our 2019-24 spend and 35% below our 2019-24 allowance

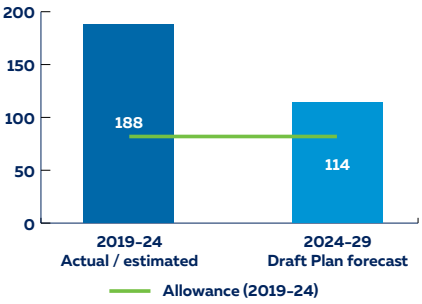
Distributed Energy Resources (**DER**)



More work required — Capable of acceptance

We are finalising key inputs into our DER enablement program

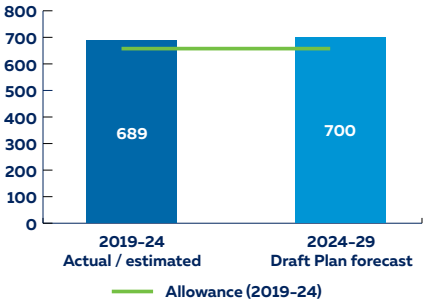
Operational Technology and Innovation (**OTI**)



More work required — Capable of acceptance

Our OTI forecast is 39% below our 2019-24 spend

Overheads

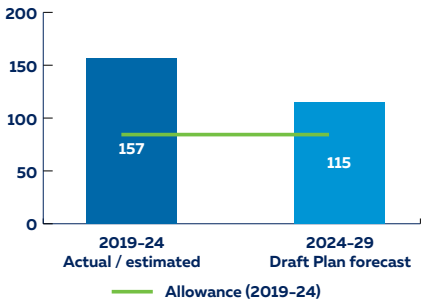


More work required — Capable of acceptance

We have used the AER's standard 75:25 fixed-to-variable approach to test the efficiency of our overheads

Figure A.3 Non-network capex ($ million, real FY24)

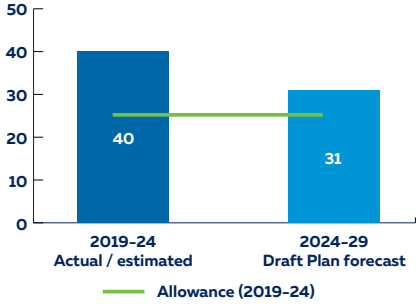
Recurrent ICT



More work required — Capable of acceptance

Our total recurrent ICT spend in 2024-29 is $115 m capex and $29 m SaaS opex. The capex component is 27% less than our 2019-24 spend and at the total expenditure level, including SaaS, 8% lower

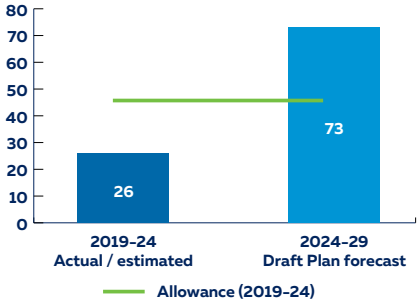
ICT - Cyber Security



More work required — Capable of acceptance

Our total cyber spend in 2024-29 is $31 m capex and $57 m SaaS opex. The capex component is 23% less than our 2019-24 spend. At the total expenditure level, including SaaS, it is 118% more

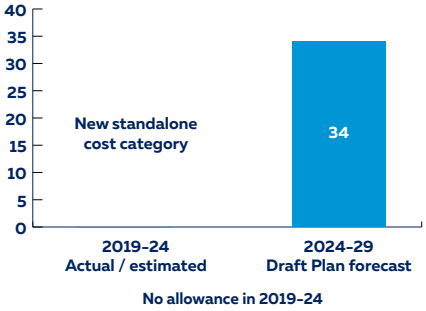
Enterprise Resource Planning (**ERP**)



More work required — Capable of acceptance

The total cost of our ERP replacement program is $143 m ($73 m in capex and $70 m in SaaS opex)

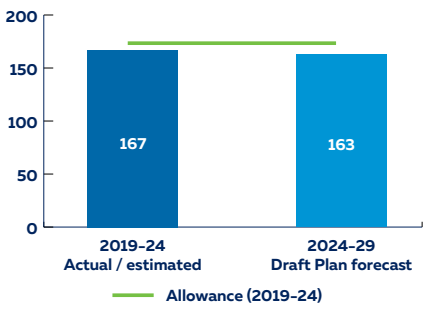
ICT - DER



More work required — Capable of acceptance

Our DER-related ICT program will provide the network visibility we need to enable our customers' DER ambitions

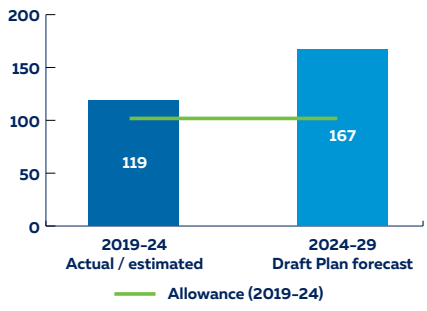
Property



More work required — Capable of acceptance

Our property forecast is in line with our 2019-24 spend and allowance

Fleet



More work required — Capable of acceptance

Our fleet forecast is 41% higher than our 2019-24 spend due to our elevated work platform (**EWP**) replacement program and changes to safety standards

Note 1: SaaS implementation costs are treated as capex in the 2019-24 period but, following an accounting standards change, will be treated as capex in the 2024-29 period.

Total forecast capex by investment driver

Figure A.4 shows the contribution of the different categories or drivers of capex to our total forecast capex of $3,239 million for 2024-29. This appendix discusses our forecasts for each of these investment drivers in turn.

Figure A.4 Capex forecast by driver ($ million, real FY24)

	FY25	FY26	FY27	FY28	FY29	FY20-24 actual/ estimated	FY25-29 total forecast	% change
Replacement	278	258	265	300	271	1,449	1,370	-5%
Resilience	24	37	45	39	34	1	179	n/a
Growth	43	30	29	29	29	190	159	-16%
DER	14	17	21	21	22	4	96	n/a
OTI	29	21	20	23	22	188	114	-39%
ICT	66	96	56	37	36	222	292	32%
Fleet	44	41	32	25	26	119	167	41%
Property	36	24	53	23	27	167	163	-2%
Overheads	137	139	143	141	139	689	700	1%
Total	**671**	**663**	**663**	**638**	**605**	**3,030**	**3,239**	**7%**

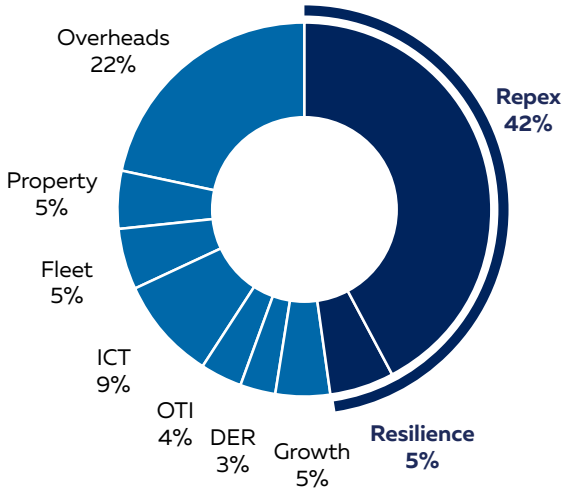
Note: Excludes SaaS costs in 2024-29 which were treated as capex in the 2019-24 period.

Replacement (repex) and climate resilience capex

Our current forecast repex for 2024-29 is $1,370 million. This is our largest capex category, representing 42% of our total forecast capex program in the 2024-29 period.

Our resilience program is $179 million. Of this, $66 million is currently repex in nature (**resilience repex**) and up to $113 million relates to network growth, piloting innovative solutions, and co-funding projects with councils. We plan to refine our resilience program over the coming months when we 'road test' our Resilience Framework with the RCP.

Figure A.5 Forecast repex and climate resilience expenditure as a percentage of total capex



What does repex mean for our customers?

Repex involves replacing assets at the end of their life. This can be triggered by:

- A failure of an asset;
- An assessment of asset condition; or
- Risk analysis that identifies replacement as the least-cost option after considering factors such as reliability, safety and maintenance costs.

For our customers, repex is key to ensuring the safety of our assets embedded within our communities and to maintain our current level of network reliability and performance.

What we have heard so far

Customers are telling us to maintain existing levels of reliability, build climate resilience, and promote affordability at a time of rising cost of living pressures.

This is a difficult balancing act. The more we invest in replacing assets or building resilience, the higher customer bills. At the same time, not enough investment can trigger a decline in the health of our network, putting safety, reliability, and long-term affordability at risk if we need to catch up on a large amount of deferred investment in a short timeframe.

Equity is another factor important to customers. They feel it is unfair for customers in some locations to experience materially worse levels of reliability than others due to climate change. Building resilience for these customers is among the key recommendations of the Voice of Community Panel.

What we are considering

We are considering how we can optimise our replacement requirements without compromising the health of our network and, above all else, the safety of the communities we serve.

Striking the right balance requires sophisticated economic tools that use engineering data about our network. The main tool we use is Cost Benefit Analysis (**CBA**), which we recently refreshed in response to the AER's feedback at our last regulatory reset.

CBA approach

Our refreshed CBA approach is much more sophisticated than the tools we used for our 2019-24 proposal. It enables us to run individual CBA calculations for discrete assets like switchgear, transformers and poles using data on past performance (e.g. failure rates). We can model the underlying risks and customer value (benefit) of millions of assets. To our knowledge, no other network in Australia can do this at the same scale and level of sophistication.

Our 2024-29 repex forecast is 5% lower than our current period spend and 14% below our 2019-24 allowance. We consider this to be a 'proof point' that we are taking our customers' concerns about affordability seriously. It is also a reduction in investment that our refreshed CBA approach allows us to make. This is by giving us the sophisticated tools needed to optimise the balance between the cost of replacement and other considerations such as safety and reliability. We will continue to review our replacement needs based on our network's health and our program delivery ahead of our January 2023 regulatory proposal.

Incorporating resilience expenditure efficiently

A large share of our forecast resilience expenditure involves replacing existing assets.

As **Figure A.6** shows, when the relevant component of resilience is included in repex, our total repex over 2024-29 is reflective of our repex in the 2019-24 period.

We have heard from our customers that they want us to tackle long-term challenges like climate change while still promoting affordability. We have responded to this by keeping our repex costs stable, even after incorporating new resilience initiatives.

We are also looking into how we can promote an equitable distribution of benefits from our resilience program.

This may involve building resilience in more remote communities on our network so that their level of reliability does not materially fall below what our other customers, on average, experience.

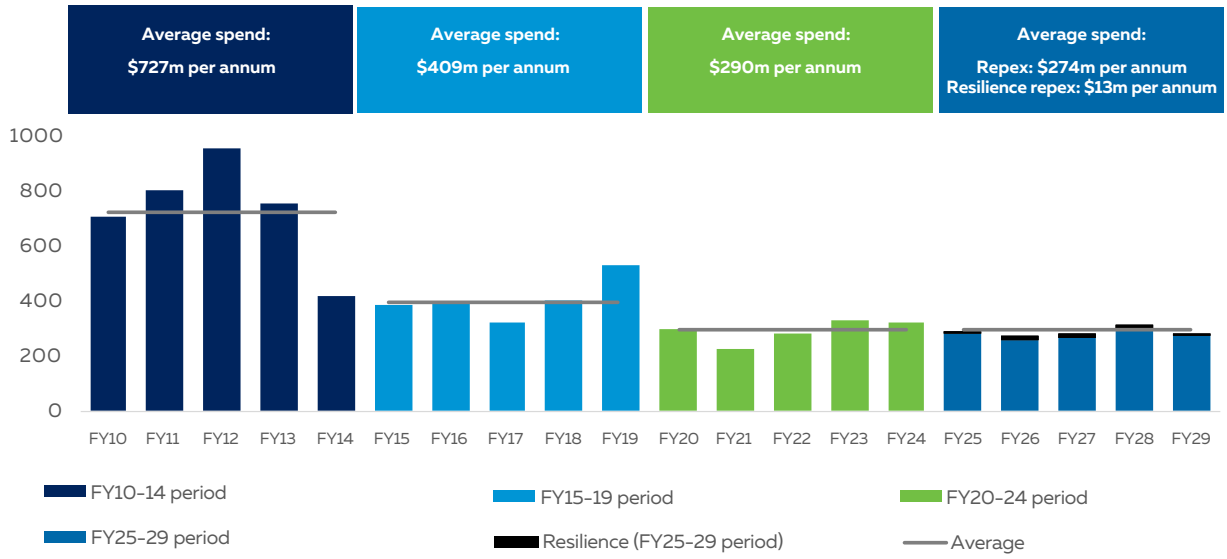
We expect the incorporation of equity into our investment decision making to be a topic of ongoing engagement with our customers.

The initiatives that we settle on will be driven by our co-designed Climate Resilience Framework which we have published for consultation with our Draft Plan.

Climate Resilience Framework

We have co-designed a Climate Resilience Framework with the RCP (see **Section 4.1** of our Draft Plan). Over the coming months we will use the Climate Resilience Framework to settle on resilience initiatives that will inform our 2024-29 regulatory submission due in January 2023.

Figure A.6 Our forecast repex and resilience expenditure for 2024-29 is in line with our actual/estimated expenditure in the current period ($ million, real FY24)



Our forecast repex compares well with the AER's repex model

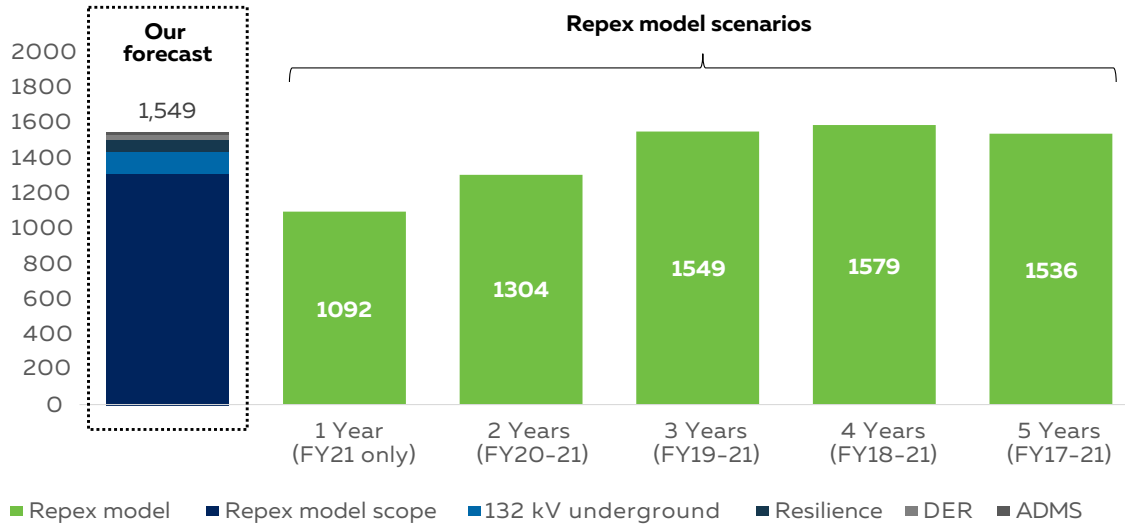
The AER has developed a repex evaluation model (**repex model**) which considers the age, cost and life of assets both at an individual electricity distributor level and an industry benchmark. We use the AER's repex model as a top-down check of the reasonableness of our forecast repex.

The repex model can be run over multiple scenarios that vary depending on how many years of data is taken into account. Under the repex model, lower levels of delivery are trended forward.

This can cause issues when transient factors such as COVID-19, a live work pause or industrial action slow replacement activity, as they did to varying degrees in FY20, FY21 and FY22.

Figure A.7 below compares our forecast repex (including repex-related resilience) against the AER's repex model. It shows that when at least 3 years of data (FY19-21) is considered, our forecast performs in line with what the repex model would expect, even when factoring in our climate resilience program.

Figure A.7 Forecast repex and resilience expenditure for the 2024-29 period compared with the AER's repex model scenarios ($ million, real FY24)



Source: Ausgrid analysis using Regulatory Information Notice data and the AER's repex model

The repex model uses statistical analysis and industry-wide benchmarking to test, at a high level, if our 2024-29 forecast is efficient.

The repex model also passes on all productivity efficiencies to customers by setting our allowance on the lower of our actual unit costs and the NEM benchmark.

Unit rates approach

We forecast 'unit rates' to inform our 10-year investment plan and CBA methodology. These comprise:

- Labour;
- Material components; and
- Contract services.

The labour component feeds into our workforce plan. The workforce plan sets out the different skillsets required to efficiently deliver our network capital and maintenance programs, while managing resourcing constraints that can add to our costs.

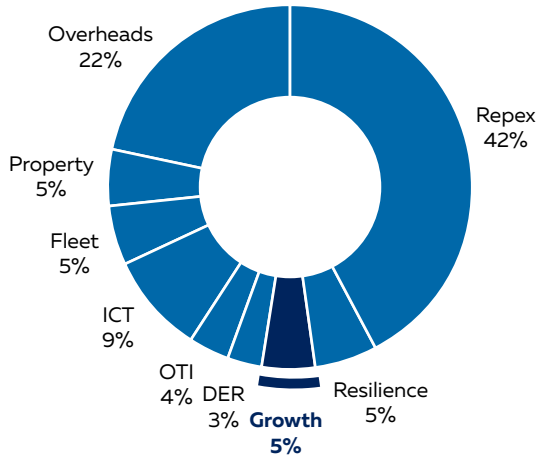
Our unit costs are currently facing upward pressures, including from modern safety controls which are necessary to protect our staff and the broader community, and from increases in the cost of materials (wooden poles, steel etc).

Despite these cost pressures, we have sought to promote affordability by putting forward a 2024-29 repex forecast that is reflective of our expenditure in recent years.

Growth capex

Our current forecast growth for the 2024-29 period is $159 million. This represents 5% of our total capex program.

Figure A.8 Forecast growth as a percentage of total forecast capex



What does growth capex mean for our customers?

Growth capex includes investments in customer connections and network augmentation. These activities enable new customers to connect to our network and the network to meet its predicted load growth. This keeps our power supply safe, reliable and secure.

Some parts of our network are growing quickly. For example, data centres, which are among the largest new energy users connecting to our grid, can trigger the need for investment by causing 'spot' load growth in small, localised areas on our network. Other major customers connecting to our grid include large road and rail infrastructure projects.

What we have heard so far

We know that our customers are interested in EVs and see value in relying on more electric devices to heat their homes, offices and hot water systems. They also want us to promote affordability by making sure any new assets will be efficiently utilised.

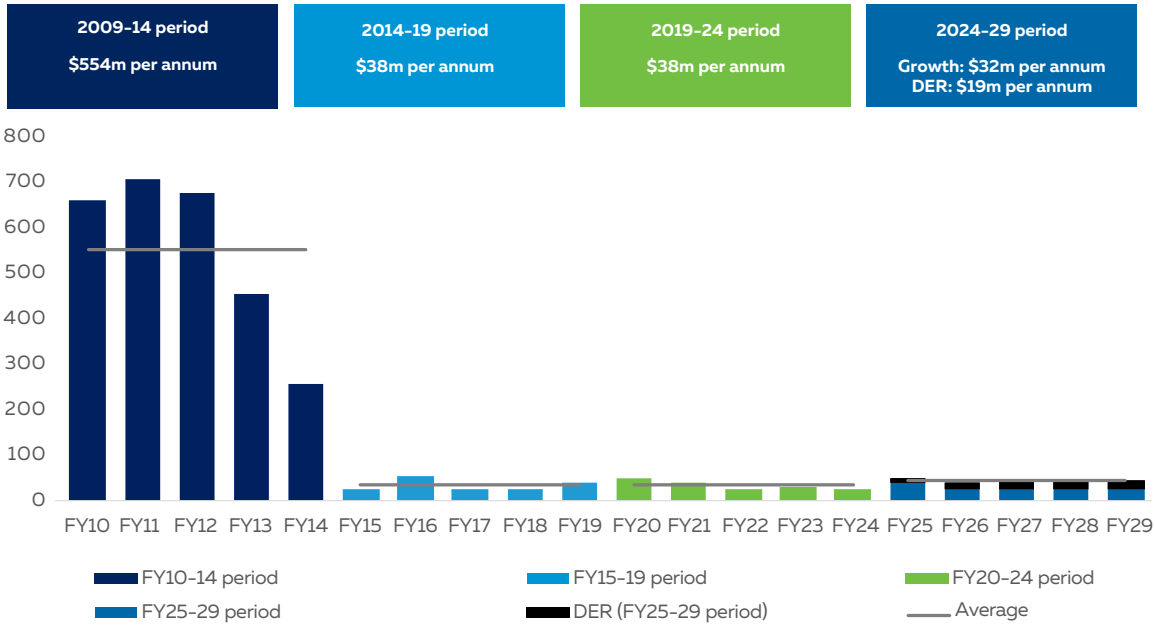
What we are considering

Our demand forecast underpins our investment strategies and ensures that we are investing the right amount in the right locations. Given uncertainty in the pace of change towards greater electrification, our demand forecast considers various scenarios incorporating different emissions pathways, and informs least-regrets investments.

The growth capex forecast put forward in our Draft Plan is 16% below our 2019-24 spend and 35% less than our allowance for that period. This lower level of spend will promote affordability at a time when customers are telling us they are concerned about rising cost of living pressures.

There is a relationship between our growth capex and DER integration capex. This is because our DER capex enablement program (discussed on the **next section**) will deliver more capacity to the grid, complementing our traditional growth capex needs. Due to this relationship, we have set out our growth capex and DER integration investments together in **Figure A.9** below.

Figure A.9 Growth and DER capex ($ million, real FY24)



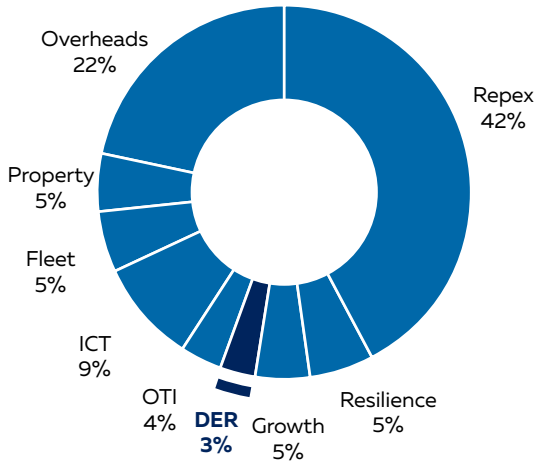
DER integration capex

DER capex is a new expenditure category for our 2024-29 Draft Plan. DER capex supports the forecast uptake of DER, including efficiently connecting an additional 620,000 rooftop solar systems, batteries, EVs or controlled load to our network over the 2024-29 period, and preparing for another 1 million over the 2029-34 period (see **Section 2.2** of the Draft Plan).

Our forecast DER capex reflects the AER's DER Integration Expenditure Guidance Note released in June 2022. This Guidance Note sets out how electricity networks should prepare business cases for DER expenditure for the AER's consideration.

We are considering total expenditure of up to $153 million for DER integration. This comprises $96 million in DER-related network capex (or 3% of total capex) and $34 million in ICT capex on DER enabling technologies, as well as $24 million in smart meter data opex.[2]

Figure A.10 Forecast DER-related network expenditure (only) as a percentage of total forecast capex



What does DER integration capex mean for our customers?

What DER capex means for our customers will depend on which investment approach we adopt. We have been considering 3 alternative approaches: preparatory, proactive or accelerated timeline.

Preparatory investments include:

- Improved network visibility
- Digital tools that improve customers' experience connecting DER and the range of network information available to us

Proactive investments include:

- Preparatory investments noted above
- Innovative connection and pricing options that encourage customers to use their energy assets in ways that put less pressure on the grid
- A mix of traditional augmentation and flexible network solutions, including community batteries

Accelerated timeline investments include:

- Proactive investments noted above, but accelerated network augmentation and rollout of network management devices that, as far as possible, would minimise the need to restrict exports

What have we heard so far

Customers are telling us that:

- They consider an accelerated timeline approach may result in customers facing unnecessary costs; and
- Preparatory investments may be insufficient to address the increase in DER expected on the network and ultimately be less efficient.

What we are considering

Based on what we have heard so far, our Draft Plan is based on the proactive investment scenario.

This approach includes investments that enable innovative pricing options, education and collaboration, network visibility, better voltage management and tailored connection arrangements.

It would enable us to efficiently accommodate our customers' desire for more DER. We would be able to build our capability to integrate DER without over-investing in the network.

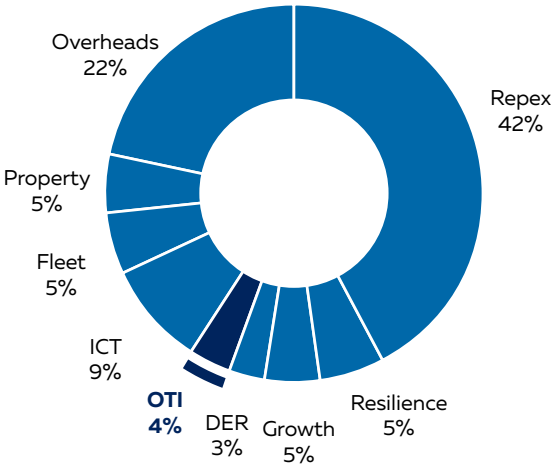
We intend to further test whether we are hearing our customers accurately, and value your feedback on our DER investment approach.

2 Does not sum to $153 million due to rounding.

Operational technology and innovation capex

Our forecast operational technology and innovation (**OTI**) capex of $114 million in the 2024-29 period is 39% lower than the $188 million we expect to spend in the current period.

Figure A.11 Forecast OTI as a percentage of total forecast capex



What does OTI capex mean to our customers?

OTI capex includes investments related to operational technology and an innovation program that covers a range of network technology related research, trials and pilots. Operational technology enables us to directly monitor and control physical devices and processes on our network and to automate manual processes.

Additionally, these operational technology devices and systems can help stabilise our cost base and improve the service we offer customers. This is by introducing smarter, more cost-effective ways of delivering services to customers.

What we have heard so far

Customers value innovation. The Voice of Community Panel recommended increasing our 2024-29 innovation spend to up to $80 million in capex and $10 million in opex if it did not have a significant bill impact.[3]

What we are considering

We are considering a total innovation investment over the 2024-29 period of $50 million—comprising $45 million in capex and $5 million in additional opex. This is less than the Voice of Community Panel showed support for, but reflective of our 2019-24 allowance in real terms. We consider this to be a 'proof point' that we are taking on board broader customer feedback about the importance of affordability at a time of rising cost of living pressures.

We are also putting in place the arrangements to continue with our Network Innovation Program. As **Figure A.12** shows, this program is currently structured in 3 workstreams, focusing on DER support and enablement, community resilience, and safe and intelligent networks.

Figure A.12 Our Network Innovation Program involves 3 workstreams

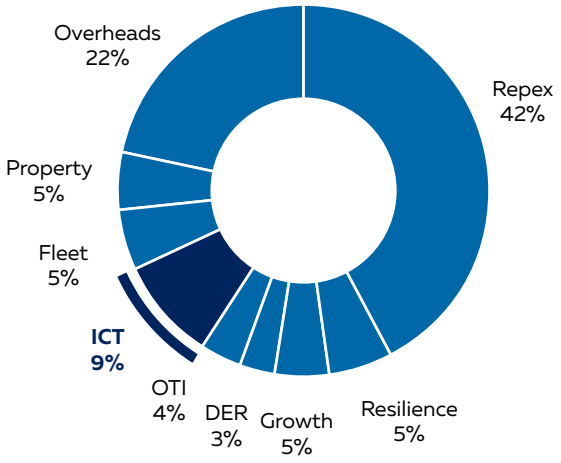
DER support and enablement	• New, untested technology that helps integrate and support more DER to connect to the Ausgrid network – enabling customers to extract more value from their DER assets.
Community resilience	• New, untested technology that helps to increase the resilience of our network and our communities to severe weather events and other incidents such as bushfires.
Safe, intelligent networks	• New field assets that deliver safe, reliable and sustainable energy for our customers; and • Technology and capability that helps us to better plan, maintain and operate the network. This improves our capability to use the increasing quantum of data available to us through customer and network devices.

3 Voice of Community, Ausgrid Panel Report, June 2022, Recommendation 6.

ICT capex

Our forecast ICT capex for the 2024-29 period is $292 million. This represents 9% of our total forecast capex (see **Figure A.13**).

Figure A.13 Forecast ICT capex as a percentage of total forecast capex



What does ICT capex mean to our customers?

In our rapidly changing energy landscape, ICT is becoming the backbone for introducing new services and innovations. Digital tools can help customers interact with us when they have a query or need information about an outage, and can unlock productivity efficiencies.

What we have heard so far

Our customers recognise the benefits that ICT investments can deliver. Our conversations are focusing on balancing affordability with investing in the digital tools we need in a transforming energy market, and having the right level of cyber protections.

What we are considering

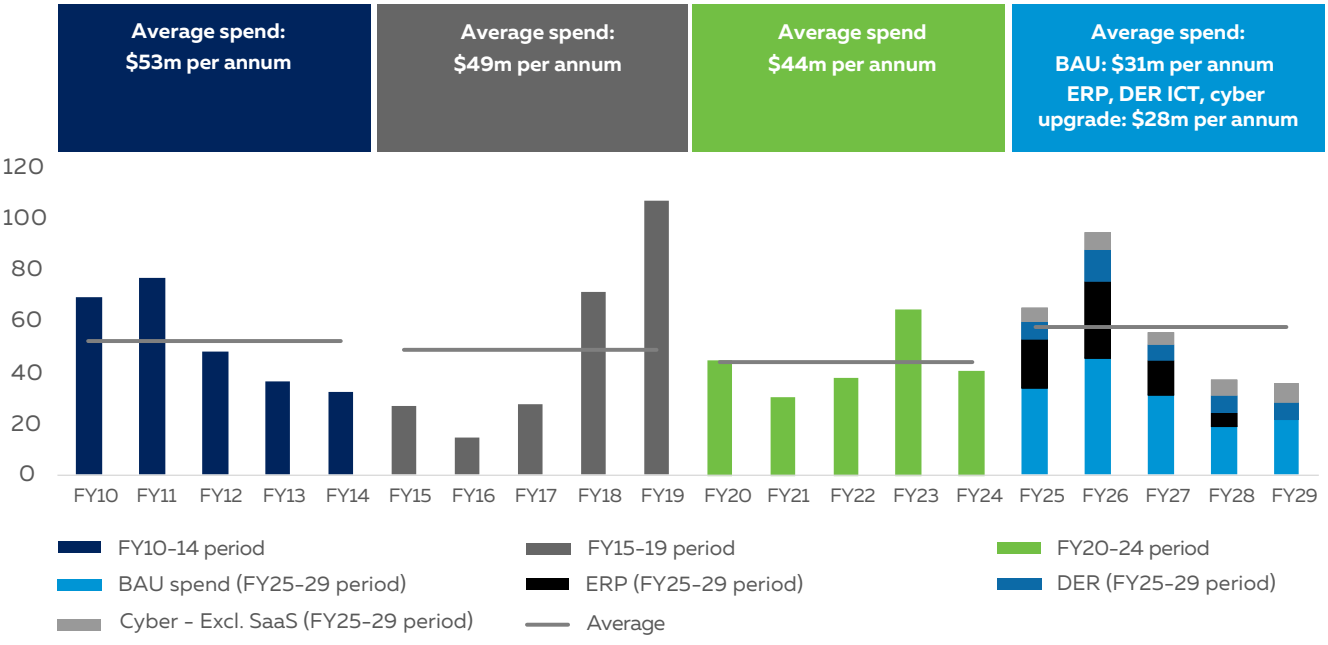
Approximately 53% of our forecast ICT capex is made up of business-as-usual (**BAU**) investments. The remainder is made up of 3 large programs: transforming our enterprise replacement planning (**ERP**) system, investing in DER-related ICT, and upgrading our cyber security.

Our existing ERP was initially deployed in 1996 and parts of it will have been in operation for 31 years by the time of its planned replacement date in 2027.

Many of our digital ambitions for customers, from cost-reflective pricing, to handling customer complaints in a timely manner, depend on not only replacing the ERP but also transforming it (see case study on the **next page** for more information).

Excluding the 3 largest programs, our forecast ICT capex averages $31 million per annum. This compares well to the capex spent in previous years (see **Figure A.14**), in part driven by our migration to cloud-based servers.

Figure A.14 Our forecast ICT capex for 2024-29 is higher than we expect to spend in the current period due to 3 large programs ($ million, real FY24)



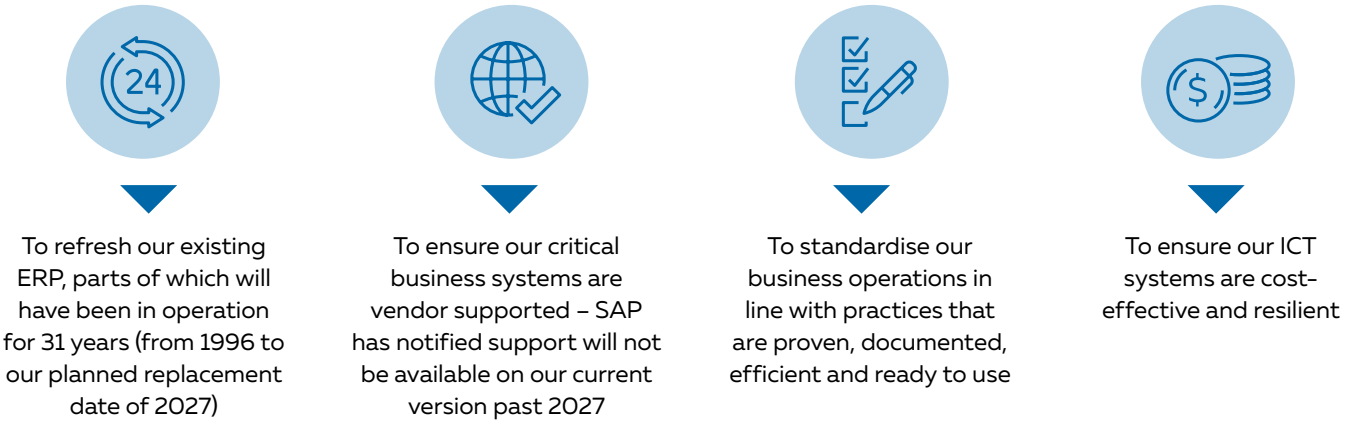
Case study: Transforming our ERP will unlock a range of benefits

Our ERP is used by most of our 2,750 staff. It provides the digital platform for making maintenance and investment decisions, answering our customers' inquiries, and operating billing systems.

Transforming our ERP will unlock a range of benefits. This is shown from the perspective of an Ausgrid customer (**Figure A.15**) and our business (**Figure A.16**).

Figure A.15 How transforming our ERP would benefit our customers

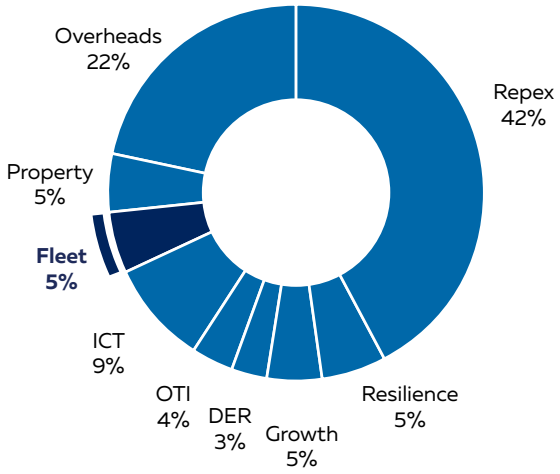
Figure A.16 Why transforming our ERP is important to our business



Fleet and plant capex

Our forecast fleet and plant capex of $167 million in the 2024-29 period is 41% higher than the $119 million we expect to spend in the current period. It represents 5% of total capex.

Figure A.17 Forecast fleet and plant capex as a percentage of forecast capex



What does fleet and plant capex mean to our customers?

Our fleet of vehicles and trucks support our operations in the field by providing a safe and reliable mode of transportation. 'Plant' assets refer to the equipment we use in the field—such as elevated work platforms (**EWPs**), vehicle loading cranes, and pole installation equipment.

What we have heard so far

Customers are telling us that affordability is critically important to them. Because of this, customers value investments in tools that drive efficiencies without compromising safety.

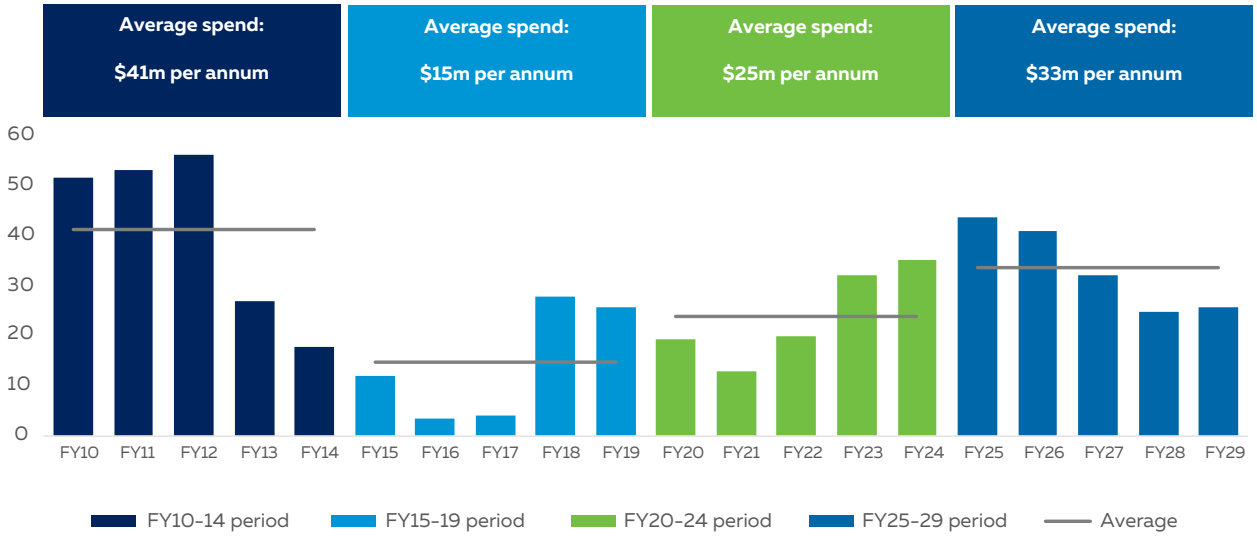
What we are considering

We are considering ways in which we can reduce our total fleet and plant costs. This includes options for reducing maintenance costs and improving fleet reliability.

For light commercial vehicles, our analysis is revealing that maintenance and repairs costs increase after a certain vehicle age. The step change for repair costs is particularly significant. At 6 years, they rise by 52% for utility vehicles and by 193% for vans. We are considering shortening our replacement lifecycle for these assets from 7 to 6 years to achieve cost savings and meet updated safety recommendations from the Australasian New Car Assessment Program.

We are also looking into replacing up to 179 EWPs in the 2024-29 period. EWPs are trucks with a platform attached at the rear which allows our field crews to reach overhead assets. This replacement program would unlock productivity gains for our network capex program and reduce the 20% increase in EWP breakdowns we have been recently experiencing.

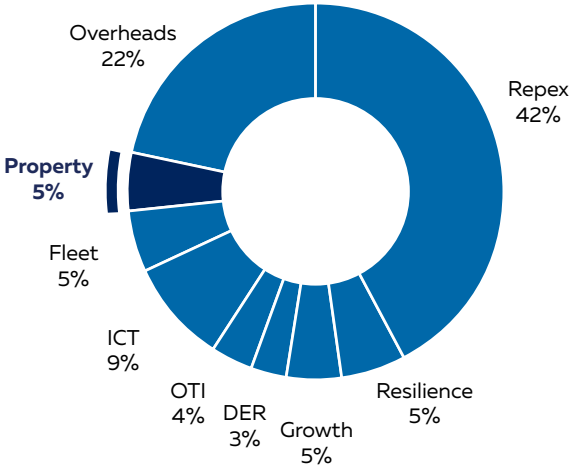
Figure A.18 Our forecast fleet and plant capex in 2024-29 is higher than we expect to spend in the current period, driven by age ($ million, real FY24)



Non-network property capex

Our forecast non-network property capex in the 2024-29 period is $163 million. This is 2% lower than the $167 million we expect to spend in the current period 2019-24.
It represents 5% of our total forecast capex (**Figure A.19**).

Figure A.19 Forecast non-network property capex as a percentage of total forecast capex



What we have heard so far

We are hearing that we must be smart about the investments that we make at a time when cost of living pressures are rising. This is particularly the case for high capital cost decisions, like the location of offices and new depots, which cannot be unwound easily.

What we are considering

We are completing a target operating model to guide our non-network property requirements into the future.

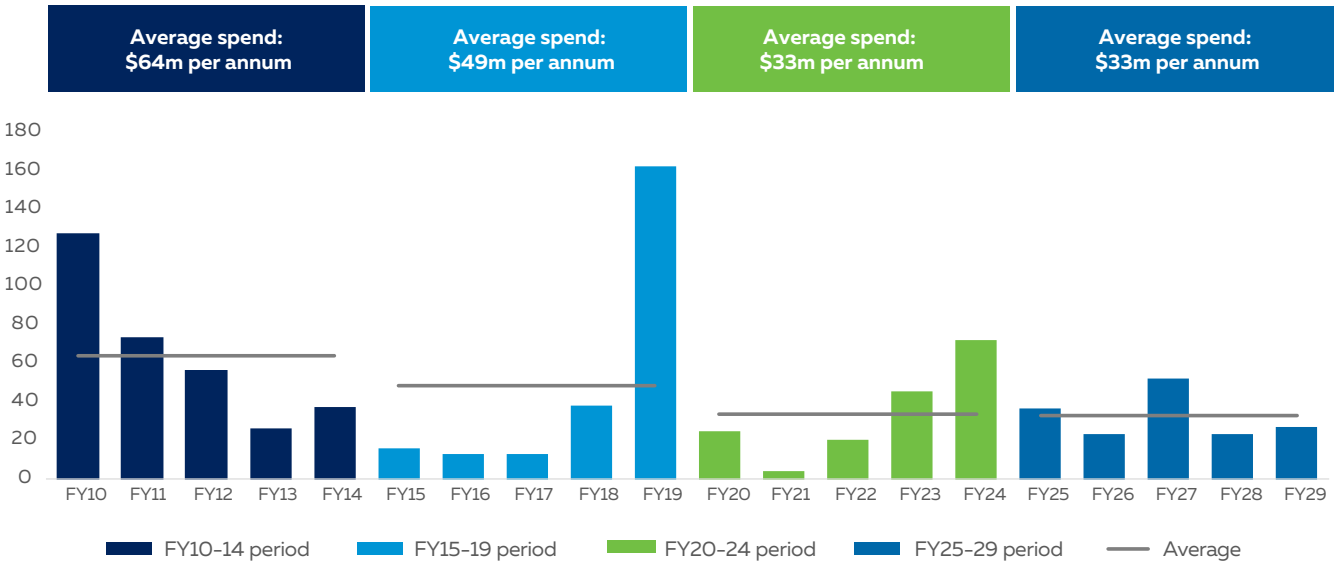
The analysis feeding into our target operating model takes a long-term view of our property needs. This will promote affordability beyond the 2024-29 period by making the right investments in the best locations to service our customers most efficiently.

Our current non-network property forecast is set out in **Figure A.20**. It shows that our forecast investment in non-network property for 2024-29 period is in line with our 2019-24 period spend and less than our non-network property capex for both 2009-14 and 2014-19.

What does non-network property capex mean to our customers?

Our non-network property assets include offices, depots and specialist sites located throughout Ausgrid's distribution area. Capex is required to mitigate the risk of safety hazards causing harm to our workforce and the general community.

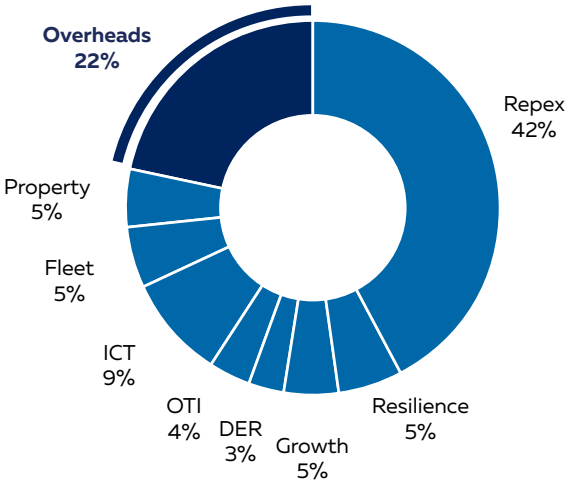
Figure A.20 Our forecast non-network property capex in 2024-29 is higher than we expect to spend in the current period ($ million, real FY24)



Capitalised overheads and delivery

Capitalised overheads make up approximately 22% of our total forecast capex (see **Figure A.21**). They include the indirect costs we incur in the delivery of both our network and non-network capex programs. Examples include network planning and management activities.

Figure A.21 Forecast capitalised overheads as a percentage of total forecast capex



The AER's standard method to calculate capitalised overheads for regulatory determination purposes involves using the historic proportion of capitalised overheads to direct capex and trending this forward. This methodology is based on the AER's view that capitalised overheads are 75% fixed and 25% variable.

We intend to apply the AER's standard approach. Using this approach, we have calculated a capitalised overhead forecast of $700 million in the 2024-29 period.

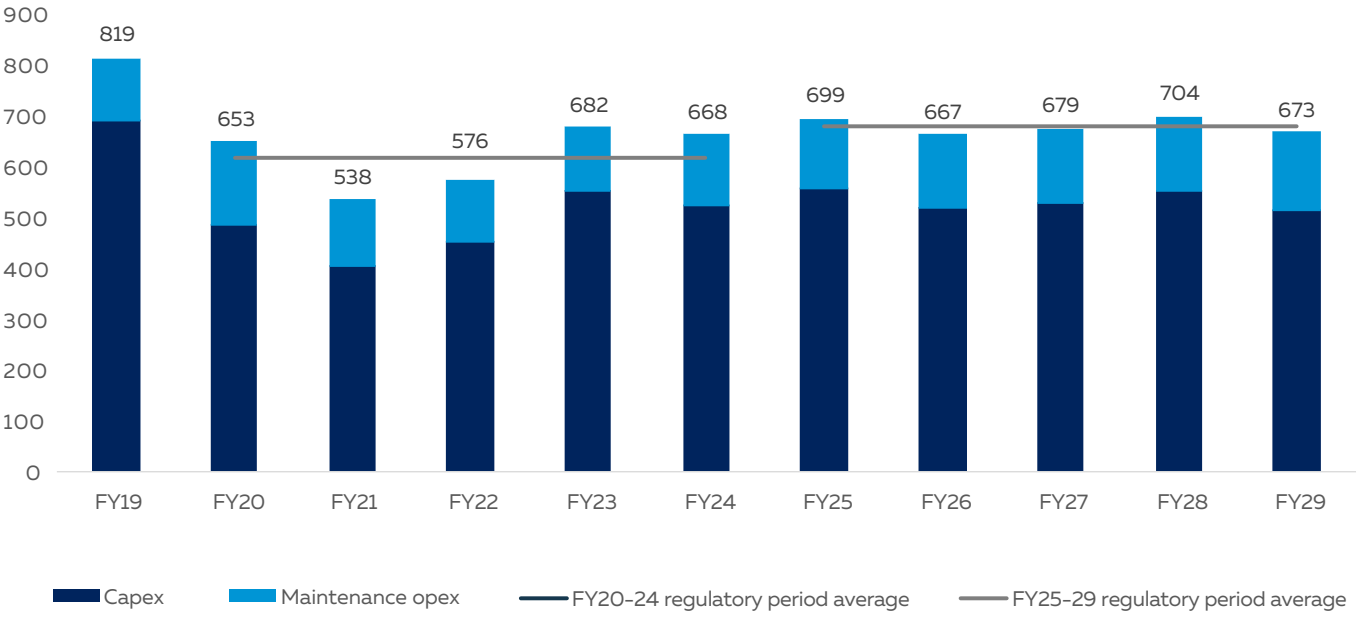
Delivery of our capex program

We employ governance tools to support the efficient delivery of our capex program and ensure that we have the capability and capacity to deliver our investment needs.

Our initial workforce analysis indicates that we do not have enough internal resources to deliver our forecast work plan for the 2024-29 period. The early identification of resourcing gaps allows us to develop appropriate strategies to address them.

Figure A.22 sets out our combined network maintenance and capex program. This provides a fuller picture of our delivery expectations compared against recent years. It shows that our forecast is in line with recent levels, reinforcing that our 2024-29 period planned program is deliverable based on existing capabilities.

Figure A.22 Combined capex and maintenance opex program



Capital productivity

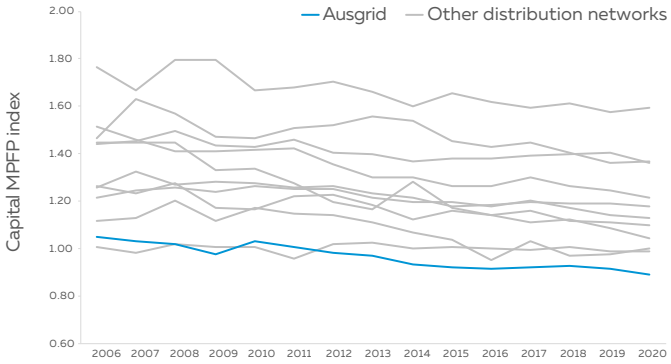
Capital multilateral partial factor productivity (MPFP)

We do not perform well against the AER's published measure of capital MPFP[4] (see **Figure A.23**). We note that there has been an overall decline in capital productivity (on this measure) across the sector over the past 15 years, which is likely because legacy capex decisions remain in the measure for an extended period.

We have been discussing capital MPFP with the RCP. We have come to the shared view that this measure is less relevant for assessing Ausgrid's relative capex efficiency. This is because the measure is driven by historical capex required to meet previously mandated reliability standards. As a result, we cannot move up the rankings simply by spending less capex.

Demonstrating and monitoring our capex productivity remains important. We are discussing alternative measures with the RCP, such as a productivity factor for capitalised overheads, asset utilisation and expenditure and unit rate trends.

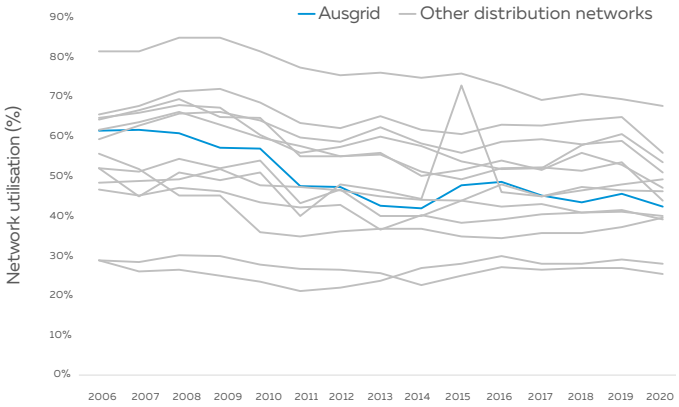
Figure A.23 Capital MPFP Index



Network utilisation

A secondary measure of capex efficiency is network utilisation. Due to historical capex levels, our network utilisation is relatively low and has been consistently declining, as shown in **Figure A.24**. Average utilisation across the sector has also declined since 2006 as more customers use energy-efficient appliances and electricity generated by their own rooftop solar systems.

Figure A.24 Network utilisation



If we can manage capex and customer demand such that utilisation improves, we will not need to spend as much to expand the network. This will keep costs down.

Therefore, we commit to taking steps that target network utilisation over the long term, noting that this metric can be materially affected by factors outside our control – for example, the quantity and location of rooftop solar and batteries connecting to our network.

Consultation question 12:

What is the best way of measuring improvements in the productivity of our capital investments?

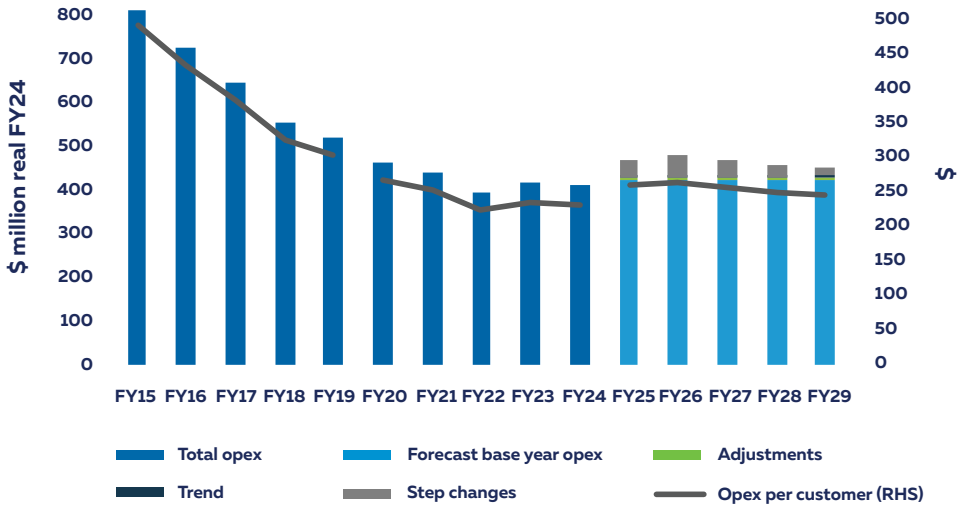
4 MPFP is one of the AER's productivity measures, it measures the ratio of outputs to inputs. The higher the ratio, the fewer inputs have been used to produce a given level of outputs, and the more efficient the outcome.

B 2024-29 operating expenditure

Our draft operating expenditure (**opex**) of $2,254 million, excluding debt raising costs,[5] is 14% lower than our current period allowance and 9% higher than our current period forecast spend.

The annual opex breakdown, excluding debt raising costs is shown in **Figure B.1**. Total opex including debt raising costs is $2,297 million.

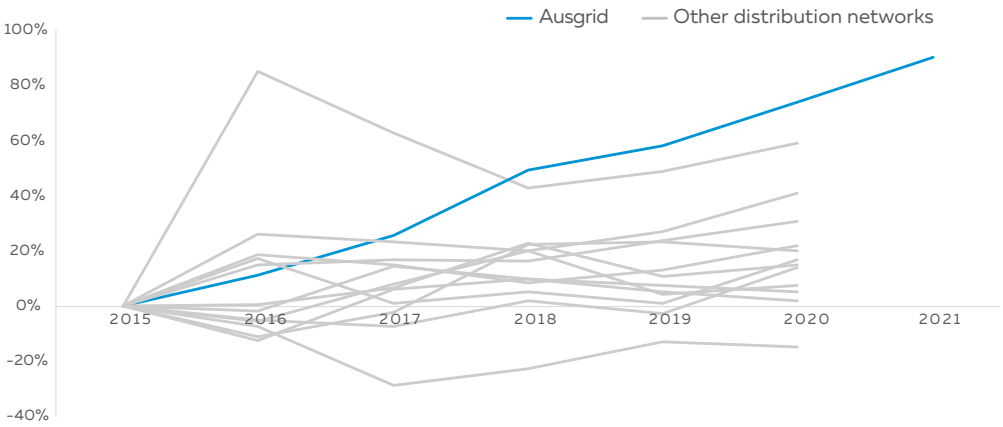
Figure B.1 Forecast opex ($ million, real FY24)



Because of our efforts to reduce opex, we have improved our opex efficiency as measured by MPFP by more than any other electricity network in the NEM (**Figure B.2**).

We expect this to improve even further based on recent performance. We acknowledge the improvement is off a low base – we were ranked 11 out of 13 businesses in the AER's 2021 benchmarking report.

Figure B.2 Percentage change in opex MPFP compared to other network businesses[6]



5 Debt raising costs are added to total opex to cover, for example, arrangement fees, credit rating fees and issuer legal counsel fees associated with the raising of debt.

6 Only Ausgrid shown for FY21 as the benchmarking performance of other networks has not yet been published.

We have estimated opex for our Draft Plan using the base-step-trend method. This is the AER's preferred method for forecasting opex.

Base opex

In recognition that opex is largely recurrent in nature, opex forecasting starts with actual opex incurred in the 'base year'. We have selected FY23 to be our opex base year because it will be the latest actual expenditure available for the AER's final decision. While we do not know what our actual opex will be in FY23, we have set a budget and expect to achieve that budget.

FY23 opex is forecast to be higher than FY22[7] for 4 main reasons:

- FY22 includes a one-off provision reduction ($8 million);
- High inflation ($10 million);
- Higher IT subscriptions and licences ($8 million); and
- Higher maintenance costs ($6 million).

These and other higher costs are expected to more than offset our expected productivity gains of $12 million in FY23.

The efficiency of our base year opex relative to that of other networks is assessed by the AER using complex econometric techniques.

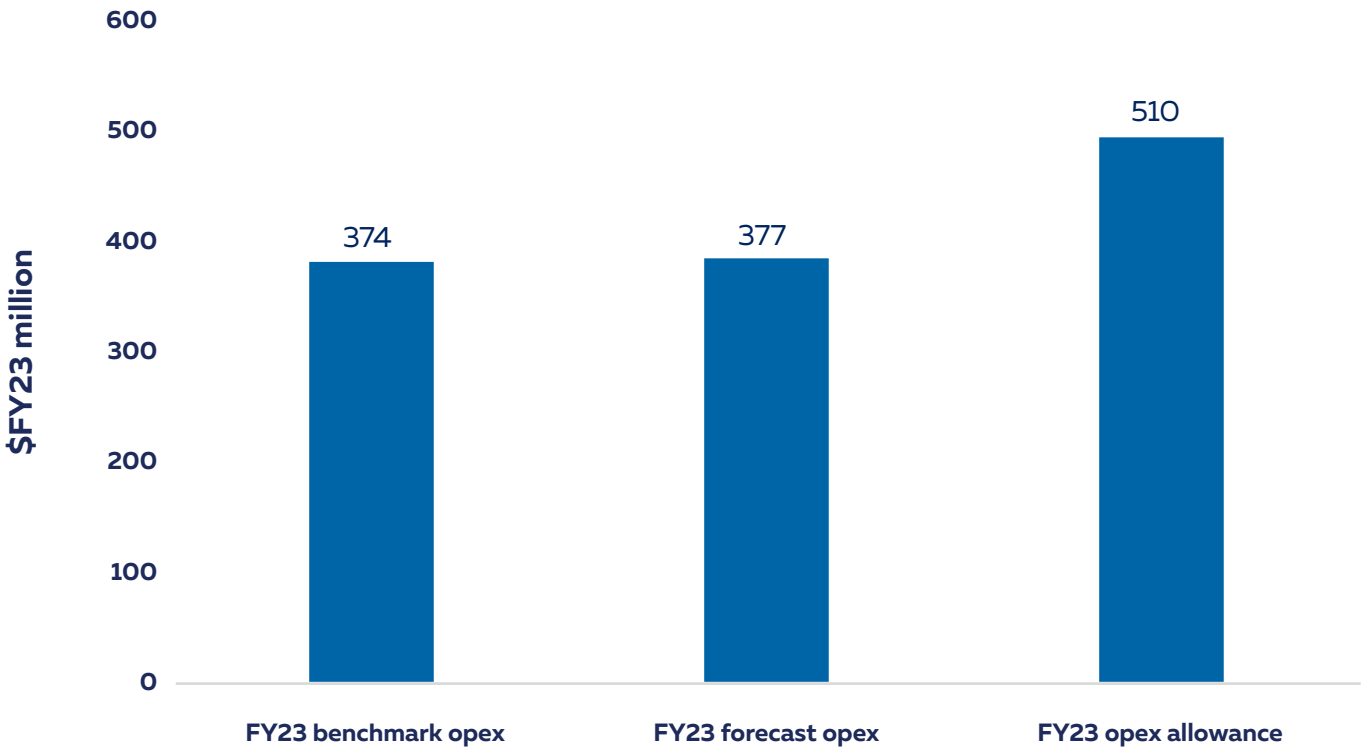
Figure B.3 shows our estimate of efficient opex (based on currently available information) alongside our forecast FY23 opex, excluding SaaS (see the **next section** on 'step changes').

We note that:

- **Econometric models will be updated**: the AER will update its models with FY21 data later in 2022 which will impact these forecasts; and
- **Operating environment factors (OEF) are uncertain**: the AER adjusts data to reflect the differing operating environments across networks (e.g. urban vs rural), and we are still engaging with the AER on these adjustments.

Our current base year opex estimate is within 1% of the AER's benchmark opex level, so we expect it to be deemed efficient.[9]

Figure B.3 Base year efficiency ($ million, real FY23)[8]



7 FY22 forecast as at May 2022.

8 FY23 forecast excludes SaaS.

9 In September we will lodge a revised cost allocation method for AER approval. If approved, our FY23 opex forecast could increase to $383m, still within 3% of the benchmark.

Step changes

The base-step-trend methodology provides for positive and negative step changes to opex for costs that have changed which are outside of our control, or for changes between capex and opex.

Figure B.4 summarises the proposed step changes in our Draft Plan. We have not included all expected cost increases. For example, we propose to absorb higher costs associated with employment of more apprentices and graduates.

Figure B.4 Summary of step change expenditure

Category	$ million, real FY24
Insurance	27.8
Cyber security	18.3
SaaS	68.7
Community resilience	25.0
Smart meter data	23.5
Network innovation	5.0
Total	168.3

Insurance

Our insurance costs are increasing. Key drivers of these increases are climate change, which is causing more damage to networks, and the significantly higher risk of cyber security breaches. Our insurance premiums have increased by 88% over the last 2 years and are forecast to increase another 59% between now and FY29, even with concerted efforts to manage these costs. For this reason, we have included a step change to our insurance costs so we can continue to appropriately manage risk at the lowest sustainable cost. These costs are included in the 'Uncontrollable factors' block in **Figure 1** at the start of these Appendices to our Draft Plan.

Cyber security

As discussed in **Section 4.1.3** of the Draft Plan, we are considering investing in a cyber program that would enable us to adopt practices and protections in line with industry best practice (Security Profile 3 of the Australian Energy Sector Cyber Security Framework). Our Voice of Community Panel did not reach consensus on this point, with some members recommending a more moderate level of protection (Security Profile 2). These costs are included in the 'Cyber' block in **Figure 1**.

SaaS

In April 2021, the International Financial Reporting Interpretations Committee (**IFRIC**) issued a decision on the accounting treatment of implementing SaaS IT solutions.

The IFRIC concluded that the costs associated with configuring and customising SaaS IT solutions cannot be capitalised as an asset if an entity does not control the software. This is a change from our previous accounting treatment where such costs have been capitalised and means that these costs now need to be recognised as opex.

As these costs are non-recurrent or 'one-off', we have forecast the cost of implementing SaaS IT solutions and included them as step changes to base year opex. There is a corresponding reduction to capex. These costs are included in the 'Uncontrollable factors' block in **Figure 1**.

We note that AER staff advised on 8 August 2022 that SaaS expenditure in the current period should be treated as capex for regulatory purposes. This aligns our SaaS expenditure to the allowance for the 2019-24 period. Due to the timing of this notification we were unable to reflect this change in our Draft Plan, however it will be updated for our regulatory proposal in January 2023.

Community resilience

As described in **Section 4.1** of our Draft Plan, we are proposing to employ a range of resilience solutions.

Some of these solutions will involve investing in new assets while others will involve employing new staff with a specialist skillset. These new staff would run outreach programs, provide information about climate resilience and support the communities we serve after an extreme weather event.

Any proposed expenditure will be assessed against our Climate Resilience Framework[10] to ensure it can provide value for money. This expenditure would be an investment to reduce resilience capex that might otherwise be required to manage the impacts of climate change. These costs are included in the 'Resilience' block in **Figure 1**.

10 Our Resilience Framework is also available for consultation [insert hyperlink]

Smart meter data

Smart meter data and real-time smart meter functionality can be used to test safety outcomes on the network, better utilise assets and reduce curtailment of DER customer exports. These costs are included in the 'DER' block in **Figure 1**.

Investing in this data will lead to:

- More efficient growth capex through more granular and timely information, resulting in faster and more accurate decision-making;
- Enhanced safety benefits through neutral integrity monitoring and life support validation; and
- Lower opex through a reduction in customer callouts.

Network innovation

As described in **Appendix A** to our Draft Plan, the Network Innovation Program comprises a range of trials and pilots covering leading edge energy technologies to support the rapidly evolving electricity sector. The program is overseen by the NIAC.

In the 2024-29 period we are considering adding an opex allowance to the program, which will enable us to:

- Select the most efficient options for customers, particularly in the technology domain, with licence costs from the increasing trend towards SaaS and Product as a Service (**PaaS**) offerings; and
- Engage in ongoing research, focusing on community attitudes, expectations and preferences related to issues relevant to the Network Innovation Program, including solution options and equipment standards.

The expenditure is expected to create long-term capex savings through the application of innovative solutions. These costs are included in the 'Innovation' block in **Figure 1**.

Trend

Trend refers to gradual cost changes to reflect the changing nature of the network, due to factors such as increased numbers of customers and assets. For example, an increase in the length of wires and cables operating throughout the network will cost more to maintain. There are 3 main components to trend:

- Productivity factor;
- Output growth; and
- Price growth.

Productivity factor

As discussed in **Section 4.4.1** of our Draft Plan, the productivity factor reduces forecast opex on the basis that businesses will continuously find cost savings. This factor embeds a minimum level of cost reductions that are fully passed through to customers.

Our Draft Plan includes an opex productivity factor of 0.5% per annum, however productivity remains an open discussion with our customers and the RCP.

Output growth

Output growth allows for the increased costs of servicing a growing network. The standard methodology for applying output growth is informed by benchmarking, where opex is adjusted based on growth in:

- Customer numbers;
- Circuit length; and
- Ratcheted maximum demand.

Econometric modelling provides the weighting for these factors. We forecast the change in each factor over the 2024-29 period which drives the output growth. Based on forecasts in our Draft Plan, this contributes around $26 million to revenue over the 2024-29 period.

Price growth

More than half of our opex cost is labour. We have included a placeholder for wage growth in our Draft Plan which adds around $19 million in opex over the 2024-29 period.[11]

11 Source: Deloitte Access Economics national wage price inflation March 2022.

C Regulated Asset Base (RAB) and revenue

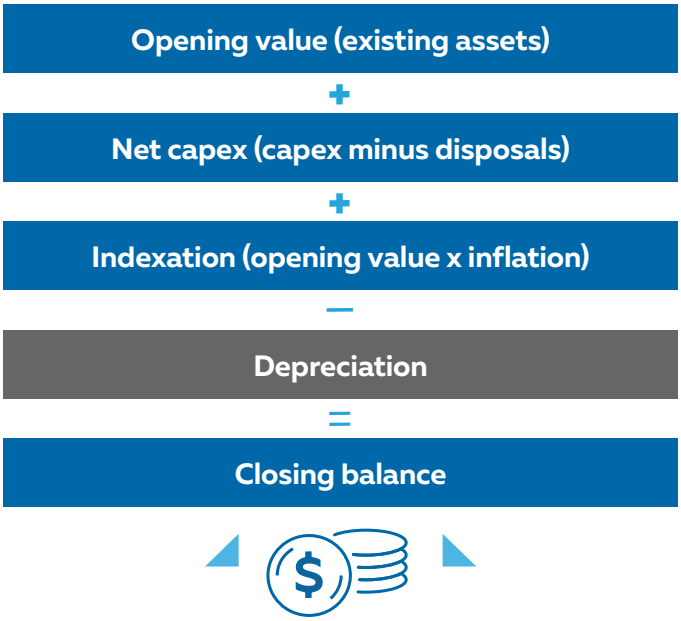
RAB

The RAB is the unrecovered value of capex invested in network and non-network assets. It is the basis on which our interest cost and shareholder return allowance (together, 'return on asset') is calculated, and is one of the biggest drivers of our overall costs. **Figure C.1** shows how the RAB is calculated.

As noted in **Section 4.4.1** of our Draft Plan, we expect real asset value per customer to decline over the 2024-29 period.

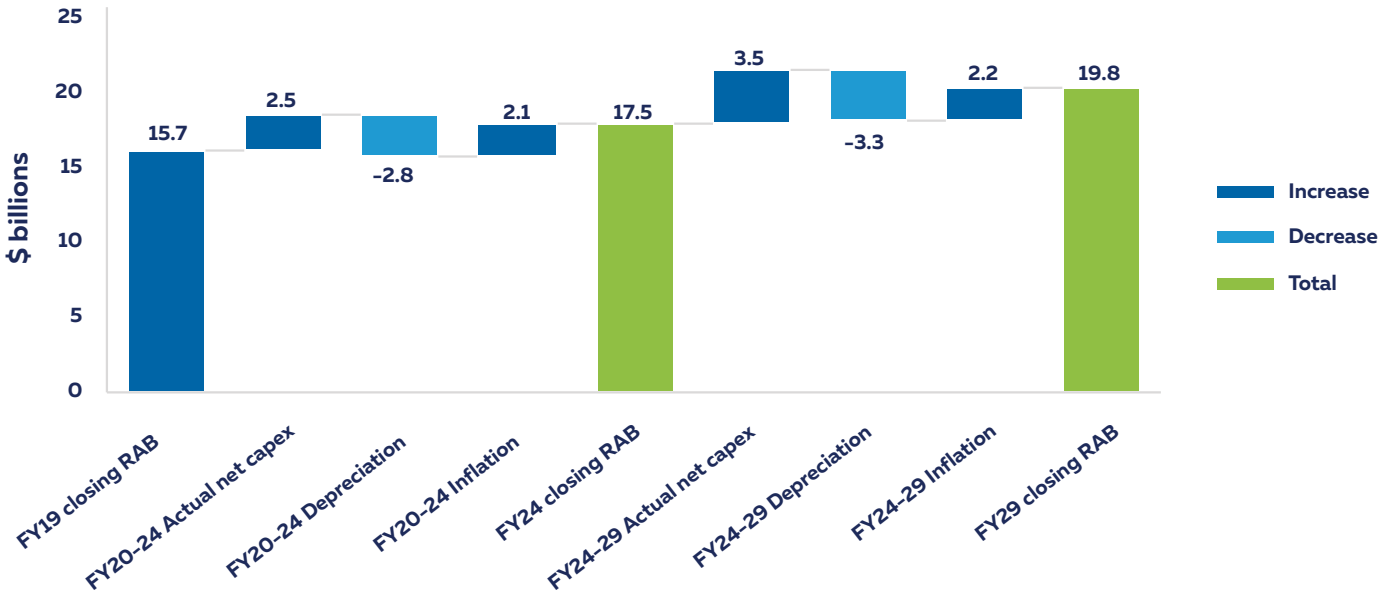
Based on forecasts for FY23 and FY24, we estimate our opening RAB on 1 July 2024 to be $17.5 billion.

Figure C.1 How the RAB is calculated



Our forecast RAB movements for the current 2019-24 period and the 2024-29 period are shown in **Figure C.2**. RAB is forecast to increase by 14% over 2024-29.

Figure C.2 Forecast RAB (nominal)



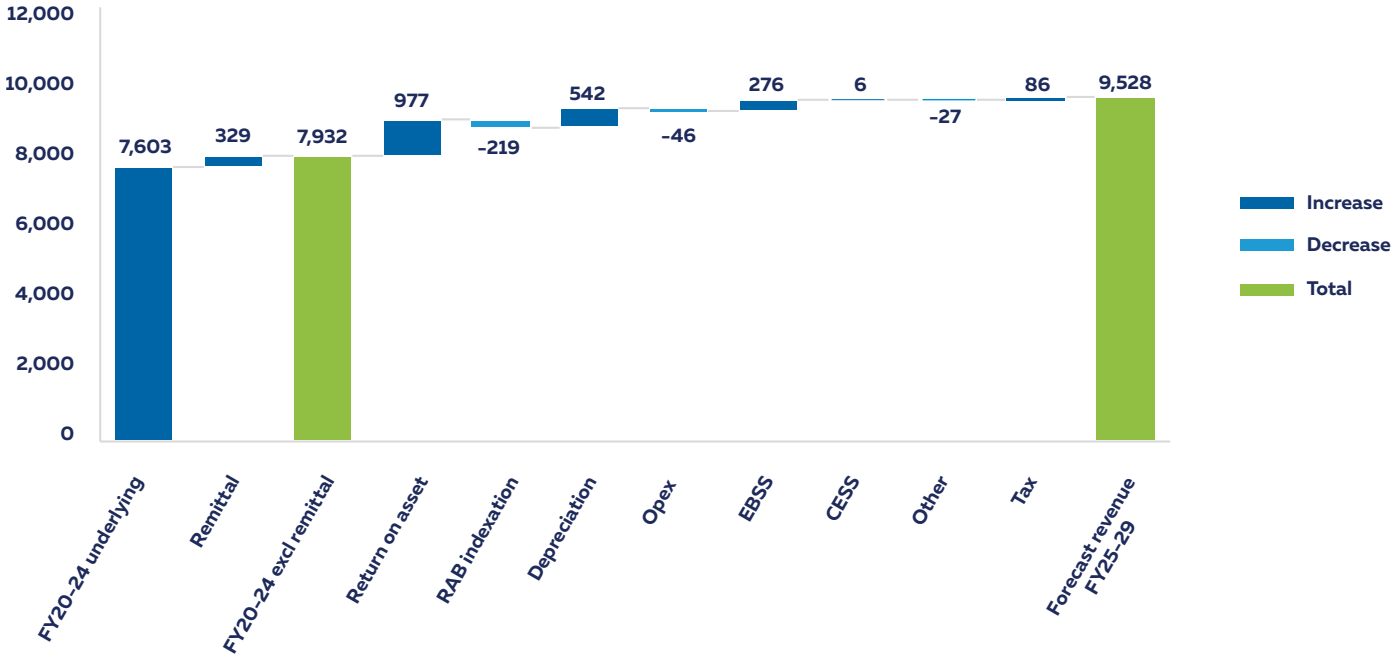
Building block revenue

We are focused on delivering value for money for our customers. However, as noted in previous sections, external factors are having a significant impact on our forecast costs, and therefore the revenue we need to recover to support our ongoing financial sustainability.

Figure C.3 compares each building block component of revenue with the current period.

The first bar on the chart shows total building block revenue for the current period (noting that FY24 is a forecast and will be updated with actual cost of debt in 2023).[12] The final bar shows that the total forecast building block revenue for the 2024-29 period is $9.5 billion. Each component of the forecast revinue is discussed in the following sections.

Figure C.3 Building block revenue change FY20-24 to FY25-29 ($ million, nominal)



12 Revenue was over-recovered in the 2014-19 period by $329 million due to legal action, which meant the final determination was not settled until 2018. This artificially lowered revenue in the 2019-24 period to a starting point of $7,603 million.

Return on asset

More than half of our revenue comes from return on asset. This is the total value of our investments – the RAB – multiplied by a rate of return, or weighted average cost of capital (**WACC**). The WACC covers our interest costs for borrowings that help fund investments, plus a fair return to shareholders.

Figure C.4 shows how the WACC is calculated.

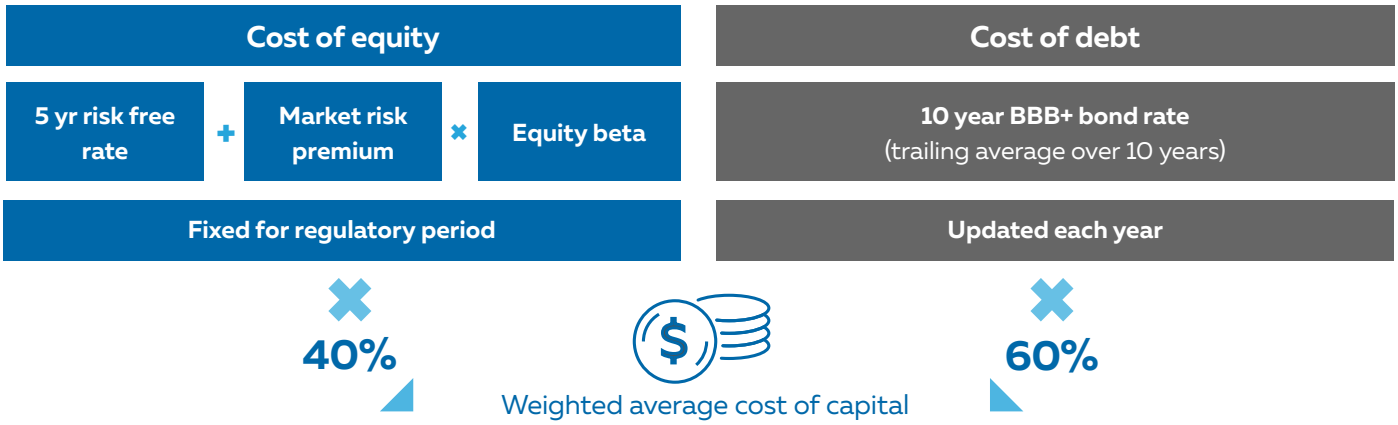
The AER runs a separate process to determine the WACC calculation for all networks. The AER's next decision is due in December 2022 and will apply to us over our 2024-29 period. The AER released a draft of this decision on 16 June 2022 which we support many aspects of.

We note we have a differing view to the AER on the calculation of the risk free rate.

However, current interest rate market data means that there is little difference in the values derived using our preferred approach and the AER's approach. Therefore, for simplicity, our Draft Plan reflects the AER's draft decision on the risk free rate.

The rate of return consists of the cost of debt and the cost of equity. The 2 are combined using a gearing ratio of 60% to create the WACC. In developing our Draft Plan, we assumed an average WACC of 5.8% over the 2024-29 period, compared to an average of 5.3% for the 2019-24 period. The return on asset building block for our Draft Plan is $5,373 million, or 56% of total building block revenue. It is higher than the 2019-24 period mainly due to the higher risk free rate in the WACC and higher RAB balance.

Figure C.4 WACC calculation (based on draft 2022 RORI)



Depreciation

Depreciation allows the cost of investments to be recovered over their useful life so that customers do not need to pay for expensive assets up front. Depreciation is also known as return of asset.

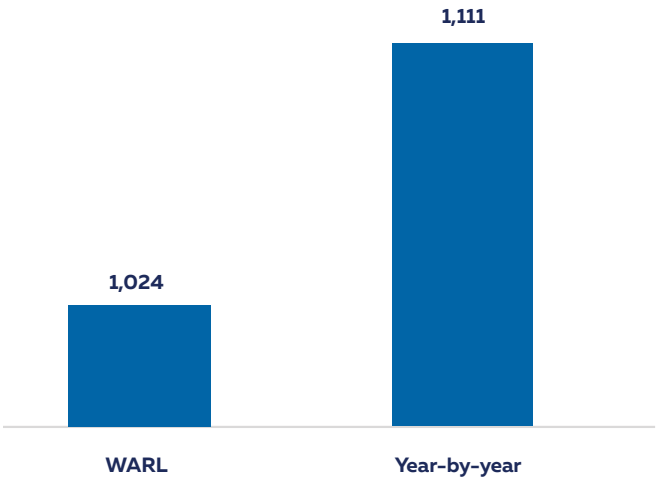
There is a second component included in depreciation to calculate the regulatory depreciation building block. RAB indexation, which compensates businesses for actual inflation, is subtracted from depreciation to ensure that businesses are only compensated once for actual inflation. It is forecast to be $219 million higher in the 2024-29 period, because the RAB is higher. This means there is a higher deduction from depreciation. Our placeholder regulatory inflation is 2.4% per annum.

We are considering changing our method for calculating depreciation from weighted average remaining life (WARL) to year-by-year tracking.

WARL is calculated for the 2019-24 period by weighting the remaining lives of assets existing at the start of the period and the remaining lives of new assets rolled into the RAB during the period by the depreciated value of those assets. At this time in our investment cycle, this results in the dollar value of new assets being given more weighting even though the older assets make up significantly more of the RAB in physical terms. As a result, the WARL method over-estimates the remaining useful lives of all assets within a particular asset class.

Year-by-year tracking does not rely on a WARL but calculates individual straight line depreciation by asset class for each year of capex additions over the life of each asset. Effectively, the assets added each year will be depreciated by their actual remaining life rather than an average including older and younger assets. This change does not impact how much we recover over the life of an asset, but it does change when we recover it.

Figure C.5 Comparison of forecast under each depreciation method ($ million, nominal)



While year-by-year tracking results in regulatory depreciation being $87 million higher than WARL, the overall revenue impact is $42 million due to other interactions in the building block revenue.

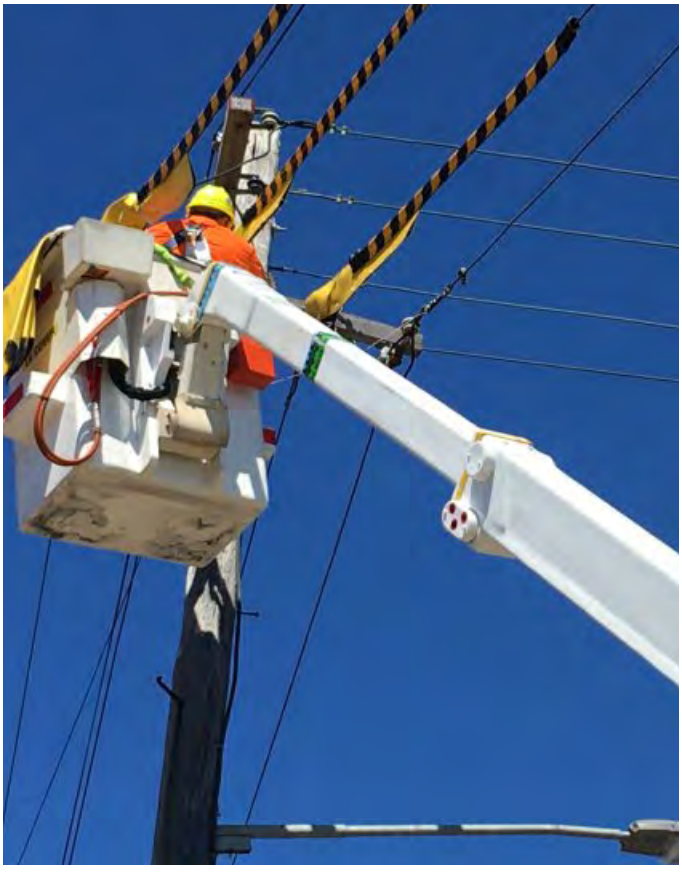
Net depreciation is forecast to be $1,111 million, which is 12% of total building block revenue. It is higher than in the current period due to additional capex more than offsetting depreciation of older assets.

Consultation question 13:

While our proposed depreciation change will improve intergenerational equity, it will mean current customers bear a higher cost burden than previously. How should we balance the proposed change with the need for affordability?

Opex

Our forecast opex is explained in **Appendix B** to our Draft Plan. Nominal opex including debt raising costs is $2,468 million and 26% of total building block revenue.



Revenue adjustments

Revenue adjustments are incentive schemes or other adjustments to revenue allowed or required under the National Electricity Rules (**NER**).

Efficiency Benefit Sharing Scheme

The Efficiency Benefit Sharing Scheme (**EBSS**) applied to our current 2019-24 period regulatory determination, which means that any carryover gain or loss will be added to or deducted from 2024-29 revenue. The EBSS did not apply in the 2014-19 period. Therefore, any carryover amount is an increase compared to the previous 2014-19 period.

As discussed in **Appendix B** to the Draft Plan, we have reduced our opex since 2015 and expect to spend less than our current opex allowance in the current 2019-24 period. This means we expect a positive carryover amount to add to revenue in the 2024-29 period. We have calculated this amount using the AER's model and forecast opex for FY23. We currently expect the EBSS carryover in the 2024-29 period to be $276 million, which is 3% of our forecast building block revenue. While we receive 30% of the value of that ongoing saving, customers will receive the benefit of lower ongoing opex allowances.[13]

Capital Expenditure Sharing Scheme

The CESS also applied to our current 2019-24 regulatory determination period. Our net capex is lower than allowance, which has been predominantly driven by exceeding forecast asset disposals.

Proceeds from asset disposals are removed from the RAB, so being incentivised to maximise these proceeds is good for customers. The more the RAB is reduced, the lower the return on assets and future costs to customers.

We have calculated the carryover amount using the AER's model and forecast capex for FY23 and FY24. The CESS has also been reduced to adjust for a capex overspend in the final year of the previous 2014-19 period. This negative adjustment is $33 million. We currently expect the CESS to be $100 million which is 1% of our forecast building block revenue.[14]

Demand Management Innovation Allowance Mechanism (DMIAM)

The DMIAM provides distribution networks with funding for research and development on demand management projects with the potential to reduce long-term network costs.

The DMIAM comprises:

- A fixed allowance of $200,000 ($, real FY17), plus 0.075% of the annual allowed revenue for each year;
- Project eligibility requirements; and
- Compliance reporting requirements.

Our forecast DMIAM is $7 million, which is 0.1% of our forecast building block revenue.

Shared assets

Under the NER we can earn revenue on network assets used for other purposes. For example, when telecommunications companies attach infrastructure to our poles rather than build additional poles, we can receive rent from those companies. If the amount we earn becomes material, there is a mechanism to return a proportion of the revenue to our customers so that they get some of the benefit of the additional revenue.

We currently expect that the revenue we will receive from these shared assets will become material in the 2024-29 period. Because of this, we have reduced our network revenue by 10% of the shared asset revenue. In our **Draft Plan** this forecast amount is $27 million nominal which reduces forecast building block revenue by 0.3%.

Tax allowance

The last of the revenue building blocks is tax allowance. This allows network businesses to cover tax expenses. We have calculated our tax allowance in accordance with the AER's methodology and forecast $220 million, which is 2% of building block revenue.[15]

13 This estimate could change based on the AER's advice on how to report SaaS in the current period.

14 Ibid

15 In October 2020 the Federal Court made a decision relating to the tax treatment of capital contributions and gifted assets in Victoria.Gifted assets subject to the decision were not added to revenue for the purpose of calculating our tax allowance. Our expert tax advice, as discussed with AER staff, indicates that the ruling does not apply in NSW because of the different gifted asset frameworks. Therefore, our Draft Plan revenue includes gifted assets in taxable revenue.

D Demand forecasts

This appendix explains how we are currently preparing the demand forecasts that we will use in our regulatory proposal and Tariff Structure Statement to the AER, due in January 2023.

Establishing the baseline

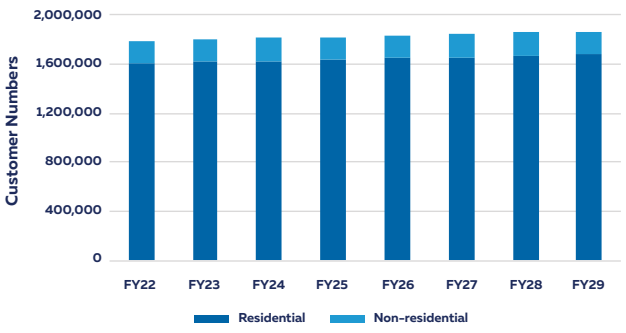
To forecast the demand for our network services over a determination period, we forecast customer numbers, underlying energy consumption, DER, energy efficiency, and major customer loads to generate a projection of overall energy consumption. We use this forecast in several ways – including to project the localised expenditure needs of our network, set our proposed tariffs, and determine the bill impacts for our customers.

Many underlying factors will affect our baseline and demand in the short term. In the current 2019-24 period, the lingering impacts of COVID-19 have led to stronger than expected energy consumption in the residential sector, as many workers delay their return to the office. However, total network energy use is still below trend due to the impact of the 2 lockdown periods on businesses in 2020 and 2021.

Forecasting customer numbers

To forecast our residential customer numbers, we project the growth over the 2024-29 period using the Housing Industry Association's dwelling starts forecast. We forecast our non-residential customer numbers based on recently observed trends. Our current forecast customer numbers for 2024-29 are shown in **Figure D.1**.

Figure D.1 Customer number forecast



Forecasting underlying and overall energy consumption

We use an established model to forecast energy consumption across our network. The model uses actual energy usage data from 2003 and separately estimates consumption for residential and business segments.

The residential projection is driven by household disposable income and a retail price index. Business energy is modelled using gross state product (**GSP**) and a retail price index.

This underlying energy projection is enhanced via specific adjustments for:

- Forecast rooftop solar, batteries and EVs;
- Estimated energy efficiency gains; and
- Major customer loads (such as data centres and rail projects).

Figure D.2 Post-model adjustments for residential consumption, GWh

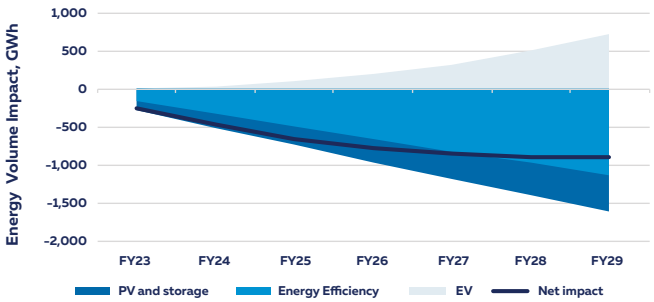
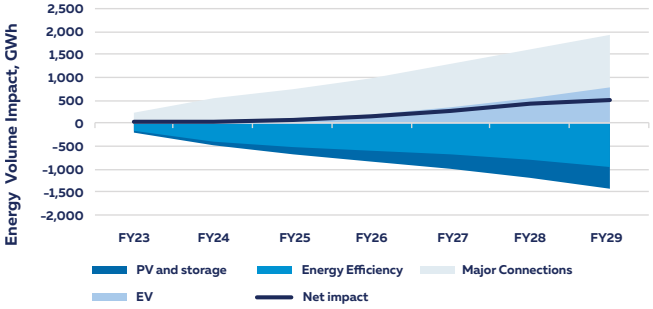


Figure D.3 Post-model adjustments for Non-residential Consumption, GWh



We have developed 4 different forecasts for EV, rooftop solar and battery uptake which are aligned to the 2022 AEMO Integrated System Plan (**ISP**) projections. The consumption forecast uses AEMO's Step Change scenario as the base case.

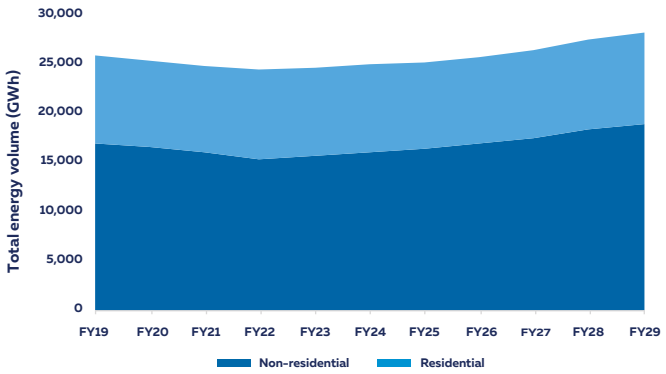
The energy efficiency forecast is aligned with AEMO's Electricity Statement of Opportunities (**ESOO**) 2021 forecast inputs, with 2 exceptions. We have developed updated forecast inputs for the NSW Energy Savings Scheme (**ESS**) and Peak Demand Reduction Scheme (**PDRS**) in line with the latest developments in these areas.

The overall energy consumption forecast is produced by combining the modelled forecast and the separate adjustments.

Our total energy usage to 2029 is expected to decrease by 0.7% between FY19 and FY24, followed by an increase of 2.5% per annum between FY24 and FY29 (see **Figure D.4**).

The COVID-19 related drop in consumption starts to recover post-FY22 due to growth in customers, the general economy, electric vehicles and major connections such as datacentres. These factors are, to a degree, offset by projected energy conservation outcomes due to increasing solar PV penetration, the impacts of the NSW Energy Savings Scheme and improvements in building and electrical appliance efficiency.

Figure D.4 Overall Consumption, GWh



Forecasting smart meter numbers

The rate at which smart meters are installed is an important factor in tariff assignment and revenue recovery for the 2024-29 period. Our forecasts for each tariff depend on the number of customers that have smart meters. We still have around 1 million customers with non-smart meters.

Our proposed tariff assignment policy will see small customers with meter upgrades assigned to demand tariffs. New small customers will be immediately assigned to demand tariffs.

We note that the current AEMC metering review will produce a final recommendation in December this year. The sooner smart meters are installed, the more customers will have the better opportunity to manage their energy use.

For more information on our proposed pricing reforms see our **Pricing Directions Paper**.

E Incentive schemes

We support the application of a balanced package of incentive schemes within the regulatory framework. In general, we consider the current schemes provide a reasonable balance of incentives for electricity distributors.

A stable framework for incentive-based regulation encourages network businesses to continuously identify cost and service level improvements for our customers.

The AER has commenced a review of its incentive schemes. It has released a position paper in relation to the CESS, indicating that it is considering reducing the network share of the ratio from 30% to 20% in certain circumstances.

We propose that the incentive schemes outlined in **Figure E.1** apply to our business in the 2024-29 period. This is the consistent with incentive schemes that apply in the current 2019-24 period, except that it includes 2 new schemes created since the AER's determination for our 2019-24 period:

- CSIS (a new scheme introduced since our last determination) replaces the customer service element of the current Service Target Performance Incentive Scheme; and
- The export services incentive scheme.

Figure E.1 Proposed incentive schemes

Proposed incentive scheme	Description
Service Target Performance Incentives Scheme (STPIS)	See next section.
Incentive scheme for export services	This incentive scheme has been identified for development by the AER. It is intended to provide appropriate incentives for service quality for customers who export electricity to our network. The AER is consulting on new arrangements for incentivising and measuring export services with a final decision currently expected in December 2023.
Efficiency Benefit Sharing Scheme (EBSS)	The EBSS provides network businesses with a continuous incentive to pursue efficiency improvements in their operating expenditure and provide a fair sharing of these between a distributor and network users. Customers benefit from efficiencies through lower costs into the future. We may propose some exclusions from the EBSS based on discussions with the RCP, for example for innovation.
Capital Expenditure Sharing Scheme (CESS)	The CESS provides network businesses with a continuous incentive to undertake efficient capital expenditure throughout the regulatory control period by rewarding efficiency gains and penalising efficiency losses. Customers benefit from efficiencies through lower return on asset and depreciation in future regulatory control periods. We may propose some exclusions from CESS based on discussions with the RCP, for example for innovation, consistent with the current period.
Demand Management Innovation Allowance Mechanism (DMIAM)	The DMIAM provides network businesses with funding for research and development in demand management projects with the potential to reduce long-term network costs.
Demand Management Incentive Scheme (DMIS)	The DMIS provides network businesses with an incentive to undertake efficient expenditure on demand management initiatives that do not involve increasing the size of the network. The DMIS contains 3 elements: • A cost uplift on expected costs of efficient demand management projects; • A net benefit constraint, which ensures the incentive payment for any project cannot be higher than that project's expected net benefit; and • An overall incentive constraint, which limits the total incentive in any year to 1% of the distributor's allowed revenue for that year.
Customer Service Incentive Scheme (CSIS)	A new incentive scheme to enhance customer service, co-designed with customers to focus on areas of service that are most valuable to our communities. More detail is contained in **Section 4.3.1** in the Draft Plan.

Service Target Performance Incentive Scheme (STPIS)

The purpose of STPIS is to provide a financial incentive for distributors to maintain and improve service performance where it provides value to customers. This is intended to counterbalance any incentives distributors may have to reduce costs at the expense of reliability and customer service levels.

STPIS components

The AER's STPIS comprises 2 components:

- A service factor (**s-factor**) adjustment to the annual revenue allowance that rewards (or penalises) distributors for better (or worse) performance compared with a predetermined target for supply reliability and customer service, set by the AER; and
- A guaranteed service level (**GSL**) component whereby customers are paid if they experience a service below a predetermined level, set by the AER.

The STPIS currently applies to Ausgrid. However, the GSL component does not apply as there is a jurisdictional GSL scheme in place for our customers, set out in our licence conditions under the *Electricity Supply Act 1995* (NSW).

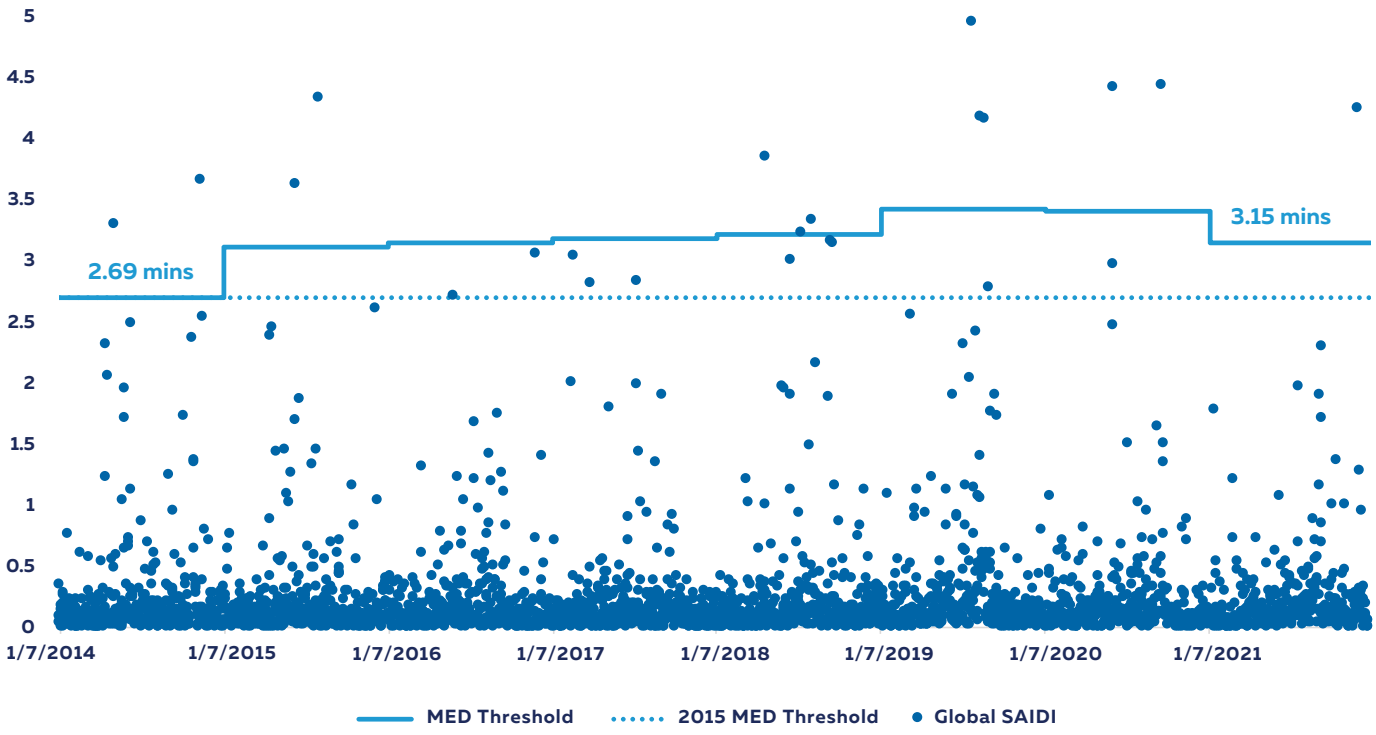
We are also considering proposing a CSIS to the AER (see **Section 4.3.1** of our Draft Plan). If we decide to do this, and the AER accepts this proposal, the new scheme would replace the customer service component of the STPIS.

STPIS exclusions

A key component of the STPIS methodology is the major event days (**MED**). MEDs exclude extreme events like major storms from the calculation of the rewards and penalties we receive under the STPIS. However, this does not adjust for the impact of extreme events in calculating the MED threshold itself. This can have a distortionary impact.

The impact of including major events in calculating the MED threshold is shown in **Figure E.2**. Significantly, it shows that the MED threshold, which was 2.69 minutes in FY15, has now increased, under the AER's method, to 3.15 minutes. Further, it highlights that since FY15 there have been 9 major events on our network which would have been excluded under the FY15 threshold, but are included in our current 3.15 minute MED threshold. We are investigating this issue further, particularly given the expectation that the changing climate will result in more extreme weather events. Other changes should also be considered, such as the automatic exclusion of declared natural disasters from the STPIS.

Figure E.2 Major event day threshold plotted with network-wide (global) SAIDI performance



F Cost pass throughs

Cost pass throughs allow us to recover any material costs incurred from unforeseen events. This includes the additional costs associated with natural disasters, which cannot be predicted ahead of our regulatory determination.

Nominated cost pass through events we are considering

Our current position is to put forward the same nominated pass through events as our 2019-24 regulatory proposal. These are:

- Insurer's credit risk;
- Insurance coverage;
- Natural disaster; and
- Terrorism.

We have an opportunity to suggest the wording that defines each nominated pass through event. This will require particular attention to the definition of a 'natural disaster'.

Revisiting the cost pass through framework for natural disasters

Through our engagement with our communities to date, we have heard from customers that they are interested in how the regulatory framework can be reviewed to ensure it considers the impacts of climate change.

Building climate resilience and adapting to the impacts of climate change continue to be increasingly important considerations for our business, as noted in our 2022 consultation paper with other DNSPs.[16] We note that MED calculations may change and a new Widespread and Long Duration Outages (**WALDO**) events may be introduced. This is important to establish the appropriate regulatory settings in a climate where extreme weather events are becoming more common.

Customers are telling us that they want us to prioritise building climate resilience. We recommend revisiting the cost pass through framework to accommodate natural disaster events that are not one large, isolated event (like a cyclone), but a series of cumulative events.

One way this could be achieved is by drawing a stronger link with how a government authority may have defined the event. For example, the natural disaster event could be defined as:

Natural disaster events will include, but may not be limited to, natural disasters declared by a relevant government authority. Where a government authority has made a declaration that a natural disaster has occurred, the temporal and geographic scope of the natural disaster event will be defined by reference to the terms of that declaration.

Consultation question 14:

Do you have any views on the definition of the natural disaster pass through event?

16 NSW/ACT/TAS/NT Electricity Distributors (2022). Collaboration Paper on Network Resilience.

G Service classification

As we are a regulated monopoly, the AER classifies the services that we can provide to customers and in what form we can supply them.

The AER's 29 July 2022 Framework and Approach decision sets out the AER's intended service classification for the 2024-29 regulatory control period.

Proposed new services

We proposed new services for a few items including system support services, leasing out spare capacity in community batteries and export services.

System support services

Along with Endeavour Energy, we requested a new service grouping called 'system support services' to reflect our role as a distribution system operator (**DSO**).

In its decision, the AER identified that our proposed 'system support services', which the AER did not approve, may be subject to a possible 'material change in circumstances' mechanism. This means that the AER may update Ausgrid's Classification of Services at either the draft or final determination stage to recognise 'system support services' as a classified distribution service. It provides the AER and network businesses more time to incorporate broader Energy Security Board post-2025 reforms that will come into effect during the 2024-29 period and classify them appropriately as services.

We support the AER's approach to revisit this service classification as a material change in circumstances in step with the post-2025 reforms to the NEM.

We intend to continue to recommend to the AER that it use the material change in circumstances mechanism for community batteries and system support services.

Leasing out spare capacity in community batteries

The AER has determined it will not classify leasing out spare capacity in community batteries as a service and the AER's Ring-fencing Guideline (Electricity distribution) currently prevent Ausgrid from providing community battery services without a waiver.

However, we could provide these services if the AER was to classify the facilitation of excess battery capacity as a standard control service (**SCS**). This would require a future update to the Ring-fencing Guideline and the AER using the material change in circumstances provisions.

We propose to continue to recommend to the AER that from 1 July 2024:

- Facilitating the leasing out of spare capacity in a platform asset is classified as a SCS;
- Using the leased capacity in a platform asset (by a third party) remains an unregulated service.

We will continue to share our thinking on community battery cost and revenue allocation with the AER and key stakeholders.

Export services

We support the AER's approach to treat export services as a SCS.

Ausgrid

For more information, or to make a submission go to:
YourSay.Ausgrid.com.au

September 2022

Promoting the long-term interests of consumers in a changing climate: A decision-making framework

for consultation

Empowering communities for a resilient affordable and net-zero future.

Ausgrid

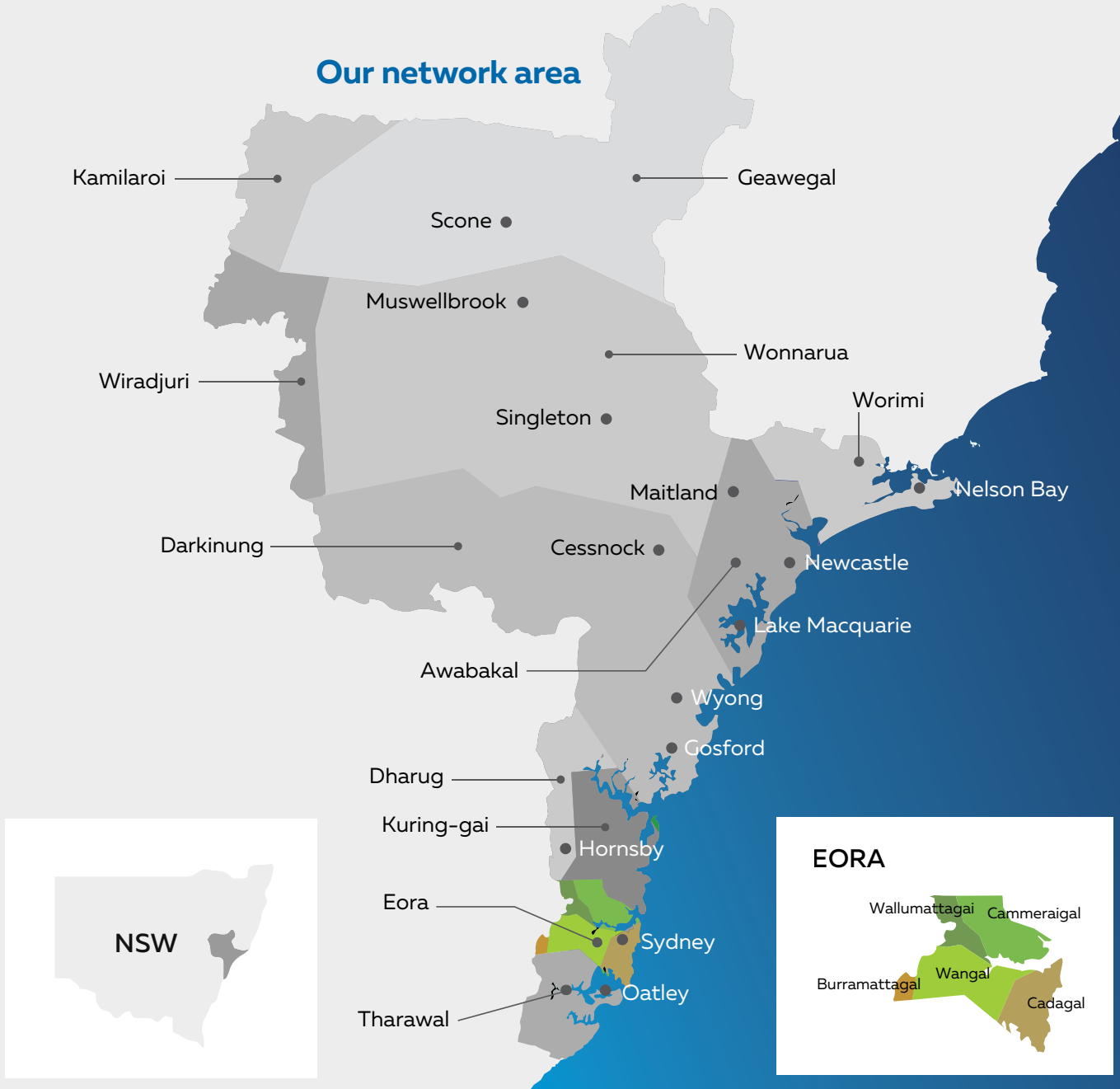
Acknowledgment of Country

We acknowledge the Traditional Custodians of the lands where the Ausgrid distribution network is located, and we pay our respects to the elders past, present and emerging.

As set out in our Reconciliation Action Plan, it is important that this recognition leads to industry wide support and understanding of the knowledge, stories, languages and experiences of Aboriginal and Torres Strait Islander peoples, as our way of paying respect, and contributing to, some of the oldest continuous cultures of the world.

Our network and operations span the traditional country of 17 languages, tribal and nation groups in Sydney, the Central Coast and Hunter regions of New South Wales. We want to lead and foster a workforce, and approach to our operations, that embraces the learnings, voices, cultures and histories of these Traditional Owners into our own organisation.

Our network area



Contents

Foreword

Ausgrid and the Reset Customer Panel (RCP) are very pleased to support the release of this draft co-designed document, *Promoting the long-term interests of consumers in a changing climate: A decision-making framework* (the Framework) for public consultation. We also thank the Total Environmental Centre (TEC) for their invaluable support and input into the development of the Framework.

We are all aware of the changes in the climate and the impact from more frequent and severe weather events including bushfires, floods and storms. The impacts and losses from these events continue to be felt across communities. These changing weather events, along with the increasing dependence on electricity in our community, requires all of us – Ausgrid and all in our community – to carefully consider how we respond.

This Framework takes a forward-looking longer-term perspective to responding to these risks and it is intended that the Framework will adapt over time. The Framework is intended to give confidence to the Australian Energy Regulator (AER), Ausgrid's customers, employees, and shareholders in our approach to managing a changing climate.

It is difficult to be fully confident about where and when these events will occur. Ausgrid's designs and operational practices reflect the changing the needs and risks of its network. However, in the aftermath of major climate events Ausgrid generally takes a reactive approach, responding as quickly as we can during an event to keep our communities safe and then afterwards to rebuild Ausgrid' s network as quickly as we can.

Many of Ausgrid's customers, communities and governments are starting to ask if there is a different approach. In the most recent discussions with customers Ausgrid has been consistently urged to do more in advance to try to reduce the impact of these severe weather events on the Ausgrid network.

We also see that a more resilient community will take more than just making Ausgrid and other energy networks more robust. Emerging energy storage technologies may have a role to play. Ausgrid has started working closely with other distributors, suppliers of essential services, local Councils and with other organisations that are focussing on long term planning, and disaster planning and management. Customers also play a vital role in managing the impacts of extreme weather, both before and after the event.

This year Ausgrid has undertaken our first climate impact assessment, which models the impact of extreme weather events on the performance of Ausgrid's network. As the modelling continues to evolve, we expect to learn more about the localised impacts of climate change.

Our Network Innovation Advisory Committee (NIAC) is well-positioned to oversee trials, innovation and research to make sure that the investments Ausgrid makes will maximise benefits to future customers. Community engagement is a key focus. It is also critical that Ausgrid has a line of sight to changing community expectations and Ausgrid is committed to ongoing deep consultation post an event to understand what worked, what didn't work and how there can be continuous improvement in Ausgrid's responses.

The AER has recently issued a helpful guidance note on how it will assess resilience-related funding. The guidance note has been welcomed by customers and networks alike. This draft Framework seeks to reflect the AER's guidance.

This Framework is forward-looking and will adapt over time. It is a living model that will evolve alongside the advances in climate modelling and innovative ways to address network resilience. Ausgrid and the RCP are sure that the adoption of this Framework will promote the long-term interests of consumers in the face of increasing climate change risk. We are very grateful for your feedback.

Richard Gross
Ausgrid CEO

Tony Robinson
RCP Chair

About the RCP

The RCP was established by Ausgrid in June 2021 to provide independent, customer-focussed challenge to Ausgrid as it develops its 2024-29 regulatory proposal and investment forecasts. The RCP has 6 members formed from Ausgrid's Customer Consultative Committee (CCC), and an independent Chair. The RCP has worked with Ausgrid to deeply consider how the draft Framework promotes the long-term interests of customers. For more information on the RCP see Ausgrid's website: https://yoursay.ausgrid.com.au/page/who's-listening

Executive Summary

Why do we need this Framework?

Climate change is causing more frequent severe weather events. These events are causing profound loss and inconvenience to communities, especially during prolonged power outages.

Ausgrid's customers, stakeholders and governments are urging Ausgrid to review its plans and network designs and operations to consider steps it can take to maintain network performance and network resilience and to reduce the impact of damage to its network assets and minimise the duration of outages in the face of these increasing events.

Working out the best way to prepare for and respond to these severe weather events is challenging as it is difficult to be confident about where and when these events will occur. There is a real risk that Ausgrid's efforts might be ineffective or focussed in the wrong geographic locations leading to overcapitalisation of its network.

This Framework takes a forward-looking longer-term perspective to responding to these risks and it is intended that the Framework will adapt over time. It is evidence based relying on the most current climate modelling and evidence that the increased risk in severe weather events will cause increased damage to Ausgrid's assets. Customers are central to the formulation of Ausgrid's responses and options. Ausgrid will partner with the most at risk communities to ensure that they are also preparing for and investing in community resilience so that the burden of the increased risk does not fall solely on Ausgrid. Innovation and learning from trials of new technology are a key feature.

The Framework builds on the AER's 2022 Resilience Guidance note and is intended to provide the AER, stakeholders and Ausgrid's customers with confidence that Ausgrid's actions and responses to severe weather events are prudent, appropriate and fair to today's customers as well as future generations.

What the Framework does not cover

The Framework works within the current regulatory framework including the AER's definition of network resilience. The Framework acknowledges the need for wide area long duration outage (WALDO) value, but does not seek to resolve this. Serious threats to network resilience and network performance from cyber-attacks and pandemics are excluded from the Framework.

How should this framework be used?

Ausgrid will use this Framework to establish a longer-term basis for developing and justifying non-network and network investment decisions focussed on solutions to maintain network performance in the face of severe weather events. It is intended to assist with identifying the most appropriate mix of resilience solutions (including innovation) for the 2024-29 regulatory reset.

Overview of the process under the Framework

Key features of the process are:

- building a knowledge base and taking a longer-term view on the uncertainty of the localised impacts on Ausgrid's network from climate change;
- acknowledging the developing maturity of climate modelling and the need to keep investing in this modelling;
- acknowledging that the development of community resilience is a shared responsibility and seeking boundaries on Ausgrid's role;
- embedding commitments to community engagement as resilience plans are developed;
- requiring evidence of benefits or trials and pilots of innovative solutions; and
- balancing preparatory and responsive investments to ensure intergenerational equity including the affordability concerns of Ausgrid's customers today.

Climate impact assessment

Ausgrid will invest in updated climate risk modelling as the basis for resilience funding in each regulatory period to ensure as accurate a knowledge base as possible. In 2024-29 Ausgrid's climate impact assessment will indicate which low, medium or high RCP emissions target it is using as the basis for its impact assessment. The Framework requires that climate impact assessments will be transparent about the confidence of scientists in the modelling projections for future impact of weather events. These forward-looking base cases will be updated in each subsequent regulatory period with refreshed climate modelling.

What options are there to respond to the problem?

The Framework identifies key decision-making criteria to ensure that a full of range of options are identified to respond to increased risk including partnering and co-funding, community education, technology innovation, relying on the pass through mechanism to build back better as well as network investments. A critical safeguard is that Ausgrid must demonstrate a causal relationship between the proposed resilience expenditure and a reduction in impacts from the increase in extreme weather events which would otherwise be expected. Options selected should be the credible least whole-of-life cost option(s) that promote the maintenance of service levels. Finally, there must be customer support for the options, including from the impacted communities, as well as a demonstrated willingness to pay from all customers.

Building and optimising a resilience portfolio for the 2024-29 regulatory reset

The Framework outlines the steps that Ausgrid will follow to prioritise and optimise the resilience program into a portfolio that is integrated with other planned work as part of the 2024-29 regulatory reset. Ausgrid will engage with the community on the prioritisation principles for its resilience programs and ensure that the portfolio meets customers' expectations and willingness to pay.

Community engagement

Community engagement and consultation is a key focus of the Framework. Ausgrid has committed to best practice community engagement to ensure that customers' expectation around network, local community and individual resilience can be understood and met. Potential pathways and partnerships will be explored with the community to ensure that customers are informed about the different resilience expenditure options and help to shape those initiatives.

Additional accountability requirements

Ausgrid will maintain its existing investment governance framework for all resilience expenditure during the 2024-29 regulatory period, recognising resilience is not a stand-alone item in Ausgrid's regulatory activity. However, there will be an additional accountability check for all resilience related expenditure commitments made by Ausgrid as part of its 2024-29 proposal. This requirement incorporates the role of NIAC, and its oversight of innovation, research, trials and pilots as well as oversight of business as usual (BAU) resilience activities that would fall into BAU investment programs.

How will success be measured?

Ausgrid will engage with the broader community on appropriate measures of success for this Framework. Measures of success will include a range of lead and lag metrics incorporating:

- stakeholder satisfaction and customer engagement outcomes;
- community preparedness; and
- network performance.

Reviewing the Framework and resilience decision making

As this Framework will be supporting new types of expenditure with long term implications, Ausgrid will do a full post implementation review (PIR) with its CCC to review the effectiveness of the Framework, resilience decision making, community satisfaction of the portfolio and effectiveness of any resilience investments.

Next steps for the Framework

Ausgrid will be consulting widely on this draft Framework and will seek the input of the AER. Ausgrid's Draft Plan for 2024-29 includes Ausgrid's preliminary thoughts on proposed resilience expenditure. Between September and December, Ausgrid will prepare cost benefit analyses for these programs by applying this Framework. This will also include local community engagement on the design and affordability of the proposed program.

1

Framework Philosophy

Ausgrid is the largest distributor of electricity on Australia's east coast, providing power to 1.8 million customers. The Ausgrid network is made up of substations, powerlines, underground cables and power poles, spanning 22,275 square kilometres in Sydney, the Central Coast and the Hunter Valley.

Ausgrid's vision is for communities to have the power in a resilient, affordable, net-zero future[2] and there is evidence to link an increase in frequency and intensity of extreme weather and natural hazard events, including heatwaves and storms, to anthropogenic climate change.[3] The effects of climate change have prompted communities, organisations, and government to look at building resilience.

Access to affordable, reliable and sustainable electricity is fundamental to the health, well-being and economic prosperity of the community. It is important that Ausgrid, as an essential service provider, considers how best to promote the long-term interests of consumers in response to the increasing risk of localised impacts from climate change on its network performance.

2 https://www.giss.nasa.gov/research/news/20170118/

3 https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world

1.1 Context and reasoning of approach

The Framework was co-designed by Ausgrid and the RCP as part of Ausgrid's stakeholder engagement on its 2024-29 revenue proposal. Ausgrid established the RCP in June 2021 to provide independent in-depth challenge throughout the 2024-29 Regulatory Reset process. The RCP seeks to represent the long-term perspectives of Ausgrid's customers and help ensure customer views are reflected within Ausgrid's 2024-29 Regulatory Proposal.

The Framework was developed in response to:

- Ausgrid indicating to the RCP and its customers its intention to include claims for expenditure for resilience in its 2024-29 revenue proposal;
- 6 distribution network service providers (DNSPs) (led by Ausgrid) publishing a joint consultation paper on 27 January 2022: *Network Resilience: Resilient communities powered by resilient grids collaboration paper 2022)*;
- 'resilience' of the electricity network being raised as a key topic in Ausgrid's customer engagement, with a focus on fairness and the need to employ a range of solutions (Voice of Community Panel (VoC) and in large customer interviews);
- increased focus of the NSW Government on disaster management and disaster recovery through initiatives such as the establishment of Resilience NSW and the recent appointment of the NSW Minister for Emergency Services and Resilience; and
- the Australian Energy Regulator's (AER) recent publication Network resilience: A note on key issues (AER guidance note) and in particular **section 3**, Assessing resilience funding and expected evidence to support ex-ante resilience-related funding.

1.2 The Framework's ability to adapt over time

Climate change science began in the early 19th century and since the 1990's research has expanded our understanding of causal relations, links with ability to measure and model climate change. As the years progress, we learn more about the localised impacts of climate change and we become more and more confident in modelled projections. Resilience is something that Ausgrid has always invested in but adapting to climate change is something that cannot be built over a short period of time and will likely take decades. As evidence-based climate data and confidence levels continue to increase, lessons learned can be applied to future responses by individuals, communities, Ausgrid and other suppliers of essential services.

This Framework is intentionally forward looking, taking a rolling longer-term perspective, and a key feature of this Framework is its ability to adapt over time. The November 2021 AER Information paper 'Regulating gas pipelines under uncertainty' highlights a new flexibility in the AER's approach to responding to uncertain long-term risks within each reset. For example, the AER has explored accelerated depreciation so that future gas network customers, which may be significantly less in number, do not pay too much for the long-term, fixed cost investments that current customers require today. A similar longer-term approach to resilience funding is reflected in this Framework.

1.3 Ausgrid's approach to risk management and investment

Ausgrid has a risk management framework and approach to how it makes investments. This approach has been informed by relatively stable weather conditions; to date these programs have not considered the impact of a changing climate risk.

Without accounting for climate change impacts when making network investments, there is risk of locking in higher costs and greater risk for the customers being served by that network over its 50-year life. As it stands now, the resilience of the assets that provide our current electricity supply is dictated by the decisions and design principles adopted by those that built the network at the time of installation. Likewise, those people being supplied by the electricity network in 2065 will be living with the risk and cost implications of the investment decisions we make today. It is therefore critical that electricity networks, and regulatory authorities, consider how our climate might change over the next 40-50 years, not just the next 5-10 years.

Acknowledging that the past is no longer a predictor of the future, Ausgrid's hypothesis was that a changing climate meant that the threshold separating prudent from non-prudent investment would shift. In FY 22 Ausgrid has undertaken its first Climate Impact Assessment, which aims to take an evidence-based approach to the forecasting of the impacts of localised risks from a change in extreme weather events on the performance of Ausgrid's network. This work is considered the first of its kind by a distribution network in Australia, and as climate data and modelling of impacts to the grid continues to improve, this work will need to be updated on a semi-regular basis. Ongoing investment by Ausgrid in the climate impact assessment (and climate modelling) is a critical underpinning to this Framework. The following illustrative example[4] describes the hypothesis.

4 *https://cdn.ausgrid.com.au/-/media/Documents/Customer-engagement/Network-resilience/Network-resilience-collaboration-paper.pdf?rev=1e1f297109b348a0827fdd76accef1a3&hash=628398035B40E1762E6954BB474D8914*

Figure 1.1: Investment needs are evolving with a changing climate

Hypothesis: a changing climate means the threshold beyond which investment in resilience is no longer economic is shifting

1.4 Ausgrid's commitment to understanding consumers and partnering when needed

Ausgrid is committed to providing the best outcome for its customers, including future generations. The Framework includes a commitment from Ausgrid for appropriate community engagement so it can understand the specific needs of the different communities that are supported by the Ausgrid network. Ausgrid and the RCP recognise that solutions that work in Sydney, may not work in Cessnock and vice versa.

Ausgrid has also committed to partnering and has commenced a robust engagement program with other resilience actors and providers of essential services. Resilience is a shared responsibility and cannot become the sole responsibility of Ausgrid. Ausgrid is engaging with partners to better understand where its role starts and stops within the resilience discussion. Under this Framework before Ausgrid looks to provide resilience related investments or support to a community (investments), Ausgrid will:

- look for partnership opportunities;
- support communities to develop their own local resilience plans; and
- work collaboratively with local communities on the design of community responses and any investments Ausgrid is intending.

1.5 Intergenerational equity

Intergenerational equity aims to address fairness between current and future generations. There is an important balance that the Framework seeks to achieve by balancing the long-term risk for different groups of customers from underinvestment and overinvestment (including cost recovery under the cost pass through mechanism). Under this Framework before Ausgrid looks to provide investment or support to a local community, Ausgrid will:

- implement resilience programs and/or capital solutions when they are the least whole-of-life cost, credible solution to an identified risk;
- where the benefits of a proposed investment are uncertain, trial and pilot different types of support prior to rolling them out;
- prioritise solution(s) that provide the overall biggest net benefit; and
- engage with customers to establish that they are willing to pay for investments to address potential impacts in localised areas.

The Framework promotes finding the right balance in timing for investment as well as the right balance between preparatory investment and responsive investment via the cost pass through mechanism[5] by focussing on:

- the highest risk geographic areas from climate modelling; and
- trials and a staged roll out of new solutions, where there is a high level of uncertainty of the effectiveness of an available option.

This approach will go some way to addressing intergenerational equity, by increasing the probability that investment decisions today will not result in future generations paying materially more than they need to. However, as the cost of inaction is often more than the cost of early action, the greatest risk to future generations may be in doing nothing.

5 Including in advance approval from the AER to build back smarter (differently) as part of a cost pass through application

Why do we need this Framework?

2.1 What is the problem?

Changes in our climate are leading to more frequent severe weather events. The impacts from these severe weather events profoundly affect communities, including causing great inconvenience during prolonged power outages when Ausgrid's network is severely damaged. These changing weather events, along with the increasing dependence on electricity in our community, requires all of us – Ausgrid and all in our community – to consider how we should collectively respond to these shifts in environmental risks.

Working out the best way to prepare for and respond to these severe weather events is challenging as it is difficult to be confident about where and when these events will occur. Whilst Ausgrid's network designs and operational practices reflect the changing needs and risks of its network, in storms and fires Ausgrid generally takes a reactive approach, responding as quickly as it can during an event to keep communities safe and afterwards to rebuild the network as quickly as possible.

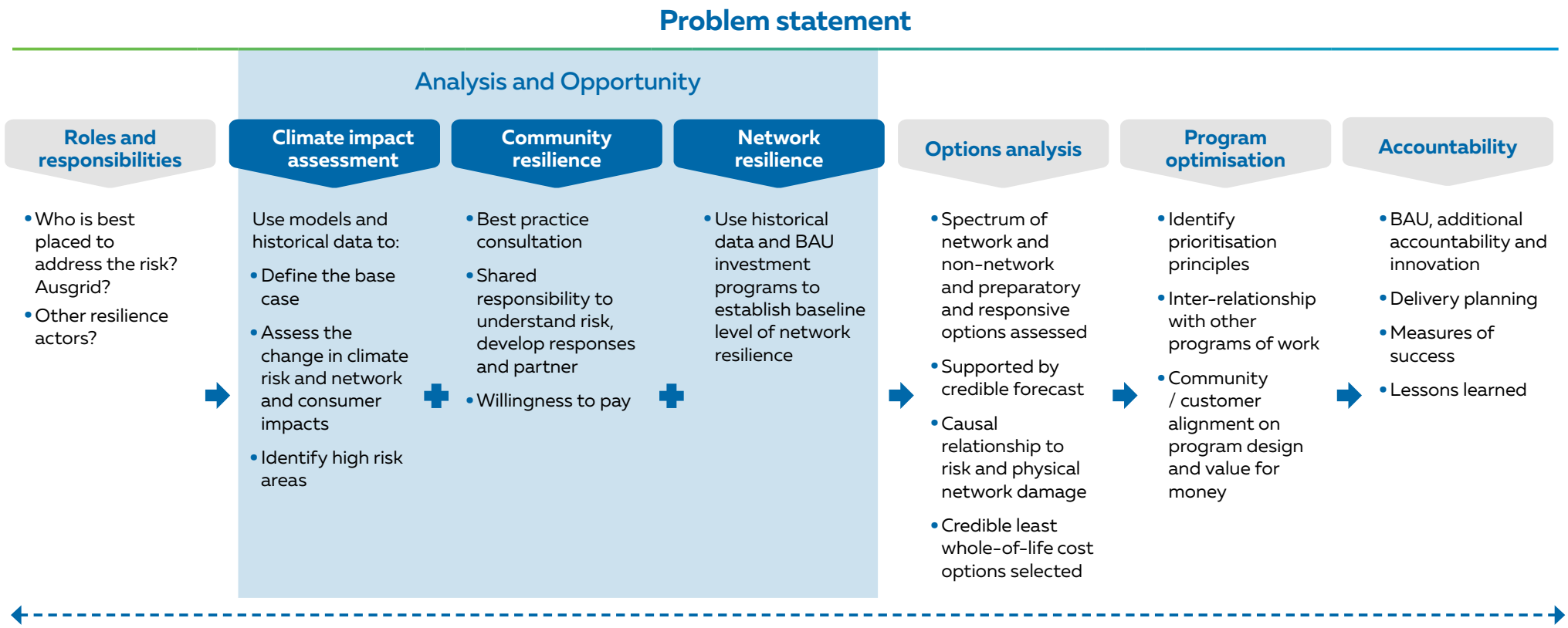
Currently there is no agreed plan on how Ausgrid should work with others to prepare, plan and recover from these severe weather events. It is unclear what Ausgrid's responsibility is to support community resilience over and above its role in maintaining network performance and network resilience. Further, there is no agreed framework for what Ausgrid should do to avoid or withstand these severe weather events, minimise their scope, severity and duration or assess the most efficient means; while doing so in an environment where these impacts are likely to be more frequent.

Ausgrid considers 'resilience' to be the correct framing for addressing this problem. This Framework aims to build confidence that Ausgrid's actions and responses to climate change adaptation, including its resilience related decision making, are prudent, appropriate and fair to customers today and in the future.

Figure 2.2: Summary of resilience Framework

How does this Framework respond to the problem?

A visual process flow of how the Framework will be used by Ausgrid in any future resilience related decisions is set out here:



Preparation

- Willingness to pay
- Identification of at risk communities
- Options identification
- Implementation
- During event
- Post event

3

Definition of Resilience

The concept of resilience is not new. For an electricity network business, resilience is a feature of prudent energy system planning. Ausgrid already makes investments to support the resilience of its network and the reliability of supply.

However, thanks to climate and cybersecurity risks, network resilience is becoming an increasingly important issue. Although resilience is not explicitly defined or referred to in the National Electricity Rules (NER), the AER and this Framework regards resilience as an input that contributes to achieving a high standard of reliability and safety – the service level outcomes.

In the AER Guidance Note, network resilience is defined as:

> *" a performance characteristic of a network and its supporting systems (e.g. emergency response processes, etc.) It is the network's ability to continue to adequately provide network services and recover those services when subjected to disruptive events."*

Ausgrid and the RCP understand the AER's definition to mean:

Adequately provide
Build our capability to adapt, withstand and resist impacts or avoid network destruction by absorbing and minimising disruptions

Network services
Capability to provide network services to customers and additional relevant support to communities

Recover
Ensuring plans and processes provide energy supply restoration and support to communities as quickly as possible

Disruptive events
Major hazard or chronic risk such as extreme weather events, cyber-attacks, pandemics, unknown unknowns etc.

Earlier this year, Ausgrid and five other DNSPs proposed a definition of resilience[5] which differs from that proposed by the AER, but which is consistent with the definition used by Resilience NSW. The main difference between the two is that the latter includes the term" transform". In other words, network resilience is not only about "bouncing back" to the status quo. In the context of climate risk, it includes the prospect of adapting or transforming the system to a "new normal", which over time will be significantly different to the status quo. Adapting and transforming may also require networks to respond, both in their planning and at short notice, to an increasingly chaotic external environment.

3.1 Regulatory Reform

For the purposes of this document, Ausgrid is working with the AER's definition of resilience as interpreted above, while also noting that other, broader definitions may provide further insights—especially when it comes to the role of network resilience in contributing to community resilience.

This Framework has been developed within the existing regulatory framework. However, there are aspects of the regulatory framework that may need to be reviewed in the future to ensure that resilience decision making and investments remain consistent with the lived experience of the network and evolving expectations of customers. Possible areas for review are:

- appropriate metrics for network resilience (e.g., raw system average interruption duration index [SAIDI]);
- how major event days (MEDs) are calculated in the service target performance incentive scheme (STPIS) incentive mechanism;
- how to value customer reliability during outages exceeding 12 hours (i.e. WALDOs); and
- potentially, whether resilience needs to be explicitly defined and recognised in the NER.

3.2 Distinguishing between BAU and new investment

BAU investment programs are designed to meet a range of business requirements and service level outcomes including safety and reliability. BAU investments support a baseline level of resilience in the network (e.g. traditional Repex). Ausgrid will distinguish between BAU investments that pre-dated this Framework and new investments designed to address the increase in climate related risk to the network, whether they are extensions of BAU programs or new programs. New investment programs can be both new types of investment (e.g. community support activities), as well as incremental changes or increases to BAU investment programs (e.g. incremental investments in repex beyond traditional).

5 The ability to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard.

3.3 The scope of the Framework

This Framework focuses on physical risks to Ausgrid's network caused by extreme weather events. BAU physical risks are not considered within this Framework as they are part of Ausgrid's other regulatory obligations. This Framework relates to investments to address increased climate related risks above the baseline level of risk.

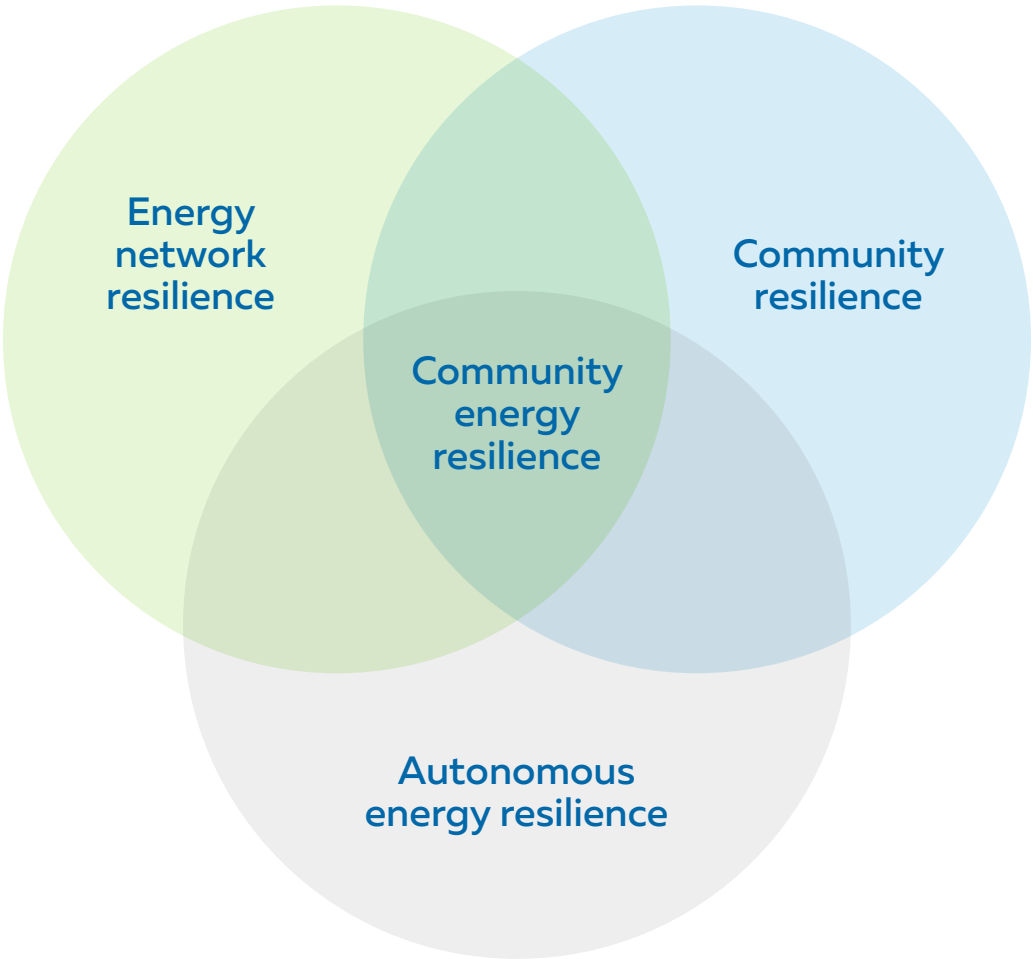
Other risks to the network that are not physical, such as cyberattacks and pandemics, were not explicitly considered as part of this decision-making Framework. However, in the future there may be scope to agree on approaches to manage other disruptive events.

Network resilience is related to, but also distinct from, community resilience. There are aspects of community resilience that cannot be met by networks, and vice versa. For instance, governments, other critical infrastructure operators and individuals themselves all have roles in supporting community resilience. Some aspects of community resilience are directly related to network resilience, and others Ausgrid can play a supporting role along with other entities, shaped by the local communities needs

Lastly, there is the concept of autonomous resilience, or self-reliance. It concerns what individuals, households and businesses can do to contribute to their own energy resilience. This could include anything from being prepared with basics like water and non-perishable food, through having backup power supply sources, to going completely off grid.

The three dimensions of resilience – network, community and autonomous (or self-) – come together or overlap when all three act together to improve local energy resilience.

Figure 3.1: Focusing on the three dimensions of resilience



4

Background to the Framework

4.1 How this Framework should be used

This Framework should be used by Ausgrid (and potentially other organisations) as a longer-term approach to planning and resilience decision-making for network, and non-network investment decisions including (but not limited to) network investment, community education, co-funding arrangements and the testing and staged roll out of innovative technologies associated with the incremental increased risk from climate change.

The intention of this Framework is to help with the current 2024-29 regulatory reset application as well as future reset periods to identify the most appropriate mix of resilience solutions for an area. The Framework will also be reviewed and updated as needed as Ausgrid and the broader industry learns more about adapting to climate change.

4.2 How this Framework was developed (co-design)

Climate change is recognised as one of the biggest problems that civilisation will need to manage today and adapt to for future generations to come. As managing this problem is so large, especially when balancing it with other complexities such as affordability and rising inflation, the topic requires significant stakeholder engagement.

This Framework is intended to build upon the guidance of the AER and was developed and co-designed by Ausgrid and its RCP as an opportunity for customers (via representation through the RCP and in subsequent community engagement) to contribute to the creation and development of an approach to resilience decision making and funding from its inception, rather than take on a reactive role. To that end, the RCP and Ausgrid have taken the following key matters from the AER Guidance Note as the foundation for this Framework:

Table 4.1 AER Guidance Note requirement

AER Guidance Note requirement[2]	Section in this Framework where this requirement is addressed
The AER's definition of resilience	**Section 3**
Resilience funding is within the NER	**Section 3**
Resilience is a characteristic of a network that directly influences service level outcomes (maintenance of reliability, safety, and security)	**Section 3**
The optimal balance between ex-post and ex-ante responses needs to evolve	**Section 4**
Network resilience is part of community resilience	**Section 3**
Community resilience is a shared responsibility	**Section 5**
The AER will consider roles and responsibilities	**Section 5**
The AER expects rigour in networks' justification for expenditure, but recognises the uncertainty for networks to apply this same rigour to resilience expenditure at this stage	**Sections 6 – 10**
Rigour is also expected in networks' customer consultation	**Section 9**
Networks need to demonstrate causal relationships (but how this is done needs to be refined)	**Section 6**
A risk based, geographic approach is needed (to be refined and improved over time)	**Section 6**
Latitude was given to develop a framework	**Section 2**
Expenditure on ICT to support climate resilience is endorsed	**Section 8**
The AER's position on emergency responses and preparatory funding includes network responses during an event as well as before and after	**Section 4**
The AER is interested to know customers' willingness to pay for proposed expenditure on resilience	**Section 9**
The AER expects local communities (not just customers) to support and contribute to how resilience planning or expenditure is proposed for their area, as a result of meaningful engagement by networks	**Section 9**
There is a greater expectation to demonstrate customer preferences in both engagement and modelling	**Section 9**

2 *AER, Note on the key issues of network resilience, April 2022: https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/aer-note-on-network-resilience/aer-position*

As this Framework was co-designed during its inception, there was genuine discussion, engagement, and feedback between the groups that occurred after several in person workshops. This Framework represents an agreed joint approach to resilience between Ausgrid and its RCP and it outlines a shared understanding of how to take a risk-based approach (see **section 6**) to the development of its resilience programs. Ausgrid will be consulting on the Framework during 2022 to test the views of its customers, stakeholders, and the AER.

4.3 What the Framework achieves

The intention of this Framework is to promote the long-term interests of consumers in the face of increasing climate change risk by building confidence that Ausgrid's actions and responses to climate change adaptation are both prudent and appropriate. Key features of the Framework that are set out in **sections 5-10** of this Framework include:

- building a knowledge base and taking a longer-term view on the uncertainty of the localised impacts on Ausgrid's network from climate change;
- acknowledging the developing maturity of climate modelling and the need to keep investing in this modelling;
- insisting that the development of community resilience is a shared responsibility and seeking boundaries on Ausgrid's role;
- embedding commitments to community engagement as resilience plans are developed;
- requiring evidence of benefits or trials and pilots of innovative solutions;
- balancing preparatory and responsive investments; and
- considering intergenerational equity including the affordability concerns of Ausgrid's customers today.

4.4 Assessment by the AER

The AER should have greater confidence that proposals for resilience related funding prepared under this Framework reflect consumer preferences, as they are central to the Framework's decision-making processes. The Framework seeks to give customers and communities significant influence over the development of Ausgrid's resilience responses to ensure Ausgrid is delivering outcomes valued by its customers and communities. The extent to which expenditure forecasts address the concerns of customers and communities is also a factor which is central to the AER's decision making under the NER.[2]

2 National Electricity Rules, cl. 6.5.6(e)(5A) & 6.5.7(e)(5A)]

5

Roles and responsibilities

5.1 Roles and responsibilities of all parties included in resilience planning and implementation

As climate change is one of the biggest challenges humanity will have to manage now and into the future, there is an important and increasing focus on the roles and responsibilities of essential service providers like Ausgrid, government at all levels, emergency services and other key resilience actors to build overall resilience within our respective systems and communities. There is an opportunity for Ausgrid to work together with other stakeholders to ensure there is a shared responsibility to build and maintain resilience.

In NSW there are several initiatives that seek to co-ordinate responses when disaster strikes. By contrast, there is minimal pre-planning and minimal long-term coordination in terms of things such as asset investments that may have a service life of 50 years. It is imperative that Ausgrid makes planning decisions in a coordinated fashion that removes the siloed way in which various organisations have been operating (as much as reasonably possible). When thinking about resilience planning and potential investments, there needs to be demonstrated collaboration between Ausgrid and different resilience actors.

The definition of specific roles and responsibilities of players in the resilience's ecosystem is key. Ausgrid recognises that although it is taking a leadership position in the resilience space, it is not solely Ausgrid's role to be considered the "silver bullet" for building a community's resilience. The AER Guidance Note stresses that network resilience is only a portion of a community's resilience, and some responsibility needs to be owned by other resilience actors and the local community itself to develop resilience to extreme weather events. With that, Ausgrid and the RCP recognise that as electrification continues to be embedded into our society through things like communications networks and electric vehicles to our entire financial system, community resilience and network resilience become more strongly linked. A critical step in defining Ausgrid's role is to assess who is best placed to manage responses and support community resilience.

It is important that there is commitment from communities that they will review their own resilience as well as relying on support from key resilience actors. Building community resilience can be a multi-faceted approach that will likely require consideration of a variety of solutions. Solutions may be investments into an uplift of community education, co-funded models of community hubs or mutually beneficial assets, trialling new types of technology such as microgrids, strengthening network assets to withstand the exposures of climate change or a combination of them all.

Ausgrid needs to have a clear definition of what its role/scope is. This can be done by Ausgrid having a clear sense of what the communities' expectations of Ausgrid are and what Ausgrid customers are willing to pay for. The following principles are intended to assist Ausgrid in understanding the appropriate boundaries of its role within the local community for resilience activities:

- Ausgrid should seek to clarify the roles and responsibilities of the different stakeholders who provide essential services and critical infrastructure within the targeted geographic area;
- Ausgrid should identify which activities it is best placed to provide, and which are best provided by other resilience actors (similar to the joint planning process with Transgrid and the RIT-D process with large projects);
- Ausgrid should partner with government, local councils, resilience organisations and local communities to assist them to develop a localised resilience plan; and
- local resilience plans should be built upon the following foundations:
  - foster ongoing trust and confidence
  - encourage self-reliance
  - activities to prepare for and reduce the impact of an extreme weather event
  - integrated action between actors
  - strong and inclusive engagement
  - risk aware and forward looking
  - community-led approaches and place-based planning.

5.2 Embedding engagement within roles and responsibilities

All parties with responsibility for resilience will have a role in the delivery of engagement, and the purpose and nature of Ausgrid's engagement will adapt depending on the role Ausgrid has to play.

Initial phases of engagement will focus on understanding roles and responsibilities of active or potential partners. As engagement progresses in line with the Framework, Ausgrid may be solely responsible, work in partnership with others, or rely solely on others for the delivery of engagement.

It is Ausgrid's intent where there are no existing partners in a specific local community with an active approach to resilience to support and foster other organisations as appropriate to develop the expertise and necessary plans.

6

Climate Impact Assessment

To analyse the problem the Framework focuses on examining the risks of and impacts from severe weather events and associated options. This requires an understanding of the following:

- what is the base case for risks to network assets and impacts to customers from severe weather events;
- what can Ausgrid predict about the future of those risks and what level of confidence it has in those predictions; and
- what is the link between increased risks of severe weather events and likely physical risks to Ausgrid's network and impact on customers?

What is:

Known → **Predicted** → **Unknown**

The following section steps through these three considerations while having regard to the impact of climate change on Ausgrid and the communities it serves.

6.1 Base case – what is known

Ausgrid's current risk forecasting utilises historical performance data and therefore excludes the impacts from increasing future climate events. Despite this, existing controls have been adopted to contribute to improved network resilience.

For example:

When replacing low voltage overhead conductors, Ausgrid's design and construction standards include using insulated conductors which improves the mechanical strength, mitigates conductors clashing together and reduces the risk of a person contacting live conductors.

While this change has not been justified on the basis of increasing climate risk, climate resilience benefits are still expected to be realised from this change over time.

The base case reflects the risks excluding potential future climate impacts and the associated controls which may also provide some climate resilience benefit. With the increasing climate risk, the roll-out of existing controls may accelerate or new controls may be introduced.

Recent significant events including severe bushfires, storms and floods have reinforced the impact that climate change has on the community. The impact of these events to customers can be measured by:

- the damage caused to network assets;
- the damage caused to 3rd party property;
- customer interruptions (size, duration, and related economic impacts reflected by value of customer reliability [VCR]);
- impacts to other essential services (e.g. water, telecommunications etc.);
- safety risks posed to customers (e.g. statistical value of a life saved);
- the cost to recover, including AER pass through applications;
- customers lived experience; and
- other economic customer impacts.

While traditionally these events have been considered difficult to predict and outside of Ausgrid's control, existing and ongoing responses have been implemented to reduce the impact of severe weather events and responses. Ausgrid's existing planning and construction standards are based on well-established principles, supported by experience and long-term operations. When new assets are installed, they are constructed to these latest Australian and International standards, and often provide an inherent performance improvement, including:

- planning standards for network configuration such as feeder and switchgear arrangements; and
- asset design and construction standards such as conductor insulation and pole strength.

These standards generally reduce the likelihood of failure or consequences under multiple scenarios including during severe weather events. Existing standards support:

- roll-out of smart devices with sensors;
- procurement of higher mechanical and electrical rated assets;
- implementing higher design standards;
- greater network segmentation;
- improved emergency response practices;
- improved triaging; and
- improved customer communications.

Examples

1. Covered conductor

Covered electrical conductor (overhead wire) is generally protected from vegetation contact and is less likely to fail or cause a network interruption compared to a bare conductor. This is due to the additional design strength gained by the rubber insulation and the physical barrier it provides to vegetation. If it does fail, the insulation minimises the risk of the public contacting live conductors on the ground or within reach.

2. Network segmentation

Reducing the length of a feeder covered by a single circuit breaker through greater network segmentation will mean that when there is a network interruption, there are less customers affected. Smart sensors, able to locate a fault also support the restoration of customers by further segmenting only the affected portion of the feeder and providing useful information to response crews to make safe and restore.

3. Community safety campaigns

Ausgrid's community safety campaigns have focused on education for the public on the risk of fallen wires, reminding the community of the danger and the requirements to stay clear.

While Ausgrid has and continues to progressively implement these controls, their effectiveness is limited by the locations in which they are installed, which to date have not taken into consideration the impact of historical severe weather events or future climate change. These controls do not provide a level of climate resilience at a speed commensurate with the growing risk on the network due to climate change.

Ausgrid will consider the following overview of its historical data to inform and establish the base case:

- identification of existing data on particular risks and measurement of their impact;
  - physical measures of customers interrupted and duration (SAIDI/SAIFI including major event days) and impacts to communities as results of hazards (e.g. bushfires);
  - how costs were recovered through customers (allowances, pass through, insurance); and
  - knowledge and experience about how various communities in its area responded to particular events
  - role of government and community organisations.

- what changes Ausgrid made to its emergency response practices following a review of previous disaster recovery operations of events from this risk;
- what insights does this data provide for 2024-29 (e.g. balance of preparatory and responsive expenditure); and
- previous consumer consultation/feedback on these issues.

This overview would also provide an understanding of how existing asset management practices have evolved to better address these risks and improve network resilience.

6.2 What can be predicted with confidence

Advancements in data science and climate modelling support Ausgrid to apply forward looking climate projections to its risk modelling. These models have different confidence levels and impacts vary depending on the expected climate change scenario.

Climate change scenarios vary depending on the extent and speed of global emissions reductions. Social, economic, political, and environmental factors makes this difficult to predict and so multiple climate scenarios, based on low, medium and high emissions pathways, need to be considered.

Emissions Pathways

The continent of Australia has, on average, warmed by around 1.4°C between ~1910 and 2020, influencing heat extremes, rainfall (more time in drought, but more intense heavy rainfall events), number of dangerous fire weather days and a longer fire season.

- Physical risks can manifest as damage and interruption to assets and property due to changing climate conditions (chronic risks) or more frequent and intense extreme weather events (acute risks). The probability and severity of these events must be assessed against a range of possible future climate change outcomes assessed over decadal length timeframes. These scenarios, also known as Representative Concentration Pathways, are a measure of greenhouse gas intensity. They include:
- low emissions pathway (RCP 2.6) - a world where global warming is kept to below 2°C, which would be in-line with the ambition of the Paris Climate Agreement.
- medium emissions pathway (RCP 4.5) - a world with modest levels of mitigation where global warming would be approximately 3°C.
- high emissions pathway (RCP 8.5) - a fossil fuel intensive future where global warming could exceed 5°C.

While the medium emissions pathway is generally considered to be the most likely scenario based on current assessments of emissions reductions commitments and demonstrated actions, assignment of distinct probabilities is difficult. This stems from the inherent challenges of specific outcomes from a climate science perspective (the way the climate factors will respond and at what magnitude e.g., non-human emissions such as methane released from thawing permafrost which would naturally tip us into a higher RCP scenario), which is further compounded by the multitude of political, economic and social factors that play an important role in influencing impacts and outcomes.

Historic carbon emissions have already locked in an impact to future climate. Therefore, Ausgrid must place resilience and planning central to its strategy now and in the coming decades given the long-term nature of its assets and be prepared for and respond to the challenges it, and the communities it serves, will face in the decades ahead.

Climate Modelling – Confidence and Probability

Ausgrid recognises that in its modelling it must consider two related but distinct factors. Firstly, the accuracy of the modelling provides a parameter that reflects the confidence in the modelling itself and is articulated through the Intergovernmental Panel on Climate Change (IPCC) confidence table below. The second parameter is the output of the modelling itself, which is considered in the probability of extreme weather events occurring.

Future climate modelling predictions have different confidence levels[2] ascribed to them. How these confidence levels should be interpreted requires explanation.

Confidence Terminology	Degree of confidence
Very high confidence	At least 9 out of 10 chance
High confidence	At least 8 out of 10 chance
Medium confidence	At least 5 out of 10 chance
Low confidence	At least 2 out of 10 chance
Very low confidence	Less than 1 out of 10 chance

Climate modelling shows the increasing probability of different extreme weather events occurring. For example, by 2050 under a medium emissions scenario there will be a 31% increase in extreme heat days (days above 35°) in places like Scone.

Ausgrid's impact modelling will be refreshed as climate data and confidence levels increases. This will occur, at a minimum, every reset period so the most up to date evidence-based data can be incorporated.

2 https://archive.ipcc.ch/publications_and_data/ar4/wg1/en/ch1s1-6.html

Customer Impacts

The impact of climate events on network assets and on customers follows a sequence of events. Typically, this follows:

Climate event

Impact on assets

Impact on network performance

Impact on customers

The configuration and design of the network may be such that the failure of a single asset may have little to no network impact. This could be due to network redundancy and protection. An example of how the sequence of events may occur is shown below:

Storm with high winds and rain

Tree branch contacts overhead wires causing wires to break and fall to the ground

Wires remain live on the ground and network supply is lost

Public safety risk from fallen wires and customer supply interruption

The storm may also make it difficult for response crews to gain access to the location where this event has occurred. Furthermore, the more widespread the impacts are, the more stretched response resources become, leading to further delays in making safe and restoring supply to customers.

While the customer impacts may be high, the probability applied in predicting these customer impacts reduces the forecast risk. Applying probabilities balances the significance of the customer impacts with the likelihood of these impacts being realised.

Historical data provides some indication of the likely customer impacts from future climate events, however, there are many internal and external factors that make it challenging to predict these impacts.

For example:

If parts of the network do not have vegetation, then there is a low likelihood a tree branch will impact that part of the network. By looking at how vegetation has impacted asset performance historically, we are able to apply a probability with a level of confidence to future climate events.

This historical data is balanced with external literature which examines the impact of climate events on network infrastructure.

As Ausgrid continues to collect more climate related data, it can improve the confidence in predicting customer impacts from climate events and the priority of controls.

What can be done?

At each stage of the sequence of events, Ausgrid can implement a range of controls with varying effectiveness to ultimately minimise the impact to customers. As above, a range of factors will impact the effectiveness of controls including the size and severity of the weather event, the design and condition of the asset it impacts, and the configuration of the network it supports.

For example:

Covered conductors will protect the overhead wire from most vegetation contact, however, if a large tree is uprooted, it is likely the conductor will still fall to ground and still cause a customer interruption. In this case the control is effective in most but not all scenarios.

Furthermore, our vegetation management practices include the assessment of tree health to minimise the risk of a tree uprooting. Again, identifying and replacing trees before this occurs has a limited effect and can be highly dictated by the size and severity of the climate event and the climate conditions that preceded the event (e.g. extended droughts can weaken vegetation and increase the likelihood of damage in a storm).

By applying multiple controls across the various stages, Ausgrid can improve the effectiveness in mitigating poor customer outcomes. The key control themes for the proposed sequence of events are as follows:

Test 1:
Delivering and supporting net zero

Climate event

Impact on assets

Impact on network performance

Impact on customers

Test 2:
Increasing the strength of Ausgrid assets and introducing smarter technology

Climate event

Impact on assets

Impact on network performance

Impact on customers

Test 3:
Improving the segmentation and redundancy in Ausgrid network

Climate event

Impact on assets

Impact on network performance

Impact on customers

Test 4:
Improving the Ausgrid response and providing community support

Climate event

Impact on assets

Impact on network performance

Impact on customers

While the most effective mitigation of climate events is the combination of multiple controls, implementing these comes at a cost to customers. Utilising risk based economic evaluation, the risk mitigated (including probabilities) can be compared to the cost to implement to determine value to customers.

As these controls are implemented, their effectiveness will continue to be assessed based on their performance during future climate events. This ongoing review will improve control confidence, impacting probabilities, and providing a better long-term outcome for customers.

6.3 What is unknown

When looking at what is unknown, Ausgrid must consider what cannot be predicted or what cannot be controlled or influenced. This consideration requires drawing a distinction between the unknowns and uncertainty.

As climate resilience is further investigated, data is captured and modelling matures. What was previously believed to be unknown can be forecast to a level of confidence. This has been shown through the evolution of climate science modelling moving from climate events being unknown or random, to being predictable with a level of confidence and is expected to continue to improve into the future. As data is captured and modelling continues to mature, the uncertainties and unknowns can be better incorporated into our risk management processes.

In 2024-29 Ausgrid's climate impact assessment will indicate which RCP emissions target (or weighted combination) it is using as the basis for its impact assessment.

Innovative technologies have seen a shift from traditional long lived mechanical assets to electronic devices with greater functionality and effective control. While we continue to investigate new technologies, the effectiveness of them may not be well understood. Trials provide a mechanism to evaluate the effectiveness of these controls, better understand unknowns, and make decisions on whether to adopt or abandon these options. Depending on the proposed control and what is understood by its effectiveness, the pathway to implementation will be considered by a trial to escalate it from an unknown technology before it is widely rolled out across the network.

6.4 Future trends

It is important to recognise that this Framework is not a single exercise; models will continue to mature, confidence levels will change, consumer needs will shift, and a range of other socio-environmental factors will change.

Ausgrid therefore needs to provide modelling about severe or extreme future weather risks – both for the 2024-29 period and beyond. The purpose of this would be to allow further refinement of the risk strategies and optimising the Framework. This would include:

- reassessing climate risks and likelihood of impacts on Ausgrid's network;
- how might these risks/geographic impact change over the 2024-29 period vs. post 2029 to 2050, and by the end of the century;
- possible insurance projections (if applicable as global severe weather events are impacting on the insurance market) and
- changes in communities' expectations

In addition to this framework, the most effective tool we have is VCR. However, we recognise that there is significant work ahead in better understanding the true value of energy supply in communities affected by severe weather events. Ausgrid will continue to undertake research in this area to better refine its investment approach.

6.5 Causal link between the future trends and asset performance

Ausgrid needs to demonstrate a sufficient causal link between any increase in the risk and damage to network assets that are likely to lead to an impact to community or asset safety and quality of supply. This will provide:

- information on the impact of these risks on performance or expected life of network assets;
- changes Ausgrid has already made to its asset management practices to mitigate the risks;
- information around safety impacts around failed assets;
- information around cost to repair failed assets; and/or
- community impacts of asset failures and network outages.

7

Options Identification and Evaluation

Once the base case impacts on customers and community, future risks and causal links are established under **Section 6** and community expectations of Ausgrid's role and responsibility in relation to those future risks are clarified under **Section 5**, Ausgrid needs to identify the options available to address these future risks.

This section sets out the approach to address the parameters established in **Sections 5** and **6** with a structured process which considers a range of options, applies robust analysis to understand the relative costs/benefits of each option and considers the outcomes in terms of fairness and equity among customer groups.

7.1 Criteria for decision making

Through internal discussion, and the co-design process, we identified the key criteria below that will define how Ausgrid should review, identify and evaluate various options as part of its resilience decision making. Ausgrid will demonstrate fulfilment of these criteria to support claims for resilience funding for investments and trials in the current regulatory period. Inevitably it will use a range of traditional quantitative approaches along with qualitative measures.

1 Modelling must be mature enough to support a credible forecast.

a) Climate data and modelling is up to date and current and is backed by climate scientists.

b) Asset failure modelling is done by engineering experts and demonstrates levels of risk.

c) Levels of confidence are understood and made transparent.

2 Investment decisions are based on the risks to customers using modelling of weather-related perils overlayed with their expected impact on customers.

a) Areas with highest risk (network and community) will be investigated for resilience related activities.

b) Both network and community resilience solutions will be considered for areas considered high risk.

c) The fairness of some customers' reliability materially falling below average levels due to climate change and their location on the Ausgrid network will be considered.

3 All resilience solutions should be considered.

a) Spectrum of resilience solutions have been considered and tested – this can be demonstrated (e.g., support services to communities, co-funding arrangements, innovative technologies, and asset investments before and build back better).

4 There should be collaboration between Ausgrid and other resilience actors.

a) Ausgrid understands its role within the resilience ecosystem – which may differ during different phases of an event (e.g., before, during and after the event).

b) Customers have had input with Ausgrid's community resilience opportunities.

c) Ausgrid can demonstrate engagement and collaboration with other resilience actors.

5 Ausgrid needs to demonstrate a causal relationship between the proposed resilience expenditure (by category or project/program) and a reduction in customer impacts from the increase in extreme weather which would otherwise be expected.

6 The suite of benefits are supported by evidence or, where required, trials run concurrently with prioritised investments. The credible least whole-of-life cost option(s) that promotes the maintenance of service levels is selected.

a) Through the use of the tools of cost benefit analysis and cost benefit ratios, noting the difficulties in valuing WALDO.

b) Demonstration of benefits to network and/or community resilience from expenditure.

c) Demonstration of lowest whole of life cost.

d) Demonstration that worst served customers service levels are maintained or improved.

7 There must be customer support for resilience options.

a) Customers have demonstrated that they are willing to pay even though only some customers will benefit.

b) Affected communities in the targeted geographic areas have had input into the resilience options.

c) Options are consistent with the co-designed priority principles.

8 Ausgrid must demonstrate that communities receiving the benefits of Ausgrid resilience investments are engaged with their reciprocal community resilience obligations.

The previous principles broadly support robust analysis, effectiveness and value for money.

In a postage stamp pricing environment, where average customers pay the same prices regardless of location in Ausgrid's supply area, any localised Ausgrid investment in resilience will effectively be paid for by all Ausgrid customers through their tariffs. The fairness of all customers paying on a postage stamp basis yet receiving variable levels of reliability depending on their location needs to be considered too.

This is to provide an incentive for communities to implement their own resilience solutions in conjunction with any investment Ausgrid might make and help avoid the situation where all Ausgrid customers pay for an investment in resilience in a local community which simply waits for Ausgrid to act rather than engaging on resilience.

High risk identified geographic areas must therefore demonstrate that community resilience is being reviewed at a local level (e.g. commencement of commitment) before resilience investment is committed.

a) Gap analysis has been conducted and identified of communities with commenced planning activities.

b) Communities who have not commenced planning activities may be aided by Ausgrid and other partners to initiate.

9 Ausgrid is conscious of the intergenerational equity issues. We note that early investment in actions to address resilience may often be efficient and consistent with community expectation. However, we must balance this opportunity with several other considerations being:

a) Changes in technology or consumer needs that suggest different solutions may be appropriate in the future

b) Changes in environmental conditions suggest that alternative locations are raised in priority

c) Capital constraints exist as Ausgrid pursues affordability for consumers.

Example - Prevalence of higher or more frequent winds leading to higher frequency of pole failures

For a representative set of 10 poles, in an area where we are expecting worse wind conditions due to climate change, we would expect to see a higher number of pole failures over a particular period, say 20 years.

This is on the basis that a pole's end of life is effectively reached when it either breaks (functional failure), or testing shows that it will not have enough strength to dependably last until the next 5 yearly inspection with the loads we expect it to experience (conditional failure). In either case intervention is needed to prevent safety and reliability issues due to fallen wires and/or falling poles.

Some Implications

If we reliably expect a higher failure rate over the next 20 years, then taking appropriate preparatory actions are in line with what a prudent business would do.

Given the large statistical database Ausgrid holds for poles it can make relatively dependable predictions of the failure rate of these assets (combined functional and conditional). However, it is not possible to predict exactly which poles will fail.

Option	Benefits	Limitations
Community Education	• Makes customers more aware of things which they can do, potentially at low cost to them • Can be broadly effective • Relatively low cost to deliver(opex), and therefore reflected on customer bills	• Does not remove impacts • Does not materially leverage the capability of Ausgrid's existing assets to offer improved performance through marginal investments
Mobile resilience hub ("Support Caravan")	• Mobile so can be used in multiple locations to support more customers • Relatively low capex costs, and therefore reflected on customer bills • Can provide a focal point and/or be leveraged by other agencies to support customers during extreme weather events	• Does not prevent impacts on customers • Does not materially leverage the capability of Ausgrid's existing assets to offer improved performance through marginal investments • May be oversubscribed during large weather events
Build back better	• Marginal cost over build back like-for-like • Targets areas where customers are experiencing extreme weather events	• Customers still experience significant events before intervention • Time constraints of recovery may limit options
Pre-emptively replace poles with stronger ones on targeted basis	• Reduces risks and avoids customer impacts	• How do we target the right poles • Solution is long lived assets- what if we are wrong about severity (say it gets better)

Note: Different solution options may deliver the best outcomes in different locations with different climate impacts, so the Ausgrid wide solution may be made up of a combination of options.

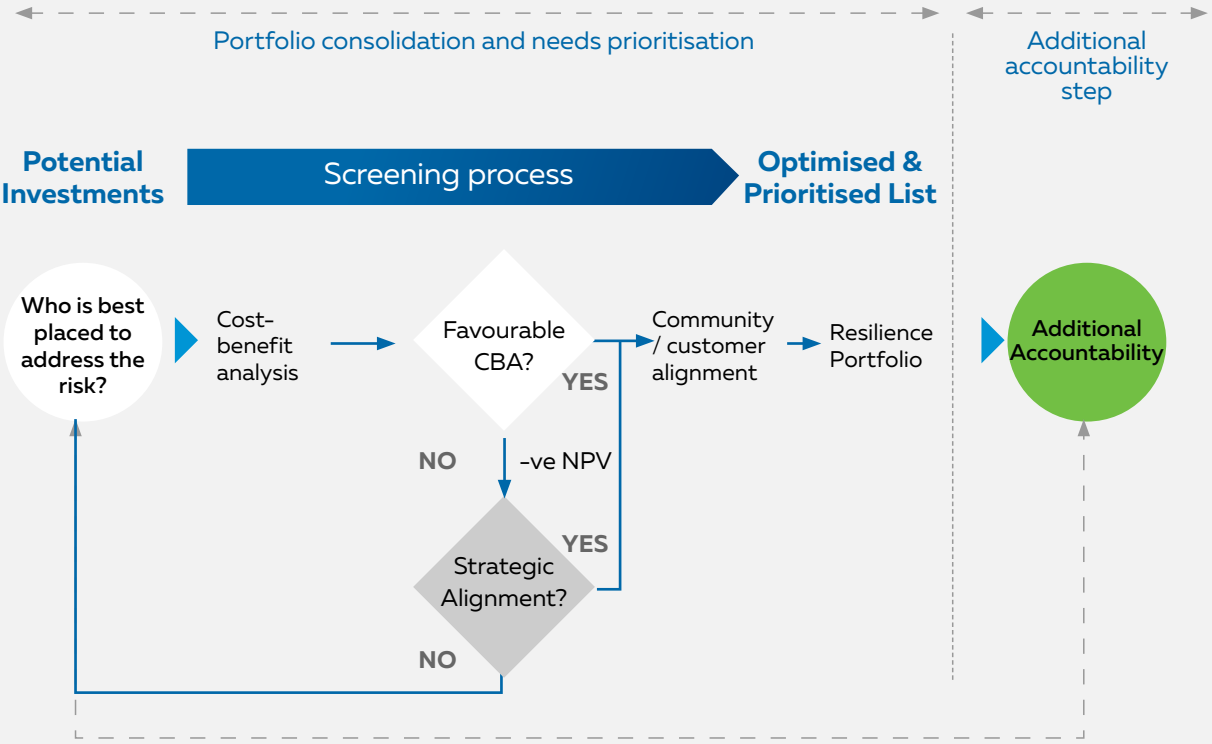
8

Preparing a resilience portfolio for the regulatory proposal

The purpose of this section is for Ausgrid to take the list of economically viable solution options (costs and outcomes) from **section 7** and to develop them into an optimised portfolio and program of activities, trials, pilots and investments to be included in a revenue proposal. The steps to achieve this are:

- review universe of options as a result of **section 7** of the Framework, including inter-relationships with other programs of work;
- develop prioritisation principles to build a portfolio. Ausgrid to engage with the broader community on the prioritisation principles. Some relevant prioritisation principles may be net present value (NPV), risk appetite, strategic alignment, balance between preparatory and responsive programs, customer feedback and consistency with community resilience plans;
- engagement to ensure portfolio can be delivered as a whole and individual options meet customers' expectations and retest willingness to pay;
- review of delivery capability and resourcing; and
- additional accountability requirements of the portfolio under **section 10** of this Framework.

Figure 8: Process for preparing a resilience portfolio



Community engagement will be a large part of both preparing and optimising the portfolio. Ausgrid should seek community input in prioritising the solutions. **Section 9** will inform how Ausgrid will seek feedback from the community generally about their risk appetite and for consistency with their existing community resilience plans (where relevant).

8.1 Optimising the portfolio

Once options have been established under **section 7**, Ausgrid needs to identify, optimise and test with the local community the preferred options and funding programs. The optimised program needs to clearly distinguish between incremental BAU initiatives, and new responses that should be trialled. Incremental BAU investments should be prioritised when they unlock the most benefits for customers. Targeted trials and pilots should be run for resilience measures involving less mature technologies or with more uncertain benefits.

The following information and questions should be addressed by Ausgrid when it is incorporating its portfolio of resilience funding into its 2024-29 regulatory proposal:

1. Detail of opex and capex funded initiatives and the balance between them.
2. Flexibility in resilience option/spend categories (range of network and non-network solutions has been considered to maintain and improve resilience).
3. The balance between local community expectations to build back better and to build back faster after an extreme weather event. While communities expect it, there is generally limited capability to build back better after an extreme weather event.
4. The balance between preparatory and responsive expenditure.
5. How the expenditure is optimised to meet the NER objectives (e.g. reliability and safety maintained [at best])?
6. How have the learnings from the previous regulatory period, trials, recent events or from industry
7. been incorporated into Ausgrid decision-making for the current regulatory period? Do the learnings establish a sufficient basis to change asset design standards and management practices?
8. Has sufficient resourcing (opex and capex) been allowed for NIAC for review (PIR) of the effectiveness of network and non-network investments and trials and pilots of benefits for future investments (preparatory and responsive).

Presentation of portfolio

Resilience related activity and expenditure for the 2024-29 regulatory proposal will be presented to:

1. Provide a holistic view of Ausgrid's network/non network activities including BAU and trials and pilots presented by risk and identified as those activities focussed on preparation, those focussed during the response and those focussed on the recovery phase.
2. Identify which solutions are to be led by Ausgrid and which by the local community.
3. Highlight how Ausgrid selected the capex/opex expenditure? What prioritisation principles were used and how did customers influence the choices made?
4. Show how Ausgrid has confirmed that its customers are willing to pay for the activities to address impacts in the targeted geographic areas.

9

Community Engagement

Community engagement and consultation is a key focus of this Framework. Ausgrid's engagement approach will be oriented around the needs, understanding and interests of customers and stakeholders and will be designed to build on each group's ability and capacity to engage.

Ausgrid and the RCP recognise that resilience is not one size fits all; community resilience is a shared responsibility and solutions will need to be tailored to meet the unique needs of each targeted local community. Many of Ausgrid's customers and stakeholders may face cultural, resource, knowledge or structural barriers to participating in engagement processes. Some customers are familiar with the energy sector, have the resources to participate and will be confident to speak up. Others will have a lower level of understanding of energy issues and may not even be aware of Ausgrid's relevance to them. They may also be less confident to participate in traditional ways, or have limited time, may not speak English as a first language or have limited access to technology.

Consistent and regular community engagement and Ausgrid's commitment to partner with others in the community is essential to realise the goals of this Framework.

9.1 What good engagement looks likes and IAP2 goals and principles

Customers and communities should have a say in how Ausgrid adapts to climate change and supports communities in their preparation, response during and recovery from extreme weather events. Therefore, the RCP believes that Ausgrid needs to be clear how its community engagement about its resilience decision making under this Framework is aligned with IAP2 goals and principles.

IAP2 Spectrum of Public Participation

IAP2's Spectrum of Public Participation was designed to assist with the selection of the level of participation that defines the public's role in any public participation process. The Spectrum is used internationally, and it is found in public participation plans around the world.

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

The features of good engagement under this Framework include:

- consulting locally with those who may be impacted by proposed resilience projects (outside of obligations under Ausgrid's licence conditions) and giving local communities an opportunity to participate in the decision-making process;
- engaging with those affected in a way that empowers them to influence the decision and outcome;
- designing an engagement approach that is sustainable and is balanced with the needs of communities and decision makers;
- seeking out and facilitating the involvement (including the removal of barriers to participation) for those potentially affected by or interested in a resilience project decision;
- seeking input from communities when designing how they participate;
- providing communities with the information they need to participate in a meaningful way;
- developing robust processes to seek views on willingness to pay and in particular the willingness of all customers to pay for greater preparatory expenditure in the highest risk parts of the network through higher bill impacts or lower levels of service; and
- communicating to participants how their input has influenced and shaped the resilience decision.

9.2 Who to engage and when?

Ausgrid's customer and stakeholder base is broad: from the 'citizen consumer' to the 'home user' to major businesses and industry. Ausgrid will adopt a variety of approaches to reach various stakeholders when looking at future resilience options and they will be given the opportunity to participate in the decision-making process.

Ausgrid will also respond to the diversity of its customers' culture, language, demographic and socio-economic status and work with third parties and trusted community leaders to help us reach the 'missing voices' as necessary; shaping and comparing options.

Energy is a complex topic. Ausgrid needs to build customers' energy literacy and understanding by providing clear, visually appealing and jargon-free information. It should strive to tailor language to the drivers and interests of consumers and translate key information as required.

Based on what feasible options may be available to make the network and local community more resilient, these potential pathways will be discussed with the relevant communities and other resilience partners prior to delivery. Through robust stakeholder consultation, consumers will be informed about the different resilience expenditure options.

Framework for how we will approach engagement across different phases of the resilience framework.

Phase		Engagement objective	Who to engage with	Suggested methods	Desired outcomes
Preparation	Community resilience principles	Understand the broader customer appetite for resilience investments, and determine principles to be applied to such investments	Representative household and business customers	Deliberative consultation 2024-2029	Set of principles for resilience investment decisions, including how to determine the fair distribution of resilience outcomes across communities, including the potential redistribution of service and price impacts
	Willingness to pay	Understand the willingness of the broader customer base to fund community specific resilience programs	Representative household and business customers	Deliberative consultation 2024-2029 Choice based surveys – 2029 - 2034	Customer acceptance of a principles-based framework of resilience funding outlining the nature, location and impact of likely programs and overall bill impacts
	Identification of at-risk communities	• Enable communities to understand and take ownership of resilience • Understand the network implications in relation to broader community resilience	• Local Councils – other community organisations • Broader community • State or Federal governments or their agencies	• Council and partner meetings • Broad education campaigns	• Community resilience plans • Households and businesses take action to improve resilience • Clearly defined role for Ausgrid within the broader community's resilience context
	Options identification and expectation management	• Identify preferred solutions • Identify co-funding opportunities	• Local Councils – other community organisations • Impacted customers • State or Federal governments or their agencies	• Focus groups • Community meetings • Surveys	• Understand any barriers and objections to preferred solutions • Determine appetite for alternatives including pre vs post event solutions • Agree co-funding arrangements
	Implementation	• Smooth implementation • Implementation that delivers for Ausgrid and the local community	• Local Councils – other community organisations • Impacted customers		Community understanding, acceptance and embracing of resilience initiatives
During Event		• Event Management • Community awareness	Co-ordinated via emergency service organisation as appropriate	• Emergency response teams • Media and social media	Minimise impacts of the event
Post event		• Learnings for continual improvement • Reduction in the impact of events	• Local community • Impacted customers	• Surveys • Community support services – as agreed	• Identify areas for improvement • Evaluate effectiveness of measure implemented

9.3 The need to check back and validate with the community

Community engagement is a constant feature of the process underpinning this Framework. Several milestones are built into the Framework where Ausgrid will need to check in with its customers. These milestones should be seen as minimum engagement points when developing resilience funding:

- demonstration of customer willingness to pay;
- discussion/validation with the local community that resilience planning has commenced;
- consideration of proposed resilience options;
- demonstration of all customers' willingness to pay for localised benefits for only some customers; and
- evaluation of investments or implementation approaches as appropriate.

Some engagement will be with the targeted geographic area and some will be with the customer base generally, some may be applicable for both:

Ausgrid's broader customer base:

- prioritisation principles;
- getting some level of common understanding of the risks through the Ausgrid Voice of Community Panel (VoC)[9] and large customer engagement;
- seeking views on willingness to pay in the context of other concurrent cost pressures and in particular the willingness of all customers' to pay for greater preparatory expenditure in the highest risk parts of the network through higher bill impacts or lower levels of service (i.e. reallocation of opex/capex from other programs to fund the preparatory expenditure);
- seeking views on customers' appetite for preparatory vs. responsive expenditure;
- identifying customers' expectations during an outage – information provided, restoration times and role of Ausgrid vs. other parties (councils etc).

Local / Community specific:

- Ausgrid reports back to customers with updated climate modelling, and benefits (if applicable);
- co-design prioritisation principles;
- engage with appropriate community organisations (e.g. local Council) on steps the local community is taking to develop local resilience planning activities;
- getting some level of common understanding of the risks through VoC and large customer engagement;
- seeking views on value for money in the context of other concurrent cost pressures and in particular the willingness to pay for various alternative solutions;
- identifying customers' expectations during an outage – information provided, restoration times and role of Ausgrid vs other parties (councils etc);
- seeking views on customers appetite for preparatory vs. responsive expenditure;
- Ausgrid should continue to engage with its customers before during and after major events and unplanned outages to gain an accurate picture of customer's expectations (e.g. similar to initiative undertaken during Narrabeen December Holiday 2021 storm); and
- where Ausgrid wishes to supply temporary support over and above what it is required to do to make the area safe, secure its assets, diagnose faults and then repair assets to restore power supply, this needs to be the subject of engagement with customers. Some issues for that engagement include:
  - How many and what size mobile generators should Ausgrid supply?
  - Who should supply and fund back up supply for critical services that depend on electricity e.g. hospitals, fuel and water?
  - Who should pay for communications charging stations and community hubs for warmth and cooling and ice for medicines?

9.4 The negotiables and non-negotiables in resilience planning

Ausgrid needs to demonstrate how it has satisfied the AER requirements for genuine consumer engagement in the Better Resets Handbook (nature, breadth and depth and impact of engagement) and in the AER Guidance Note on resilience expenditure options as a necessary (but not sufficient) requirement of resilience expenditure. The engagement outcomes that the AER has outlined in its Guidance Note include:

- engagement on how Ausgrid's preparatory funding proposal will ensure any risks to manage extreme weather events are allocated efficiently between consumers and Ausgrid to ensure that customers do not pay twice;
- collaboration with affected communities, and other responsible entities involved in disaster management, to understand what the communities' genuine needs are to plan and prepare for, as well as recover from a natural disaster including the degree of input these stakeholders have had in developing the proposed resilience related expenditure;
- Ausgrid consulting with its wider consumer base on their preferences for bearing resilience-related costs to address localised impacts; and
- a preference to see evidence of Ausgrid's customers' willingness to pay for the proposed expenditure.

Ausgrid and the RCP believe the above engagement framework achieves all these objectives.

9 For the 2024-2029 reset engagement program Ausgrid established a panel of customers for deep deliberative consultation, this mechanism will be the means for testing whole of customer base views for this reset, but methods may vary in the future.

10

Accountability

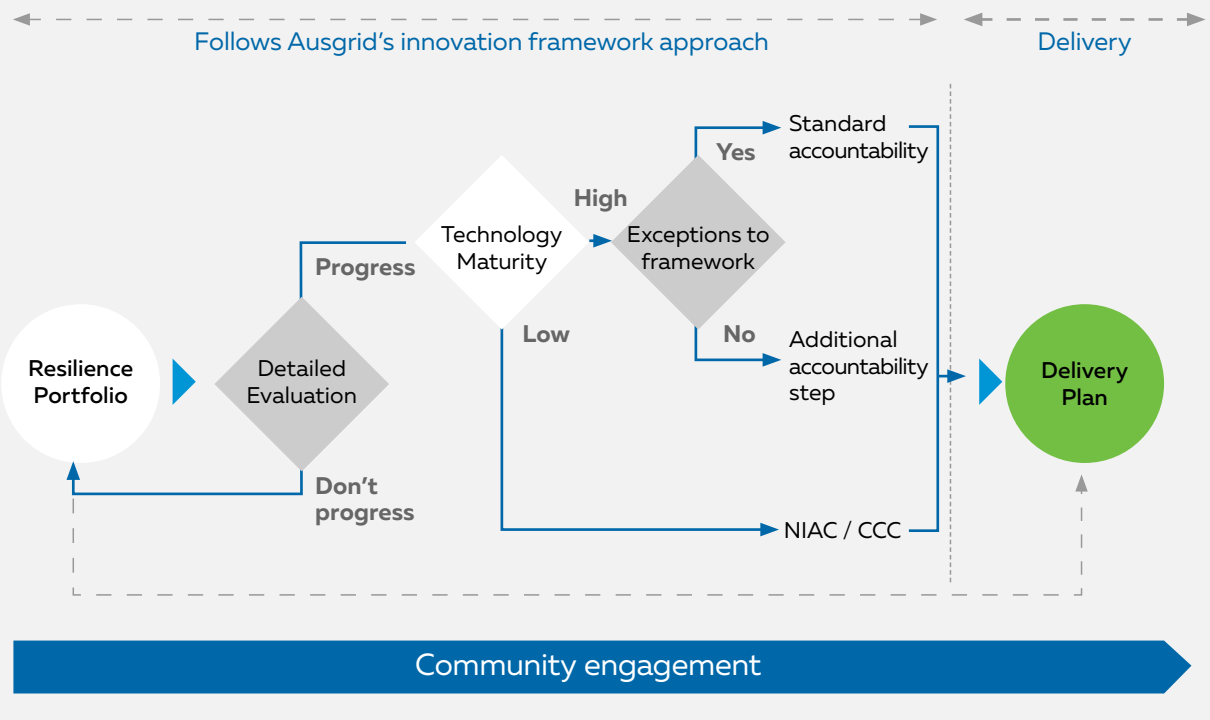
This section considers the accountability requirements that will apply to investment decisions to be made during the 2024-29 period after the conclusion of the regulatory reset process and a final determination from the AER. The purpose of the additional accountability process is to enable customers to monitor for any departures from the resilience related commitments made by Ausgrid in its regulatory proposal.

10.1 Additional accountability requirements

Ausgrid needs to be accountable for any departures in its resilience initiatives from those included in its 2024-29 regulatory proposal. This additional accountability will apply for all resilience related expenditure commitments (e.g. enhanced BAU, innovative technologies, community support services etc.) made by Ausgrid as part of its 2024-29 proposal. All resilience expenditure identified in the regulatory proposal, including new resilience related BAU initiatives will be subject to the accountability processes illustrated below, with any exceptions called out in the regulatory proposal itself or subsequently agreed by NIAC or the CCC, for example with the covered conductor program, Ausgrid would need to outline criteria to identify which parts of the program are resilience and what would fall into BAU repex programs.

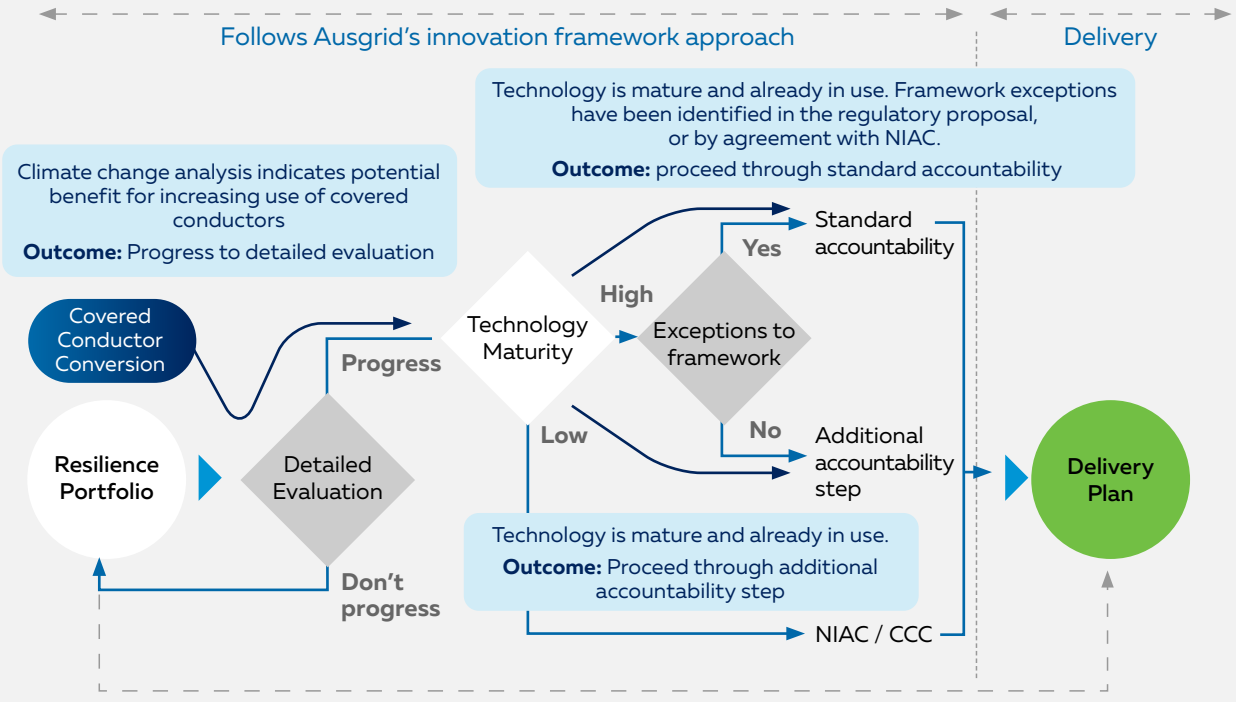
The proposed accountability requirements incorporates the role of NIAC, and its oversight of innovation, research, trials and pilots as well as oversight of enhanced BAU

Figure 10.1a: Standard example



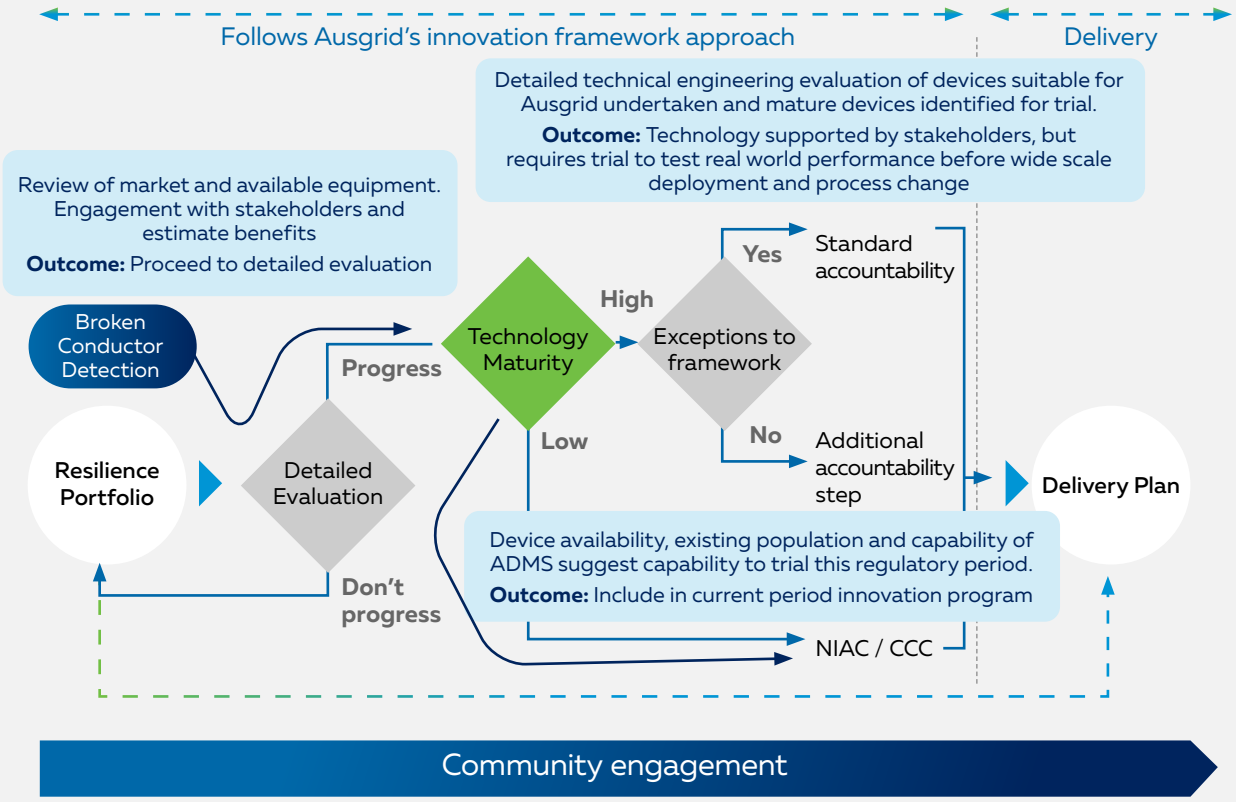
Exceptions from the additional accountability requirements include things such as BAU repex standards that pre-dated the 2024-29 regulatory proposal. All other activities and expenditures relating to resilience will be subject to these requirements.

Figure 10.1b: Mature technology example



Innovation or technologies where the benefits are uncertain will continue to be tested with NIAC's oversight either as research, trials and or pilots before they become part of BAU approaches. Ausgrid will review and report to NIAC on the effectiveness of trials of innovative solutions for future investments.

Figure 10.1c: Low maturity technology example



Ausgrid will show how the results of the PIR of the effectiveness of trials and pilots and the report on the effectiveness of activities in the 2024-29 period has shaped the resilience activities and proposed trials in the 2029-34 regulatory proposal.

10.2 Measures of success

Ausgrid will engage with the broader community on appropriate measures of success for this Framework. Measures of success will include a range of lead and lag metrics incorporating:

- stakeholder satisfaction and customer engagement outcomes;
- community preparedness; and
- network performance.

Measures of success for consideration may include Reptrack scores, engagement and satisfaction after extreme weather events, proportion of at-risk communities with resilience plans in place or under development, proportion of at-risk communities where Ausgrid has established partnerships, willingness to pay, network performance, delivery against the optimised resilience program.

In 2024-2029 Ausgrid will establish baseline measures of community expectations around the communities' involvement and engagement in developing resilience solutions.

10.3 Lessons learned

Before the end of the 2024-29 regulatory period, Ausgrid and its CCC will jointly undertake a post-implementation evaluation of this Framework and the resilience decisions made pursuant to this Framework with a long-term perspective to determine:

- What worked well?
- What could have worked better?
- How might we modify the Framework for the next regulatory cycle?
- What other themes have emerged from implementing this Framework?
- Did Ausgrid positively contribute to building community resilience?
- Was the engagement of communities and stakeholders adequate?
- How effective was Ausgrid's response (if applicable)?

The review of resilience activities undertaken during 2024-2029 needs to consider a long-term view of the changing climate. Variation in climate and extreme weather needs to be taken into account at the conclusion of each regulatory period. For example, it is possible that there will be no severe weather events in 2024-2029.

Ausgrid will invest in updated climate risk modelling as the basis for resilience funding in each regulatory period to ensure as accurate a knowledge base as possible. This could also include reviewing the accuracy of past modelling in light of events in the interim.

Contact us

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September 2022

Our Metering Services for 2024-29

for consultation

Empowering communities for a resilient, affordable and net-zero future.

Ausgrid

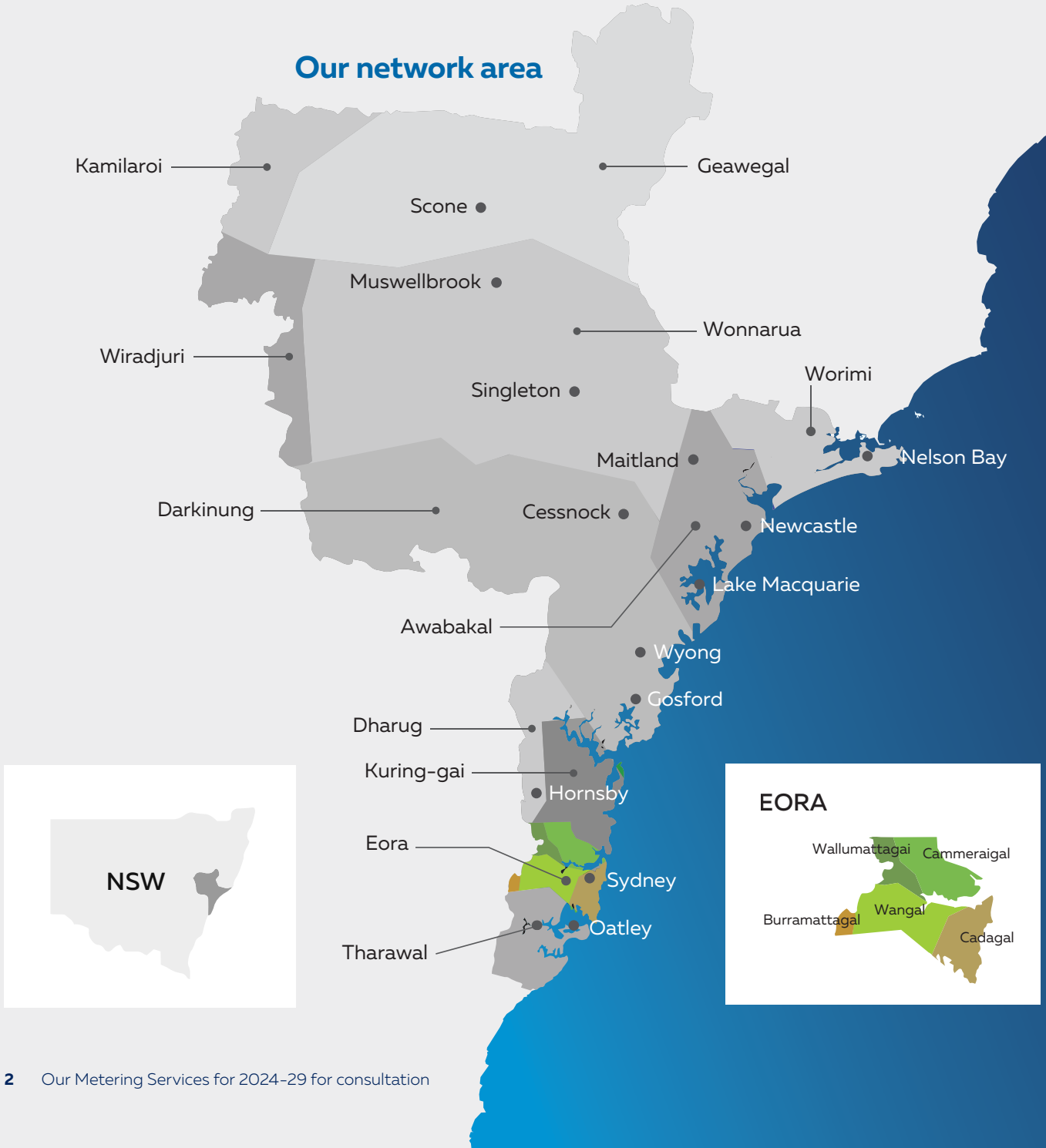
Acknowledgment of Country

We acknowledge the Traditional Custodians of the lands where the Ausgrid distribution network is located, and we pay our respects to the elders past, present and emerging.

As set out in our Reconciliation Action Plan, it is important that this recognition leads to industry wide support and understanding of the knowledge, stories, languages and experiences of Aboriginal and Torres Strait Islander peoples, as our way of paying respect, and contributing to, some of the oldest continuous cultures of the world.

Our network and operations span the traditional country of 17 languages, tribal and nation groups in Sydney, the Central Coast and Hunter regions of New South Wales. We want to lead and foster a workforce, and approach to our operations, that embraces the learnings, voices, cultures and histories of these Traditional Owners into our own organisation.

Our network area



Our vision is for communities to have the power in a resilient, affordable, net zero future

Our role in the community

Ausgrid owns and operates the network of substations, powerlines, underground cables and power poles that deliver power to communities across large parts of Greater Sydney, the Central Coast and the Hunter.

Each day we build, operate and maintain this distribution network with a focus on providing a safe, reliable and efficient energy supply.

We also provide a range of other network services to our 1.8 million customers, one of which is basic metering services – the topic of this consultation paper. We provide these metering services to the more than 1.3 million customers who have not yet installed a smart meter.

The purpose of this consultation paper

Every five years, we submit a proposal to the Australian Energy Regulator (**AER**) setting out our plans for serving our communities in the 5 years ahead, including our planned expenditure and pricing.

We must develop a proposal for the period from 1 July 2024 to 30 June 2029 (2024-29) and submit it to the AER in January 2023. We are currently engaging with our communities on our main "poles and wires" service via our Draft Plan for 2024-29, which we released for consultation on 1 September 2022.

This consultation paper focuses on our basic metering services for 2024-29 and seeks views on how we address potential equity issues that may emerge as we recover fixed metering costs from a declining customer base.

We seek feedback from all those with an interest in the metering services we deliver.

We will use this feedback to update our plans and submit our final proposal to the AER in January 2023.

Information how you can provide your feedback is provided on **page 15**.

Contents

1 Introduction

Our next regulatory period begins 1 July 2024 and ends 30 June 2029 (2024-29 period). This is set to be a time of pivotal change in the delivery of metering services.

Ausgrid was once the sole provider of meters in our network area. This changed in 2017 when policy reforms introduced a market-led rollout for all new installations, including the replacement of our existing fleet of basic meters.

We own and operate 'basic' meters while retailers are responsible for rolling out 'advanced' meters. Our meters are 'basic' because they require a person to visit them to take a recording of a customer's energy usage. Advanced meters, which retailers are responsible for, offer greater functionality and do not require a person to visit them to be read. Our evolving role in providing metering services is set out in **Appendix A**.

We expect the market-led rollout of advanced meters to accelerate over the 2024-29 period. As this happens, our legacy role in delivering metering services will decline significantly. Our current forecast suggests that the number of basic meters in our network area will decrease by more than 50%, leaving only 500,000 in use by the end of the period.

This decline will not diminish the importance of our service to those customers who continue to have a basic meter. However, it may raise issues for how we recover the costs of metering services in the 2029-34 period.

Our aim is to continue to provide a safe, reliable and affordable metering service in line with our customers' expectations, while supporting an orderly and efficient transition to advanced metering. The purpose of this consultation paper is to seek our customers' views on how we can best achieve this ambition, both in the 2024-29 period and beyond.

1.1 Our role in metering

Ausgrid provides basic metering services to customers in our network area. While customers can switch to an advanced meter through their retailer, many customers still retain their basic Ausgrid meter.

There are currently around 1.3 million basic meters in our network area (as of 1 July 2022). Our prices for these services recover the capital costs we have invested in these meters and supporting systems, and the non-capital costs we incur in reading the meters and managing metering data.

For those customers who have a basic meter, the Australian Energy Regulator (**AER**) sets the price of metering services by assessing the cost of providing the service.

1.2 Our role has evolved

While our metering base is rapidly changing, 78% of our customers have a basic Ausgrid meter, with 22% having an advanced meter. We also provide two types of basic meters: Type 5 and Type 6 (see **Figure 1** for more information about the differences between these meter types). Further detail on our role is set out in **Appendix A**.

Figure 2 summarises how the arrangements for metering have changed over time. It shows that the key date for these changes was 1 December 2017. Meters installed before that date are generally a basic (Ausgrid) meter, while customers who had a new meter installed after 1 December 2017 typically have an advanced (non-Ausgrid) meter.

Figure 2 The transformation of metering arrangements

Ausgrid provided Type 5/6 meters to customers
Before 30 June 2015

Transitional phase, customers paid upfront for their own Type 5/6 meters
1 July 2015 to 1 December 2017

New and replacement advanced meter provided by retailer
After 1 December 2017

Figure 1 Types of meters

Interval meters (Type 5)	These meters are digital. They record electricity consumption over intervals of time (e.g. 30 minutes). They typically require a site visit to download consumption data.
Accumulation (Type 6)	These meters may be electro-mechanical or digital. They only record how much electricity is consumed over time. They require a meter reader to visit a customer's property to obtain the consumption data.
Advanced meters (smart meters)	These meters are digital devices that can measure electricity usage and power quality information on a more granular scale. They can share information wirelessly to energy customers, retailers and distributors, as well as enable other remote services like disconnection and reconnection.

We have been transitioning away from the direct provision of meters, as market reforms to metering have seen our role change.

As customers transition to advanced meter offerings, they cease to receive an Ausgrid-provided regulated metering service. Accordingly, our role in providing metering services is declining as the transition to advanced meters occurs.

Our legacy metering role will continue to diminish over the 2024-29 period. As **Figure 3** shows, we expect the uptake of advanced meters will accelerate over the period – as basic meters reach the end of their useful lifespan and are replaced, and customers switch to advanced meter offerings through their retailer.

While the transition to advanced meters is ongoing, we will continue to play an important, but diminishing, role in providing metering services to customers with traditional meters and supporting the rollout of advanced meters and replacement of legacy metering.

Our focus continues to be on providing cost-effective and reliable metering services to our customers.

AEMC reforms

While the Power of Choice reforms provided the basis for contestable small customer metering, further reforms are being considered by the Australian Energy Market Commission (**AEMC**) to facilitate the further rollout of advanced meters.

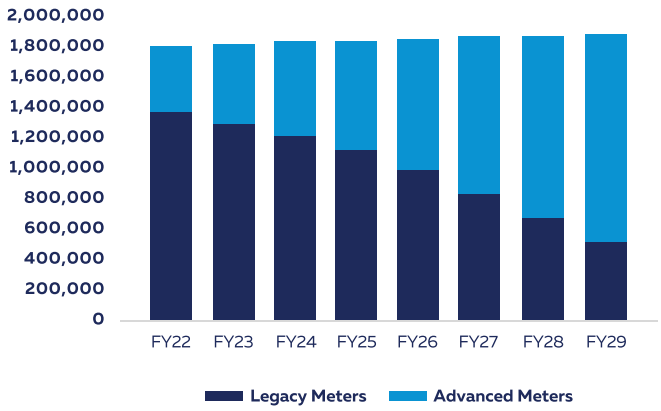
The AEMC is looking to encourage and incentivise retailers to accelerate the replacement of basic meters with advanced installations across the National Electricity Market (**NEM**).

Issues to be addressed by the AEMC as a part of this review include:

- Standardisation of advanced meter data sets that networks use to manage connections, forecasting and demand management;
- Meter replacement issues driven by the customers' current electrical installation, (eg. space, wiring and defects);
- Reviewing roles and responsibilities of participants to support the accelerated installation of advanced meters; and
- Depending on the outcomes of this review, it is possible that our basic meter number will decline faster than our current forecast over the 2024-29 period, leaving an even smaller group of customers receiving our metering services after 2029.

However, regardless of whether this decline is faster or slower than we expect, it will eventually raise issues for the way we recover our residual costs from legacy metering customers. These issues, and our current thinking on how we could address them, are outlined in the next section on fair, efficient pricing.

Figure 3 Actual and Forecast Advanced meter take-up



1.3 Community engagement

We are committed to engaging with our communities – including our customers, delivery partners (such as retailers) and other stakeholders – to help us meet their expectations.

This saw us establish a Voice of Community (**VOC**) Panel to inform our 2024-29 regulatory proposal. The VOC Panel was made up of 45 randomly selected household customers across our network who we asked: *'How should Ausgrid look to the future while being fair to today's customers?'*

In keeping with the principles set out by the VOC we committed to providing targeted and relevant information to customers as part of our engagement. We are interested in hearing from all voices in the community on a broad range of topics, including our basic metering service.

1.4 What does the rest of this paper cover

The rest of this consultation paper explains our current thinking on metering services for 2024-29, and seeks your feedback on:

- **Section 2** outlines our proposed approach to pricing and potential equity issues that may emerge in the 2029-34 regulatory period, and how we could respond to these issues;
- **Section 3** explains how you can provide feedback on these potential responses, and how we will use your feedback; and
- **Appendix A** provides further detail on our role in metering and meters on our network.

2 Fair, efficient pricing

2.1 Our plan for the 2024-2029 period

Our focus for the 2024-29 period continues to be on providing cost-effective metering services for our legacy metering customers.

Maintaining the affordability of our basic metering services is the priority for the forthcoming regulatory period, as declining metering numbers risk driving a potential increase in unit costs.

We intend to maintain our current metering pricing structure and continue to use the 'building block' approach to set our metering prices over this period, in keeping with AER guidance. The following sections outline this price structure and the 'building block' approach, then explain how we expect the key inputs to this approach to change over the period and the resulting indicative metering prices.

2.2 Fair metering charges

We seek to be fair in the way that we recover the costs of our metering services from our legacy metering customers. The cost of providing these services are not uniform for all customers because:

- If their meter was installed before 30 June 2015, Ausgrid funded the cost of the meter;
- If their meter was installed after that date, the customer paid for the meter upfront.

To reflect this difference, our current metering pricing includes two charges – a capital charge that reflects the cost of funding the meter, and a non-capital charge which reflects the cost of delivering meter reading, testing and maintenance services.

As **Figure 4** shows, we apply these charges so that customers who paid for their own meter upfront via their retailer only pay the non-capital charge, while customers with an Ausgrid-funded meter may pay both charges.

2.3 Building block costs

Our metering services are regulated via a price-cap. The AER sets the maximum prices we can charge to ensure we can earn just enough revenue to recover the costs of providing our legacy metering services. This revenue amount is calculated using a 'building block' approach and the AER's standardised models for metering services. This 'building block' approach involves calculating and adding the individual cost inputs or 'blocks' (**see Figure 5**).

Once the building blocks have been developed, the revenue required to provide metering services is then forecast to reflect declines in meter numbers and any increase in the unit cost of providing metering services. In developing our prices, we receive a regulated return on our regulated asset base, an allowance for tax and depreciation.

Further detail on key building blocks is set out below. These inputs, and how we expect them to change over the period, are explained below.

Figure 4 Applying Metering Charges

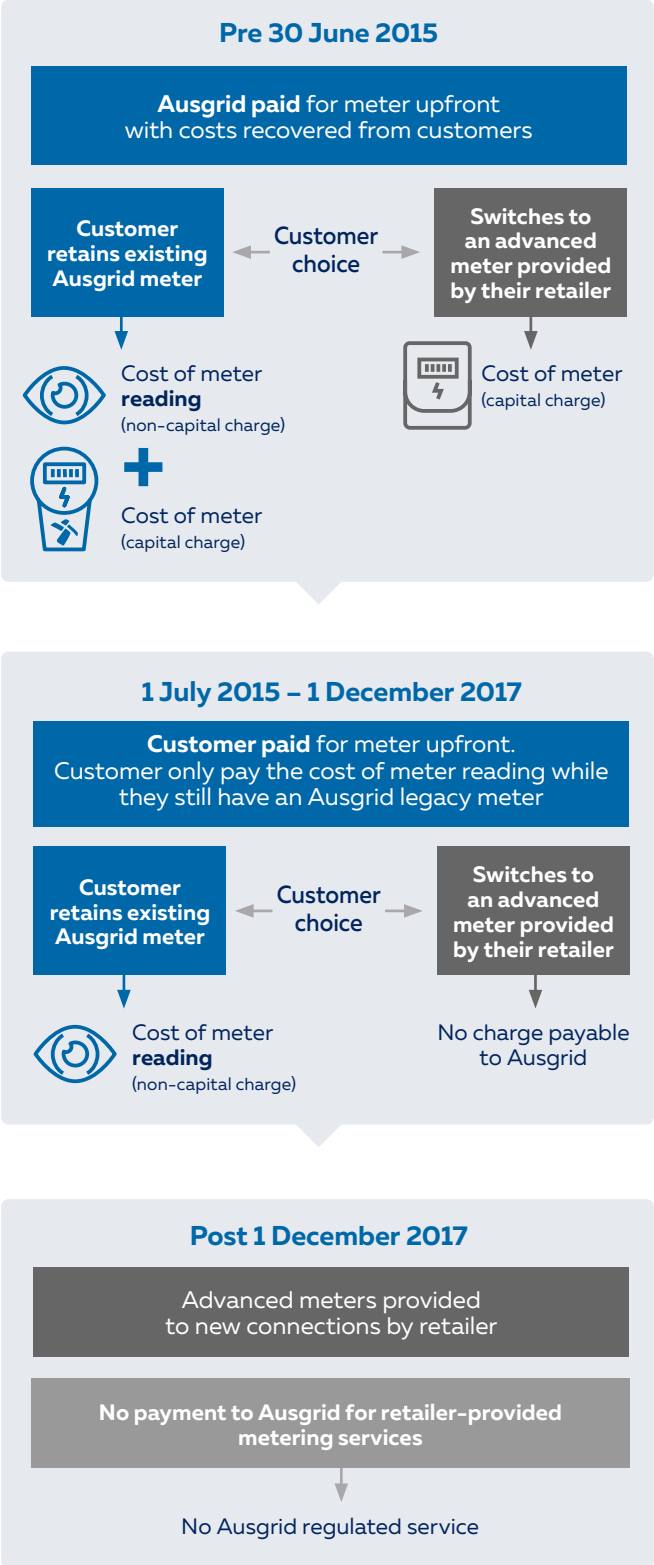
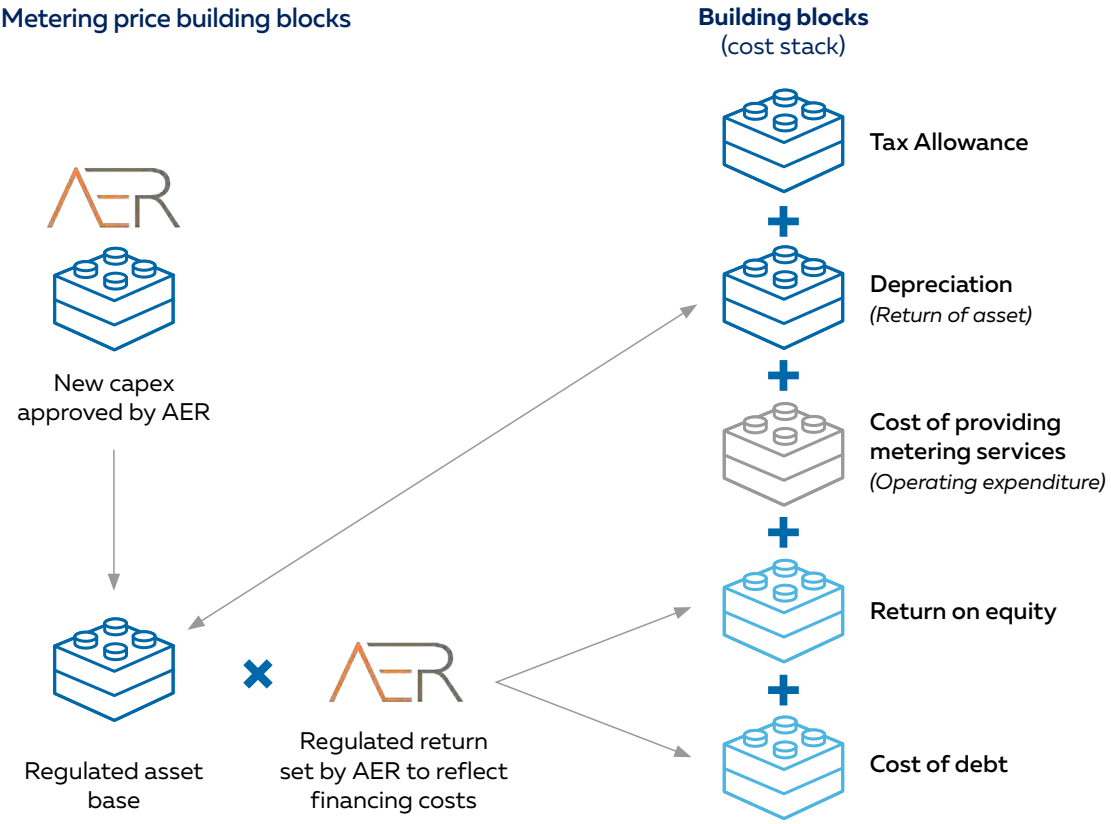


Figure 5 Metering price building blocks



Direct capital expenditure

Direct capital expenditure (**capex**) includes the costs of investing in new assets to provide metering services. Since July 2019, we have not had any direct capex for Type 5 and 6 metering. However, for the 2024-29 period this is likely to change, as investments to maintain metering information systems become necessary.

Indirect capital expenditure

We continue to incur indirect capex in the delivery of metering services. This indirect capex reflects the allocation of costs via our cost allocation methodology (**CAM**).

Indirect capex relates to the costs of assets (such as depots and fleet vehicles) used in delivering many services, including metering services. A portion of the funding costs associated with these assets will be allocated to metering services in 2024-29.

Operating expenditure

This building block reflects the operating expenditure (**opex**) associated with providing metering services over the 2024-29 period. Most of these costs are associated with performing meter reading activities. However, some relate to testing and maintaining meters to ensure compliance with national energy rules, and the processing of metering data.

We expect our opex to increase on a per customer basis over the 2024-29 period due to diseconomies of scale. That is, as the total number of basic meters in our network area declines, the unit costs of performing meter reading activities – particularly the costs associated with travelling to the meter – will increase.

Once the building block costs are developed, prices are set by applying the AER's standardised models for ACS metering services. These models include:

- Standardised Metering Capex and Opex Model;
- Standardised Metering Pricing Model;
- Roll-Forward Model (**RFM**); and
- Post-Tax Revenue Model (**PTRM**).

2.4 Diseconomies of scale

Legacy meters within our network have been declining over time. As the overall number of meters decline, the unit costs for providing metering services rises (known as diseconomies of scale).

This is because when performing meter reading activities there are several types of costs incurred as set out in **Figure 6**.

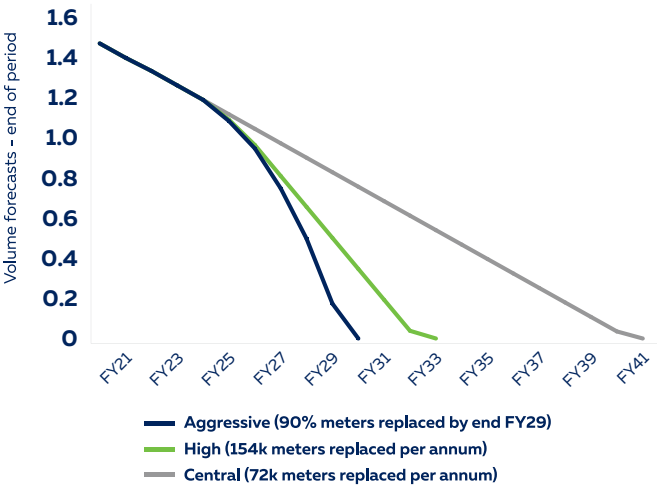
Figure 6 Metering cost components

	Costs associated with travelling to the meter
	Costs associated with reading the meter; and
	Back office costs e.g. ICT, data processing

For example, the costs associated with maintaining metering systems, whether we have 1 million or 100,000 meters are largely fixed and remain fairly constant over time. As meter numbers fall, distance between meters increases, and these costs may increase in per meter terms. The increase in unit costs associated with the decline in legacy meters is estimated and then applied to adjust our opex.

Over the forthcoming regulatory period we are forecasting that our basic meter population will decline by close to 800,000 meters, representing a reduction representing a reduction of more than 50%. This is reflected in **Figure 7** below.

Figure 7 Forecast Type 5/6 replacements



2.5 Developing prices for the forthcoming regulatory period 2024-29

Overall metering prices will continue to fall

We expect our overall metering price to decrease in the first year of the 2024-29 period and continue to fall over the period. This is because the capital charge will decline as the metering asset base decreases. Our current forecasts indicate that for customers on residential non time-of-use (**non TOU**) tariffs, the capital charge will:

- Decline by 24% in 2024-25;
- Be set at a very low level or zero in 2028-29, when the value of our metering asset base will be almost fully depreciated.

However, the non-capital charge will increase over the period, due to the diseconomies of scale discussed in the previous section.

Figure 8 shows our current metering prices for a sample of tariffs, compared to the indicative prices in the first year of the 2024-29 period.

Figure 8 Indicative prices $ nominal

Tariff	Tariff Name	Component	$ FY24	$ FY25	% change
EA010	Res Non ToU	Non capital	12.60	13.68	9%
EA010	Res Non ToU	Capital	15.29	11.59	-24%
EA010	**Res Non ToU**	**Total**	**27.90**	**25.27**	**-9%**
EA025	Res ToU	Non capital	32.57	35.36	9%
EA025	Res ToU	Capital	17.03	12.90	-24%
EA025	**Res ToU**	**Total**	**49.60**	**48.26**	**-3%**
EA050	Small Bus Non ToU	Non capital	13.00	14.11	9%
EA050	Small Bus Non ToU	Capital	23.38	17.72	-24%
EA050	**Small Bus Non ToU**	**Total**	**36.39**	**31.84**	**-13%**
EA225	Small Business ToU	Non capital	32.27	35.03	9%
EA225	Small Business ToU	Capital	16.25	12.31	-24%
EA225	**Small Business ToU**	**Total**	**48.52**	**47.35**	**-2%**

2.6 Legacy meter customers and residual capital recovery

As previous sections have noted, the number of basic meters is expected to decline over the 2024-29 period. The rate of decline is difficult to predict, as it will be influenced by the outcomes of the AEMC's ongoing review of the metering regulatory framework.

However, regardless of this rate, there will eventually be only a small group of customers on basic meters in our network area. These customers may not switch to an advanced meter until their meter fails or may face other barriers to switching such as the cost involved or lack of knowledge about the offers available.

If we maintain our current pricing approach, this will make it difficult to set fair and affordable prices for these customers.

While we are not expecting these affordability issues to become significant until after the 2024-29 period, we are considering options to address them now, to facilitate an orderly transition to smart meters. We are seeking feedback from our communities on how and when we should address these issues.

2.7 Options for addressing equity issues

In developing potential options for addressing equity issues, we have considered the guidance on fairness articulated by the Voice of Community Panel. In our engagement on our Draft Plan for 2024-29, this panel stated that they understand fairness to mean:

"The cost of the service is spread throughout the network to share the financial load evenly regardless of the basic cost."

There are two cost categories for which a smaller set of customers may be required to pay an increasingly larger share, as more customers leave our legacy metering service. These are, first, our fixed operating costs which do not vary regardless of how many metering customers we have and, second, indirect capital costs (property, ICT, fleet) which are allocated to our metering line of business in accordance with our AER-approved cost allocation methodology.

In line with the Voice of Community Panel's views, we have identified two options that would help spread the financial load of our declining metering business more evenly. We could:

Classify legacy metering as a standard control service at the start of the 2029-34 period. This would involve adding the recovery of metering opex and indirect capex to general network charges from FY30 onwards; or

Expense any capital expenditure incurred over the course of the 2024-29 period. This would involve the immediate recovery of indirect capex in the 2024-29 period when the number of metering customers is still large enough to not materially impact price.

If the first option is pursued the remaining metering asset base will be recovered from all Ausgrid customers, noting that impact on bills is likely to be small. While the financial impact of sharing the cost across many customers is likely to be limited, it may be unfair to expect customers to fund legacy costs associated with metering equipment they do not use.

The second option would involve Ausgrid expensing, and therefore recovering any, capex incurred over the 2024-29 period. This would bring forward the recovery of this expenditure and limit the potential for it to disproportionately fall on a small number of customers as our meter population declines. However, it would not solve the issue that a small number of customers would face significant opex costs from the 2029-34 period onwards.

When should we act to address equity issues?

As previously noted, we do not expect affordability to become a significant issue until after 2029. But this issue may emerge in the 2024-29 period, depending on the outcomes of the AEMC's review and the pace of meter replacement. For this reason, we are considering setting a trigger for taking action. For example, if we were to adopt the first option outlined above, we could adopt a threshold based on:

- **Prices** – that is, when the total charge goes over a certain level, the metering asset base is rolled into the RAB in the subsequent regulatory period e.g. an increase of 50%;
- **Asset base value** – that is, when the metering asset base falls to a specified value, it is rolled into the RAB in the subsequent regulatory period e.g. it falls below $10 million;
- **Customer numbers** – for example, when the number of legacy metering customers falls below a specific level e.g. 100,000, the metering asset base is rolled into the RAB in the subsequent regulatory period.

3 Providing feedback on this paper

We welcome written feedback to this document by 7 October 2022. We will also schedule a forum to discuss and share feedback in September and October 2022.

Over the forthcoming regulatory period the number of customers receiving metering services from Ausgrid is forecast to materially decline. This may have equity impacts on those customers who continue to use legacy meters.

3.1 Consultation questions

Consultation question 1:

- Should Ausgrid take action to address emerging equity issues arising from the recovery of metering costs?

Consultation question 2:

- If so, how should we address these issues?

Consultation question 3:

- And at what point should we address these issues?
  - When the number of legacy customers falls below a specific level?
  - When the decline in metering customers results in prices increasing above a specific level?
  - When the value of the underlying Metering Asset Base falls below a specific value?

3.2 How we will use your feedback

We will incorporate customer feedback into our approach to addressing the issue of declining meter numbers, including the definition of any potential threshold for taking action to mitigate any adverse cost implications on legacy customers. Customer feedback will also shape any approach to addressing this issue and any action we might take to address it.

Figure 9 sets out the timetable our 2024-29 regulatory reset. **Figure 10** outlines how you can find out more and share your views on this paper.

Figure 9 Regulatory proposal timeline

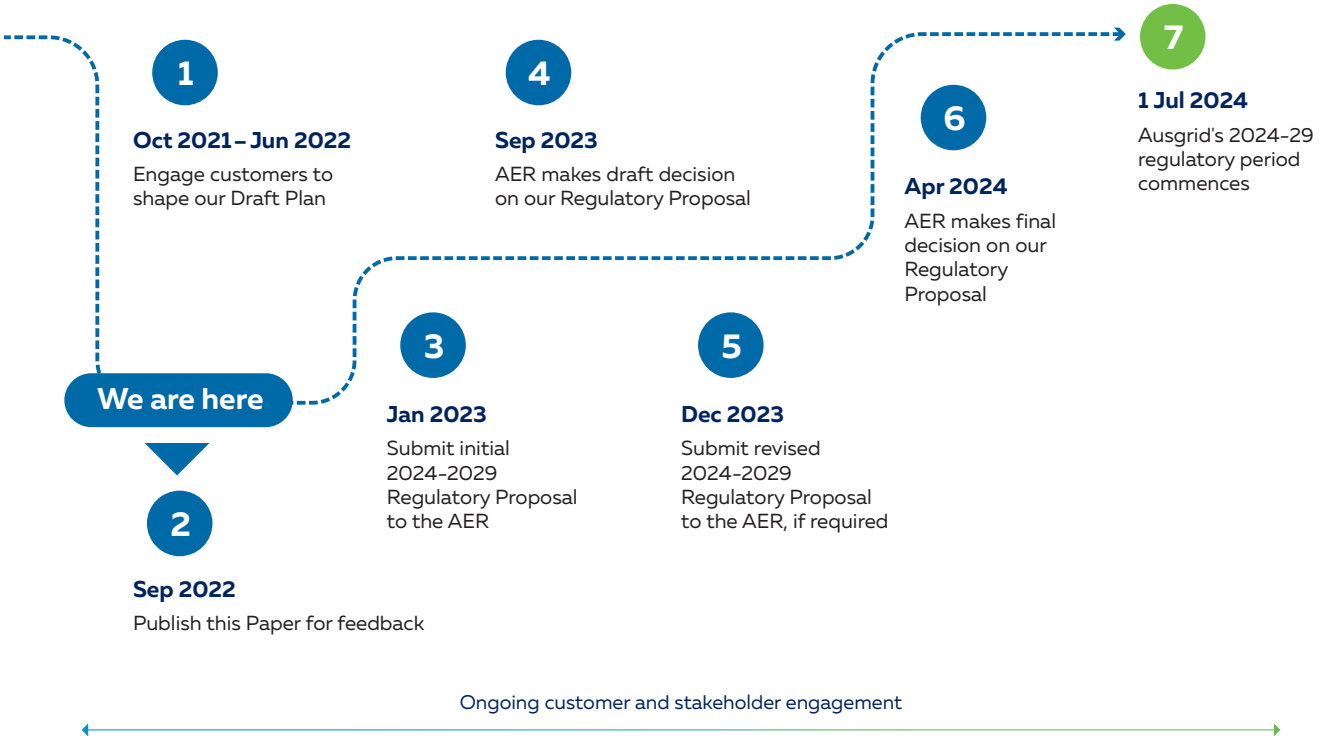


Figure 10 Opportunities to find out more and share your views on our Metering consultation paper

Commercial and industrial customers:

- Visit YourSay/large-business-customers to submit your feedback

Household or small business customers:

- Visit YourSay/households or YourSay/small-business to submit your feedback
- Play our 'Be the Boss' game to let us know how you would get the balance right if you were the boss of Ausgrid

Retailers:

- Register for our forum at **9am on 20 September 2022**
- Visit YourSay/retailers to submit your feedback
- Visit our dedicated retailer webpage Ausgrid.com.au/retailers

Appendix A

Ausgrid is an initial metering coordinator

Following the implementation of the AEMC's reforms in December 2017, Ausgrid was appointed an initial Metering Coordinator (MC). As an initial MC, we are responsible for acting as the metering coordinator for our legacy metering customer base.

This means we continue to arrange for the reading, testing and maintenance services for meters owned by Ausgrid. This includes meters installed by Ausgrid, our agents or predecessor organisations.

When a customer's legacy meter is replaced by advanced meters, we cease to be their MC and they will transition to an MC appointed by the customer's retailer.

What is a metering coordinator?

An MC is a person appointed under the National Electricity Rules who coordinates the provision of metering services at a connection point. An MC must be appointed for every connection point so that all customers have access to a metering service.

What is the role of the metering coordinator?

MCs are responsible for the appointment of appropriately accredited metering service providers to conduct the following tasks:

- Provision, installation and maintenance of a metering installation;
- Collection, processing, retention and delivery of metering data; and
- Management of access to and security of the metering installation.

What is the role of retailers in providing metering services?

For residential and small business customers with an advanced meter, their energy retailer is responsible for appointing their MC. The MC is then responsible for appointing an accredited service provider who will provide, install and maintain their meter, as well as arrange for the collection of metering data and managing access to the meter. These responsibilities are summarized in the **Figure 11** below.

Figure 11 Responsibilities of Ausgrid and retailers

Activity	Ausgrid	Retailer
Installation of new metering equipment	✗	✔
Remote meter reading of advanced meters	✗	✔
Manual meter reading of legacy accumulation and interval meters	✔	✗
Testing of advanced meters	✗	✔
Testing of legacy accumulation and interval meters	✔	✗
Replacement of non-compliant or faulty meters and interval meters	✗	✔
Replacement of non-compliant or faulty advanced meters	✗	✔
Metering upgrades e.g. new solar installation	✗	✔

Meters on our network

Types of meters

There are typically three different types of meters on our network – accumulation meters, interval meters and advanced meters.

1. Accumulation meters

Accumulation meters are meters that keep track of total electricity usage. This means that customers who have these meters are charged the same amount for the electricity that they use, regardless of when they use it.

They are also known as flat rate meters or Type 6.

Accumulation meters may be digital or electro-mechanical. Digital accumulation meters have a digital display. Electro-mechanical accumulation meters may either have a dial display or a cyclometer display.

To read an accumulation meter, the meter reader will sight the meter and type it in to their handheld computer, that then sends the data directly to our systems. The reading is then validated and sent on to a customer's retailer to allow them to calculate a customer's bill.

2. Interval meters

Interval meters record how much electricity is used every 30 minutes. This means that different electricity rates for usage can be applied for different times of the day, depending on the tariff that a customer has signed up to with their electricity retailer.

Interval meters are also known as time of use meters or Type 5 meters.

All interval meters are digital. The display of an interval meter is programmed to show the date and time as well as the total kilowatt hours (kWh) used.

To read an interval meter, the meter reader uses an optical probe to download the 30-minute interval data into a handheld computer. This information is then sent to our systems, validated and then sent on to a customer's retailer to allow them to calculate a customer's bill.

3. Advanced meters

Advanced meters, also known as smart meters, are remotely read by the retailer appointed as the customer's metering data provider. They record a customer's energy use in the same way as interval meters, that is, based on how much energy is used every 5 or 30 minutes (depending on when they were installed).

Advanced meters have many benefits for the customer and for the energy system as a whole. For example, customers with an advanced meter can take up pricing offers that give them more power to control their electricity bills by being flexible about when they use electricity or a specific electrical appliance. They also help customers and the energy system realise the value from new technologies like rooftop solar, battery solar and energy efficient appliances.

Since 1 December 2017, any new or replacement meters for households or small business must be smart meters, installed by a provider appointed by an electricity retailer, not Ausgrid. For further information regarding the other functions and services provided by smart meters, customers should contact their retailer.

Contact us

For more information, or to make a submission go to:
YourSay.Ausgrid.com.au

September 2022

Our Ancillary Network Services for 2024-29

for consultation

Empowering communities for a resilient, affordable and net-zero future.

Ausgrid

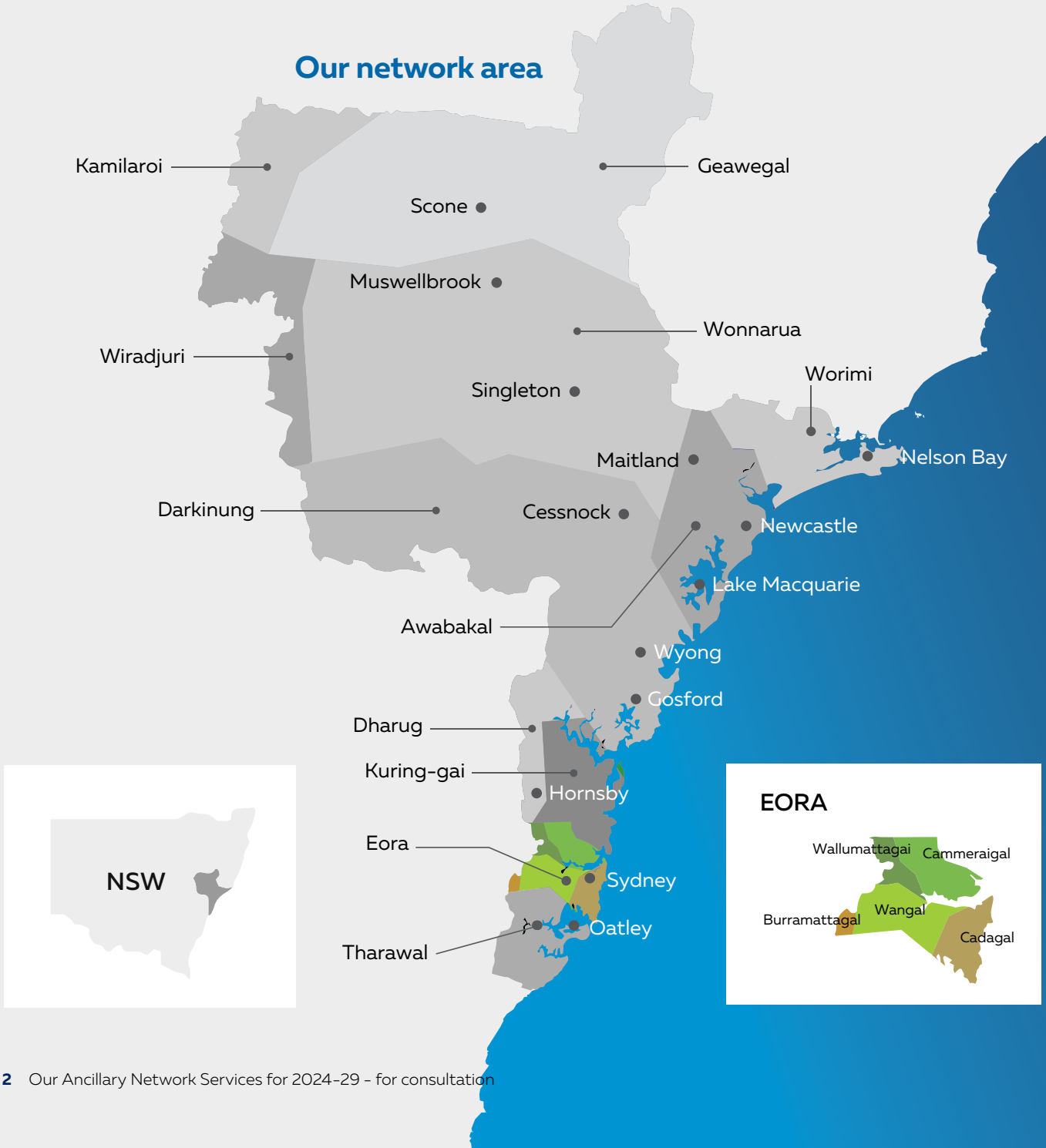
Acknowledgment of Country

We acknowledge the Traditional Custodians of the lands where the Ausgrid distribution network is located, and we pay our respects to the elders past, present and emerging.

As set out in our Reconciliation Action Plan, it is important that this recognition leads to industry wide support and understanding of the knowledge, stories, languages and experiences of Aboriginal and Torres Strait Islander peoples, as our way of paying respect, and contributing to, some of the oldest continuous cultures of the world.

Our network and operations span the traditional country of 17 languages, tribal and nation groups in Sydney, the Central Coast and Hunter regions of New South Wales. We want to lead and foster a workforce, and approach to our operations, that embraces the learnings, voices, cultures and histories of these Traditional Owners into our own organisation.

Our network area



Our vision is for communities to have the power in a resilient, affordable, net zero future

Our role in the communities we serve

Ausgrid owns and operates the network of substations, powerlines, underground cables and power poles that deliver power to communities across large parts of Greater Sydney, the Central Coast and the Hunter.

Each day we build, operate and maintain this distribution network with a focus on providing a safe, reliable and efficient energy supply.

We also provide services to individual customers on an 'as needed' or 'customer requested' basis. This range of services – collectively known as Ancillary Network Services (**ANS**) – is the topic of this consultation paper.

The communities we serve include our 1.8 million household and businesses customers, and all those who rely on and benefit from their energy supply. They also include our delivery partners – such as energy retailers, councils and accredited service providers (**ASPs**) – as well as customer advocates and government agencies.

The purpose of this consultation paper

Every 5 years, we submit a proposal to the Australian Energy Regulator (**AER**) setting out our plans for serving our communities in the 5 years ahead, including our planned expenditure and pricing.

We must develop a proposal for the period from 1 July 2024 to 30 June 2029 (**2024-29**) and submit it to the AER in January 2023. We are currently engaging with our communities on our main 'poles and wires' service via our Draft Plan for 2024-29, which we released for consultation on 1 September 2022.

This consultation paper focuses on our ANS for 2024-29, and outlines what we are hearing through our engagement on these services, and our current thinking on how we might respond.

We seek feedback from all those with an interest in the ANS we deliver. We will use this feedback to inform the proposal we submit to the AER in January 2023.

Information how you can provide your feedback is provided on **page 18**.

Contents

1 Introduction

1.1 What are ANS?

ANS are a diverse range of services that our customers and partners request on an as-needed basis. For example, they may only be needed when a customer is making changes to their property or their connection to our network.

We currently provide more than 100 distinct ANS, which fall into 14 broad categories (**Figure 1**).

Figure 1 Our ancillary network service categories[1]

- Metering and related network services
- Design services
- Connection application services
- Network commissioning and decommissioning
- Access permits, oversight and facilitation
- Notification of arrangements
- Network related property services
- Network safety and security
- Inspection services
- Authorisations of ASPs
- Consultancy and review services
- Training
- ASP material sales
- Lighting solutions (security lighting)

1 Notification of arrangements refers to the provision of written notification to councils confirming necessary arrangements have been made to supply electricity to a development. Training refers to network related access/compliance training for ASPs.

1.2 Who uses ANS?

Most of our customers do not use ancillary network services frequently, if at all. In 2021-22, we provided ANS to around 13,300 individual customers, or around 0.7% of our total customer base of 1.8 million. The number of distinct ANS we provided in the same year numbered around 670,000.

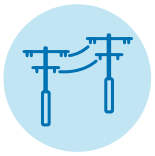
In most cases, ANS are requested by our delivery partners on behalf a customer – especially by energy retailers and accredited service providers (ASPs, **see Figure 2**). Where this is the case, our fee for the service is ultimately passed on to this customer. Some large customers also request ANS.

Figure 2 Accredited service providers

ASPs perform contestable work on our distribution network. There are 3 levels of ASPs, each of which is accredited to do different work:

ASP 1 –

constructs new or makes changes to the existing 'poles and wires' network



ASP 2 –

completes service wire and cable connection work

ASP 3 –

designs the 'poles and wires' network

Some of our partners and large customers interact with us regularly to request ANS. For example, our ASP 1 and ASP 3 partners frequently request ANS. Retailers also frequently request certain ANS on behalf of household and small business customers – for example, services related to a customer's meter.[2]

1.3 Our engagement on ANS to date

For the 2019-24 period we made extensive changes to our ANS – including simplifying our fees for these services to better reflect how we deliver them and reducing the number of distinct services from 148 to 108.

For the 2024-29 period, we are reviewing our list of services and fees again, to ensure they align with our customers' and partners' needs, are fair and transparent, and reflect our costs to provide the service. Engaging with our communities and listening to their feedback is an important part of this process. We are keen to hear how they feel about our ANS and our delivery of these services, and where we need to improve.

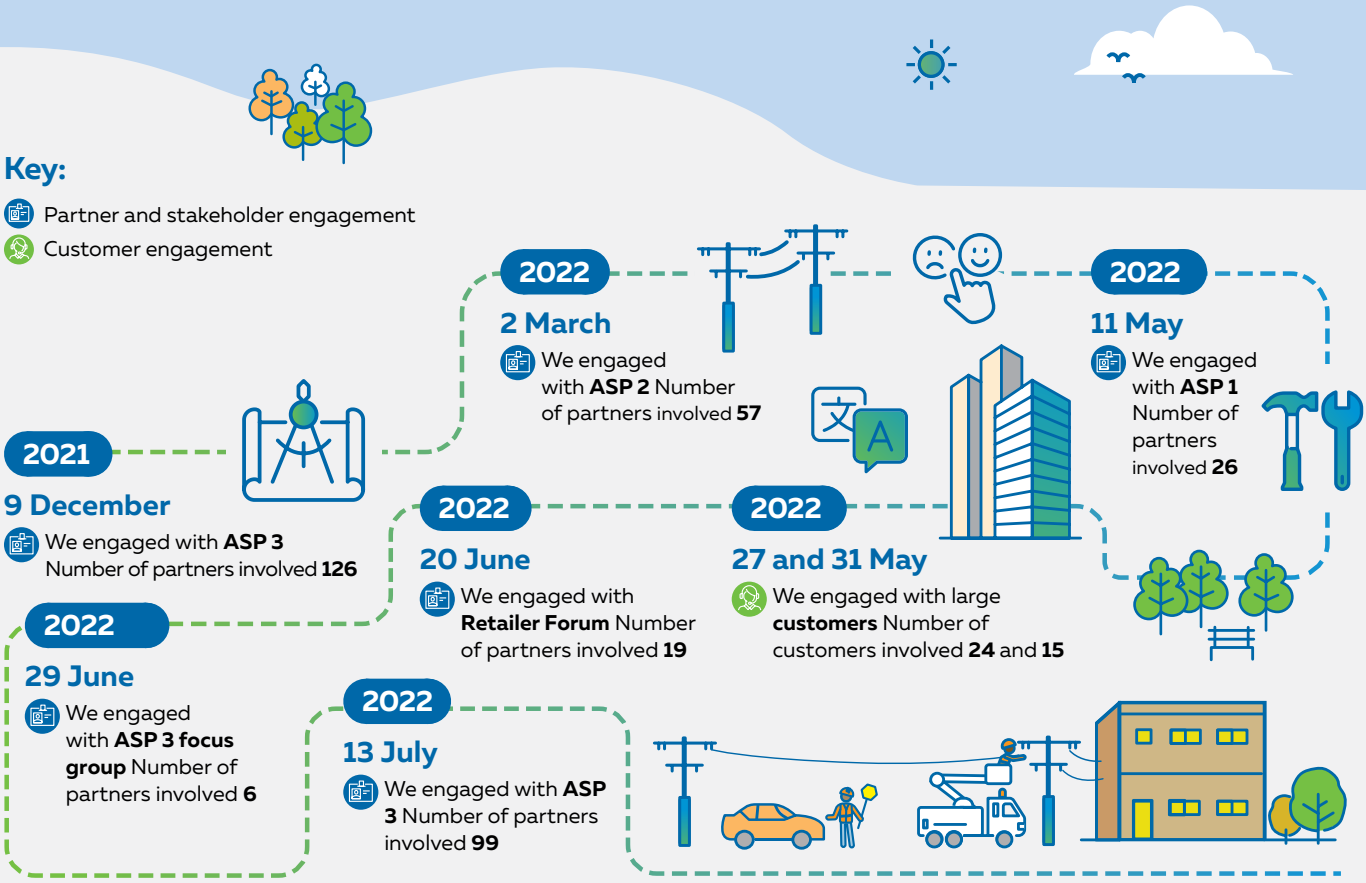
As **Section 1.2** discussed, most of our customers rarely if ever use our ANS. And if they do, the service is often requested by a retailer or ASP on their behalf. This makes it difficult to engage with the customers who ultimately pay for and benefit from these services. For this reason, we are focusing our engagement on our customers and partners who regularly request ANS.

A summary of our engagement to date is shown in **Figure 3**.

2 We provide ANS including special meter reads and disconnection/reconnection to accumulation and interval meters installed on the network. These meters are being replaced by advanced meters, which means the volume of these services will reduce over the 2024-29 period.

Figure 3:

Our ANS engagement journey to date



Glossary ▪ **ASP** Accredited service provider.

Ausgrid

1.4 What does the rest of this paper cover

The rest of this consultation paper explains our current thinking on our ANS for 2024-29, and seeks your feedback:

Section 2 outlines what we are hearing through our engagement on ANS, and our potential responses

Section 3 explains how you can provide feedback on these potential responses, and how we will use your feedback

Appendix 1 provides a full list of our current ANS and the changes we are considering for the 2024-29 period

2 What we are hearing and our potential responses

In our engagement on ANS to date, we have heard that the customers and delivery partners who interact with us regularly on ANS want us to improve our service delivery. They want the experience of requesting an ANS and moving through the process required to get the job done to be simpler, easier and more efficient. Price certainty is also important to them – and they want this certainty as early in the process as possible.

In response to this feedback, and our ongoing review of our current ANS and fees, we are considering making a range of changes to improve our services and service delivery in this area.

We think these changes will make our ANS pricing more visible and transparent, our list of ANS and associated fees simpler and easier to understand, and our processes more efficient.

Figure 4 outlines the specific feedback we have heard to date and what we are considering in response. The sections that follow provide more information on the changes we are considering in relation to our ANS pricing and key pricing components.

Figure 4 What we are hearing on our ancillary network services, and what we are considering in response

	What we have heard to date...	We are considering...	For our customers, this would mean...
Pricing (Large customers, ASPs, Retailers)	**Price certainty is important**	Reviewing the ANS fee list and identify where quoted fees could be converted to fixed fees	ANS prices are more accessible and transparent, and total costs known earlier in the process
	For new connections, indicative costs of the whole job should be provided at an earlier stage in the process	Investigating the possibility of providing 'typical' average costs as well as a low to high range for common types of connection projects, prior to the official quote stage	
	Individual service elements included in our quotes should be more accurate and comprehensive of all costs – including overtime hours and rates if overtime is expected	More frequent review of completed jobs to better inform assumptions and improve accuracy for future quotes	
	The list of ANS fees should be simpler and more transparent	Proposing that some fees are removed or combined (see **Figure 8** for more detail) Publishing the ANS fee lists on our website where links to ANS are provided Publishing customer/partner specific listings of ANS on our website, rather than only one full list Updating ANS descriptions and definitions so they are clearer	Shorter price lists that include only the ANS relevant to them, making them simpler and easier to understand Clearer service descriptions, so it is easier to understand which fees may apply to different situations
Service delivery (ASP 3)	**For customer-funded contestable projects, the connection process should be made easier**	Creating dedicated strategic engagement resources to work with large businesses (building on the creation of a dedicated inbox for technical connection enquiries in FY22) Migrating service delivery onto a central CRM platform to enable ANS delivery progress to be visible to the customer, improve communications, and provide a choice for digital self-service options Improving our customer service metrics related to the delivery time for these projects	A simpler and easier process for customer-funded contestable projects, leading to: • Improved service delivery • Quicker response times • Better visibility of progress • Fewer cancellations of scheduled outages for contestable connections and asset relocations
	ASP 3s should have direct access to our network data at no additional cost – particularly technical data for new connections (substation rating and maximum demand) – like offered by other distributors	Replacing our current network data platform (Web GIS) to improve the functionality and enable us to provide partners with different levels of access to data	ASP 3s would be able to directly access specific network data, when they need it, resulting in cost and time savings

2.1 Potential pricing changes

The AER determines the maximum price we can charge for each ANS for the first year of the 5-year regulatory period, and how we may change this price over the remaining 4 years. The maximum price only includes the costs the AER considers to be reasonable.

We are not yet in a position to forecast our costs for the 2024-29 period. However, we are considering some changes in the structure of our prices for some services.

We currently provide 108 distinct ANS with either a fixed or quoted price[3] (**Figure 5**). Where feasible, we provide both a fixed and quoted fee for a service. In these cases, the fixed fee applies to jobs deemed 'simple' (based on the time typically required), and the quoted fee applies to 'complex' jobs.

Figure 5 Fixed and quoted fees

Fixed fees	• Are applied to services where delivery involves a consistent level of effort each time (e.g. special meter reading) • Are based on the average time required to deliver the service and the hourly rates for each category of Ausgrid staff involved in delivery
Quoted fees	• Are applied to services where the delivery time varies significantly, depending on the size and complexity the work involved (e.g. complex access permits) • Are based on the estimated time required to deliver the service, and the labour rates and estimated hours for each category of Ausgrid staff involved in delivery

Our aim is to have an appropriate mix of fixed and quoted fees to provide price certainty for as many ANS as possible, while also allowing us to fairly recover the costs of complex jobs that require differing levels of effort. As a result, for the 2024-29 period, we are considering introducing a small number of new ANS and increasing the proportion of services for which a fixed fee is offered.

Overall, we are considering having 112 discrete ANS – an increase of 4 compared to the current number. Of these services, 67 would have a fixed fee and 44 a quoted fee. This increases the proportion of fixed fee services from 52% to 60%. The fee for ASP material sales would continue to be based on material price plus overhead margin.

Figure 8 summarises the ANS fee changes we are considering and the reason for these changes. **Appendix 1** provides the full list of the ANS we are considering for 2024-29, highlighting the changes relative to the current list.

Consultation question 1:

- Have we got an appropriate mix of fixed/quoted fees?

3 We also offer ASP material sales. The price of this ancillary network service is based on the material purchase price plus an overhead margin to cover additional costs including storage and handling expenses.

2.2 Potential increase in labour rates

Almost all ANS fees are based on labour rates. As part of its determination process, the AER reviews the reasonableness of these labour rates, including benchmarking them against the rates used by other network businesses and the wider industry.

Figure 6 shows the hourly labour rates currently used in calculating our maximum fees. These rates are inclusive of on-costs and overheads. **Figure 7** shows the adjustments for on-costs[4] and overheads.[5]

Figure 6 Labour rates used for ANS fees in 2022-23

Labour classification	Hourly labour rate (ex GST) $
Administration (R1)	114.69
Technical specialist (R2)	172.02
Engineer/Senior Engineering officer (R3)	215.03
Field worker (R4)	165.78
Senior Engineer (R5)	236.52
Engineering Manager (R6)	286.58

Figure 7 Shared cost adjustment factors included in hourly rates for ANS fees in 2022-23

Labour classification	On-costs %	Overheads %
Administration (R1)	52.23	53.7
Technical specialist (R2)		52.4
Engineer/Senior Engineering officer (R3)		62.9
Field worker (R4)		84.4
Senior Engineer (R5)		50.8
Engineering Manager (R6)		54.9

As **Section 2.1** noted, we have not yet forecast our costs for providing ANS over 2024-29. However, we are seeing significant cost pressure on labour rates, driven by labour shortages in the utilities sector. These pressures are expected to continue through the 2024-29 period, driven by 2 main factors:

- Workforce shortages associated with Australia's closed borders during the first years of the COVID-19 pandemic; and
- Increased demand for skilled labour caused by high levels of investment in the utilities sector; electricity-related engineering construction is forecast to be 48% higher in 2029 than 2021.[6]

In light of this, we think our ANS labour rates are likely to increase in the 2024-29 period. Together with the other NSW network businesses – Endeavour Energy and Essential Energy – we have obtained an independent review of ANS labour costs. The review indicates that some of our labour rates are below the median for comparable skills in NSW.

Consultation question 2:

- What should we consider when proposing our labour rates for the 2024-29 period?

2.3 Overtime rates

Currently the overtime rate is 75% above the normal labour rate, based on a simple average of time and a half and double time. The overtime rate applies for work outside of 7:30am and 4:30pm on working days, when the work outside these hours is requested by a customer or for reasons outside of our control such as road occupancy license requirements[7] for high traffic roads.

We are not considering changes to the way we apply overtime rates for work delivered after hours.

Consultation question:

- Do you have any feedback on the approach to charging for overtime work?

4 On-costs represent additional costs of labour to the business including leave entitlements (annual leave, long service leave, sick leave and public holidays) as well as other labour related costs such as superannuation, workers compensation and payroll tax. The on-cost percentage is applied to an average 'raw' (salary paid) labour rate.

5 Overheads represent indirect costs attributed to providing a service including supervisory and management costs, customer service and billing, communications and information technology, property and fleet costs and other corporate costs such as finance and planning. The overhead percentage is applied to a combined 'raw' labour rate and on-cost total.

6 BIS Oxford Economics, Electricity-Related Labour, Materials & Land Escalation Forecasts To 2028/29, Preliminary Report, p 3.

7 Road occupancy consists of any activity likely to impact on the operational efficiency of the road network. Road occupancy licences for State roads within the Sydney region are managed and issued by the Transport Management Centre on behalf of Roads and Maritime Services (**RMS**) or by RMS in other regions.

Figure 8 Possible changes to list of ANS and fee type

Service	Change	Reason	Fee type
Metering and related ANS			
Distributor arranged outage for purpose of replacing metering – simple complete	Combine with distributor arranged outage for purpose of replacing metering – site visit only	Simplify list and increase transparency of total cost. A site visit fee is charged in conjunction with simple complete fee	Fixed
Type 5/6 meter test	Change from quoted fee to 2 fixed fees – a lower fee for simple and a higher fee for complex	Improve transparency and price certainty	Fixed
Facilitation of metering-related works supporting advanced meter roll-out	New service and fee	Recover costs of additional activity expected for DNSPs following AEMC review to facilitate advanced meter roll-out	Quoted
Distributor arranged outage for purpose of replacing metering – additional activities	New service and fee	Recover costs of other tasks relating to distributor arranged outages for metering not covered by the specific services now listed as fixed fees	Quoted
Distributor arranged outage for replacing a meter – additional charge where requested outside normal business hours (weekday)	New service and fee	Recover higher costs of outages requested by the customer after normal business hours on weekdays. A fixed fee is proposed which will be a better financial outcome for customer than applying overtime rate	Fixed
Distributor arranged outage for replacing a meter - additional charge where requested outside normal business hours (weekend)	New service and fee	Recover higher costs of outages requested by the customer outside normal business hours on weekends. A fixed fee is proposed which will be a better financial outcome for customer than applying overtime rate	Fixed
Disconnection visit (site visit only)	Change from quoted fee to fixed fee	More price certainty	Fixed
Disconnection completed	Change from quoted fee to fixed fee	More price certainty	Fixed
Disconnection visit (disconnection completed - technical/ advanced)	Change from quoted fee to fixed fee	More price certainty	Fixed
Type 5 and 6 CT testing	Change from quoted fee to fixed fee	More price certainty	Fixed
Type 5 and 6 CT recovery	Change from quoted fee to fixed fee	More price certainty	Fixed
Distributor arranged outage for purpose of replacing metering –no access	Update description and change from quoted fee to fixed fee	More clarity on what the service is for; more price certainty	Fixed
Distributor arranged outage for purpose of replacing metering – not completed – 2nd visit	Update description and change from quoted fee to fixed fee	More clarity on what the service is for; more price certainty	Fixed
Distributor arranged outage for purpose of replacing metering – complex complete	Update description and change from quoted fee to fixed fee	More clarity on what the service is for; more price certainty	Fixed

Continued

Service	Change	Reason	Fee type
Network tariff change request (bulk transfer requests requested by customer)	Update description and change from fixed fee to quoted fee	A fixed fee per National Metering Identifier (**NMI**) transferred is not reflective of cost for a bulk transfer. A quoted fee for bulk transfers based on estimated hours of effort is a better outcome for customer	Quoted
Reconnection outside normal business hours	Update description	More clarity on what the service is for. Only reconnections are performed outside business hours	Fixed
Design Related Services			
Public lighting minor capital works	New service and fee	Quoted fee to recover administration, design, technical assessment costs relating to public lighting minor capital works	Quoted
Network safety			
Provision of service/additional crew	Remove service and fee	Not required as another ANS covers this service	
De-energisation of wires for safe approach	Remove service and fee	Not required as another ANS covers this service	
Rectification of network related customer fault	Remove service and fee	Not required	
High load route assessment	New service and fee	Majority of enquiries regarding high load do not require an escort (separate quoted service). The fixed fee is to cover time spent assessing/advising the appropriate route to a customer	Fixed
Investigation fee for voltage fluctuations at customer premises where no network fault found	New service and fee	The fixed fee is to cover costs in performing an investigation of a voltage fluctuation where no network fault is found	Fixed
Access permits, facilitation and oversight			
Development application approvals	New service and fee	This is a non-routine service provided to individual customers on an as needs basis only but not currently charged as an ANS	Fixed
Simple network access permit, clearance to work or notification to work	Update description	More clarity on what the service is for. Broadened description to include notification for works	Fixed
Complex network access permit or clearance to work	Update description	More clarity on what the service is for. The addition of 'network access' more clearly defines the service	Quoted
Network access permit or clearance to work – cancellation – simple	Update description	More clarity on what the service is for. The addition of 'network' more clearly defines the service	Fixed

Continued

Service	Change	Reason	Fee type
Network access permit or clearance to work – cancellation - complex	Update description	More clarity on what the service is for. The addition of 'network' more clearly defines the service	Fixed
Facilitation of activities within clearances of distributor and transmission assets	Update description	More clarity on what the service is for. This service applies to transmission as well as distribution assets	Quoted
Inspections			
Network compliance activities – Level 1 ASP works	Update description	More clarity on what the service is for	Quoted
Notification of arrangements			
Notification of arrangements	Update description	More clarity on what the service is for	Fixed
Notification of arrangements	Update description	More clarity on what the service is for	Quoted
ASP authorisations			
ASP level 1/2 – individual authorisation – initial	Update description, set one lower fee for levels 1 & 2	Simpler, easier to understand list	Fixed
ASP level 1/2 – individual authorisation – maintain	Update description, set same lower fee for levels 1 & 2	Simpler, easier to understand list	Fixed
ASP level 2 – company authorisation – initial	Update description and reduce fee	Simpler, easier to understand list	Fixed
ASP level 1/2 – company authorisation – maintain	Update description, set same lower fee for levels 1 & 2	Simpler, easier to understand list	Fixed
ASP level 1 – company authorisation – initial	Update description and reduce fee	Simpler, easier to understand list	Fixed
Training			
Training – 5 to 9 participants	Remove service and fee	Replace with a standard half-day or full-day rate, to simplify	Fixed
Training – 10 to 14 participants	Remove service and fee	Replace with a standard half-day or full-day rate, to simplify	Fixed
Training – 15 or more participants	Remove service and fee	Replace with a standard half-day or full-day rate, to simplify	Fixed
Network-related access/compliance training – half day	New service and fee	Simpler, easier to understand	Fixed
Network-related access/compliance training – full day	New service and fee	Simpler, easier to understand	Fixed
Security lighting			
Small – monthly charge (first 2 years)	Remove service and fee	Not required	Fixed
Medium – monthly charge (first 2 years)	Remove service and fee	Not required	Fixed

Continued

Service	Change	Reason	Fee type
Large – monthly charge (first 2 years)	Remove service and fee	Not required	Fixed
Small – monthly charge (LED)	New service and fee	Introduce new pricing for LED security lights	Fixed
Medium – monthly charge (LED)	New service and fee	Introduce new pricing for LED security lights	Fixed
Large – monthly charge (LED)	New service and fee	Introduce new pricing for LED security lights	Fixed
Small – monthly charge (Legacy lights)	Update description	Simpler, easier to understand	Fixed
Medium – monthly charge (Legacy lights)	Update description	Simpler, easier to understand	Fixed
Large – monthly charge (Legacy lights)	Update description	Simpler, easier to understand	Fixed

Consultation question 3:

- Do the proposed changes meet your needs? Are there any more changes you think we should make?

3 Providing feedback on this paper

We welcome all feedback on this consultation paper, whether in response to the consultation questions included in the paper and summarised below, or on any topic you would like to share a perspective on.

You can provide feedback to us directly:

- By emailing us at yoursay@ausgrid.com.au; or
- Via the yoursay.ausgrid.com.au website

We request your feedback by close of business **7 October 2022**. Mark any information you do not wish to be published as confidential.

We will also schedule forums to discuss and share feedback in September and October 2022.

3.1 Summary of consultation questions

1. Have we got an appropriate mix of fixed/quoted fees?
2. What should we consider when proposing our labour rates for the 2024-29 period?
3. Do you have any feedback on the approach to charging for out of hours work?
4. Do the proposed changes meet your needs? Are there any more changes you think we should make?

3.2 How we will use your feedback

We will consider all comments we receive to inform the development of our 2024-29 regulatory proposal, which we will submit to the AER on 31 January 2023.

Figure 9 sets out the timetable for our 2024-29 regulatory reset. **Figure 10** outlines how you can find out more and share your views on this paper.

Figure 9 Regulatory proposal timeline

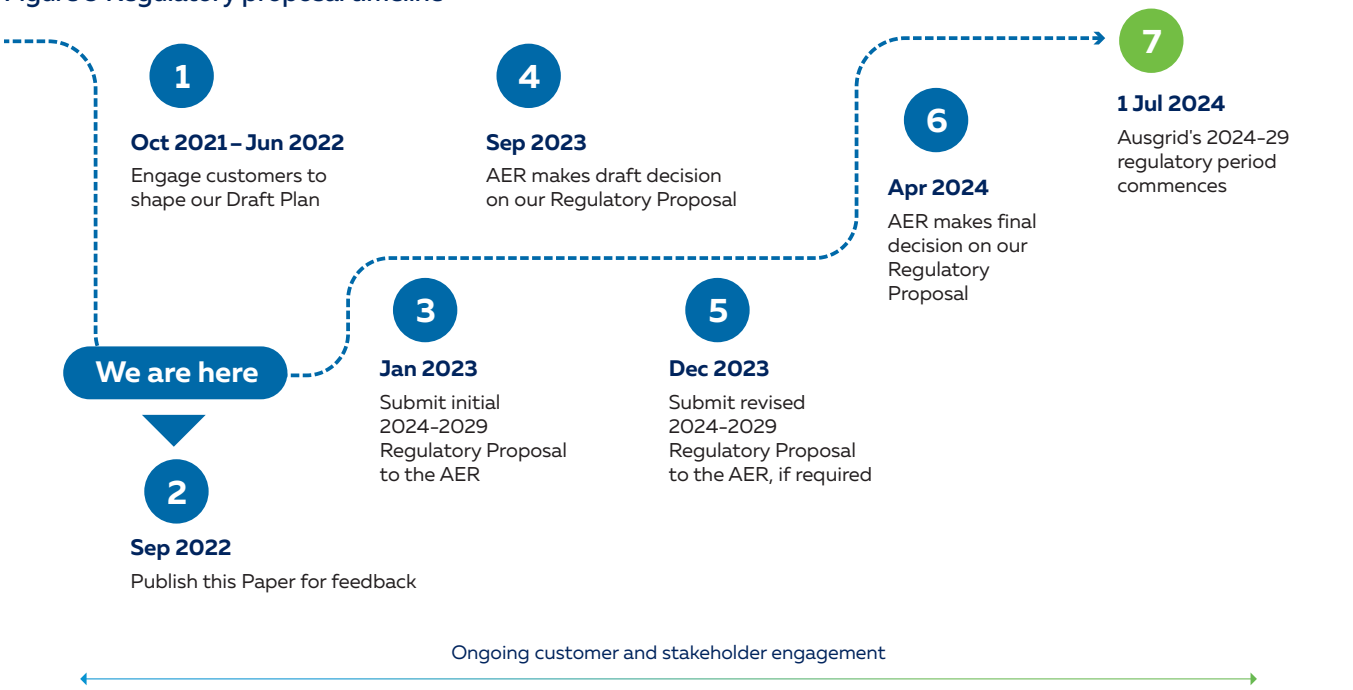


Figure 10 Opportunities to find out more and share your views on our ANS consultation paper

Commercial and industrial customers:

- Visit YourSay/large-business-customers to submit your feedback

Household or small business customers:

- Visit YourSay/households or YourSay/small-business to submit your feedback
- Play our 'Be the Boss' game to let us know how you would get the balance right if you were the boss of Ausgrid

Retailers:

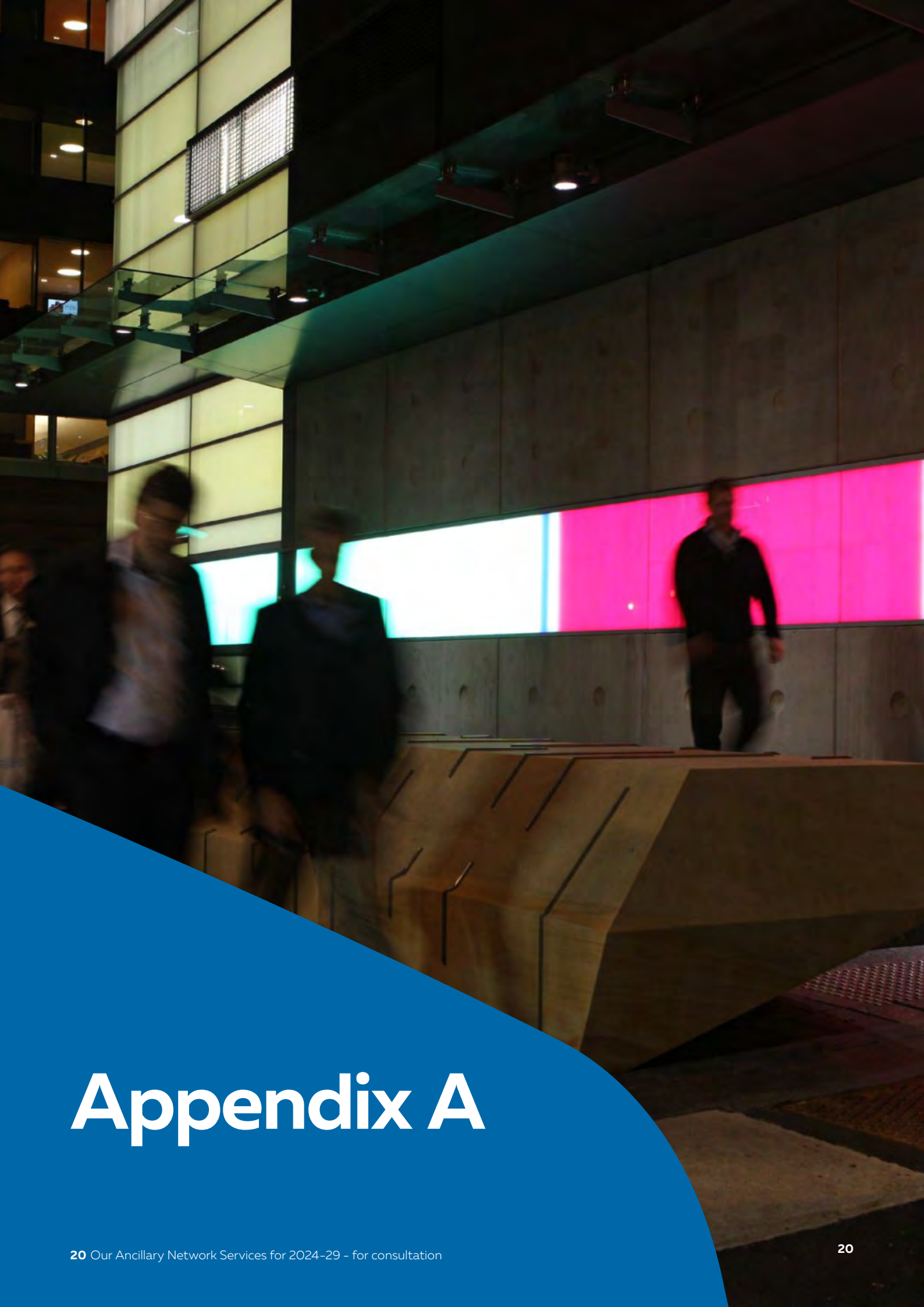
- Register for our forum at **9am on 20 September 2022**
- Visit YourSay/retailers to submit your feedback
- Visit our dedicated retailer webpage Ausgrid.com.au/retailers

Accredited Service Providers:

- Visit YourSay/asp to submit your feedback

Local councils

- Register for our street lighting forum by emailing YourSay@ausgrid.com.au
- Register for our Draft Plan forum by emailing YourSay@ausgrid.com.au
- Visit YourSay/local-councils to submit your feedback



Appendix A

Appendix A

Full list of ANS we are considering for 2024-29, with potential changes marked up

Blue text in table shows potential marked up changes

Figure 11: Proposed fee changes

Services	Type	Units
Metering and related ancillary network services (fixed fees)		
Metering site establishment	Fixed	per service
Special meter reading	Fixed	per service
Type 5–6 meter test – simple	Fixed ~~Quoted~~	per service ~~hour~~
Type 5–6 meter test - complex	Fixed	per service
Type 5-7 non-standard meter data services	Fixed	per service
Emergency maintenance of failed metering equipment no owned by the network	Fixed	per service
Off peak conversion	Fixed	per service
Disconnection visit (site visit only)	Fixed ~~Quoted~~	per service ~~hour~~
Disconnection completed	Fixed ~~Quoted~~	per service ~~hour~~
Disconnection (disconnection completed - technical / advanced)	Fixed ~~Quoted~~	per service ~~hour~~
Pillar / pole top disconnection completed	Fixed	per service
Pillar / pole top site visit	Fixed	per service
Reconnection ~~/ disconnection~~ outside normal business hours	Fixed	per service
Recovery of debt collection costs – dishonoured transactions	Fixed	per service
Attendance at customers' premises to perform a statutory right where access is prevented	Fixed	per service
Vacant property disconnection	Fixed	per service
Vacant property site visit	Fixed	per service
Distributor arranged outage for purpose of replacing metering - no access	Fixed	per service
Distributor arranged outage for purpose of replacing metering - Simple complete	Fixed	per service
Distributor arranged outage for purpose of replacing metering – not complete – 2nd visit	Fixed	per service
Distributor arranged outage for purpose of replacing metering - Complex complete	Fixed ~~Quoted~~	per service ~~hour~~
Distributor arranged outage for purpose of replacing metering – site visit only	~~Quoted~~	~~per hour~~
Distributor arranged outage for replacing a meter - additional charge where requested outside normal business hours (weekday)	Fixed	per service
Distributor arranged outage for replacing a meter –additional charge where requested outside normal business hours (weekend)	Fixed	per service
Correction of metering and market billing data	Fixed	per service
Final read after type 5 meter equipment removed	Fixed	per service

continued

Services	Type	Units
Type 5 and 6 CT testing	Fixed ~~Quoted~~	per service ~~hour~~
Type 5 and 6 CT recovery	Fixed ~~Quoted~~	per service ~~hour~~
Metering site alteration	Fixed	per service
NMI extinction	Fixed	per service
Metering and related ancillary network services (quoted fees)		
Network tariff change request (Bulk transfer requested by customer)	Quoted ~~Fixed~~	per hour ~~service~~
Maintenance and testing of customer access points	Quoted	per hour
Distributor arranged outage for purpose of replacing metering – additional activities (R4)	Quoted	per hour
Facilitation of metering related works supporting advanced meter roll-out (R4)	Quoted	per hour
Design related services		
Administration of contestable works – general	Fixed	per service
Administration of Contestable Works – additional	Quoted	per hour
Administration of pioneer schemes	Fixed	per service
Design information – simple	Fixed	per service
Design information – standard / complex	Quoted	per hour
Design information – asset creation	Fixed	per asset
Design certification – general	Fixed	per service
Design certification – other	Quoted	per hour
Public lighting minor capital works	Quoted	per hour
Connection application related services		
Technical assessment – applications or relocations	Fixed	per service
Preliminary enquiry	Quoted	per hour
Connection offer – basic	Fixed	per service
Connection offer – standard	Fixed	per service
Connection offer – negotiated	Quoted	per hour
Planning studies	Quoted	per hour
Site inspection	Fixed	per service
Technical support – permanently unmetered supply (PUMS)	Quoted	per hour
Registered participant support	Quoted	per hour
Contestable network commissioning and decommissioning		
Commissioning asset – simple	Fixed	per service
Commissioning asset – standard	Fixed	per service
Commissioning assets – complex	Quoted	per hour
Decommissioning assets	Quoted	per hour
Access permit, oversight and facilitation services		
Simple network access permit, clearance to work or notification to work	Fixed	per service
Complex network access permit or clearance to work	Quoted	per hour
Network access permit – cancellation – simple	Fixed	per service
Network access permit – cancellation – complex	Fixed	per service
Install / remove overhead network earths	Quoted	per hour

continued

Services	Type	Units
Access – standby person	Quoted	per hour
Access – confined space entry permit	Quoted	per hour
Process and project facilitation	Quoted	per hour
Specialist services	Quoted	per hour
Facilitation of activities within clearance of distribution and transmission assets	Quoted	per hour
Development application approvals	Fixed	per service
Notifications of arrangements		
Notification of arrangements	Fixed	per service
Notification of arrangements	Quoted	per hour
Network related property services		
Property tenure	Quoted	per hour
Network safety service and security		
Rectification of illegal connections	Quoted	per hour
~~Provision of service/additional crew~~	~~Quoted~~	~~per hour~~
Fitting of tiger tails	Quoted	per hour
High load escorts	Quoted	per hour
Temporary power	Quoted	per hour
Bush fire mitigation works	Quoted	per hour
Neutral integrity test	Quoted	per hour
~~De-energisation of wires for safe approach~~	~~Quoted~~	~~per hour~~
~~Rectification of network related customer fault~~	~~Quoted~~	~~per hour~~
11kV cable termination at zone substation	Quoted	per hour
Termination of a sub-transmission cable at a zone substation	Quoted	per hour
Complex customer-initiated asset relocation	Quoted	per hour
Traffic control	Quoted	per hour
Substation disconnect and reconnect	Quoted	Per hour
High load route assessment	Fixed	per service
Investigation fee of voltage fluctuations at customer premises where no network fault found	Fixed	per service
Inspection services		
Network compliance activities ~~construction~~ – Level 1 ASP works	Quoted	per hour
Re-inspection – level 1 ASP works	Quoted	per hour
Level 2 ASP works (NOSW) – A Grade	Fixed	per NOSW
Level 2 ASP works (NOSW) – B Grade	Fixed	per NOSW
Level 2 ASP works (NOSW) – C Grade	Fixed	per NOSW
Re-inspection – ASP level 2 works	Quoted	per hour
Investigate, review and implement remedial actions associated with ASP's connection works	Quoted	per hour
Service size > 100A and mandatory inspections	Quoted	per CCEW
Re-inspection of electrical contractor works	Quoted	per hour

continued

Services	Type	Units
Authorisation of ASPs		
ASP Level 1/2 – individual authorisation – initial ~~or Additional Authorisation Session~~	Fixed	per service
ASP Level 1/2 – individual authorisation – maintain ~~Renewal or Additional Company to Existing Authorisation~~	Fixed	per service
ASP Level 1 – company authorisation - initial	Fixed	per service
~~ASP Level 1 - Company re-authorisation (Annual fee)~~	~~Fixed~~	~~per service~~
ASP Level 2 – company ~~Initial~~ authorisation – initial	Fixed	per service
ASP Level 1/2 - ~~Re-~~ company authorisation ~~(Annual fee)~~ – maintain	Fixed	per service
~~ASP Level 2 - Additional authorisation~~	~~Fixed~~	~~per service~~
ASP Level 3 - authorisation/re-authorisation (biennial fee)	Fixed	per service
Consultancy and review services		
Engineering consultancy	Quoted	per hour
Approved materials list application	Quoted	per hour
Training		
~~Training – 5 to 9 participant~~s	~~Fixed~~	~~per service~~
~~Training – 10 to 14 participants~~	~~Fixed~~	~~per service~~
~~Training – 15 or more participants~~	~~Fixed~~	~~per service~~
Network-related access/compliance training – half day	Fixed	per person
Network-related access/compliance training – full day	Fixed	per person
Complex training	Quoted	per hour
ASP Material Sales		
ASP material sales	Purchase price and support costs adjustment	
~~Security Lighting~~ Lighting Solutions (Security Lighting)		
Small – installation cost	Fixed	per service
Medium – installation cost	Fixed	per service
Large – installation cost	Fixed	per service
Legacy lights		
~~Small - monthly charge (first 2 years)~~	~~Fixed~~	~~per service~~
Small – monthly charge ~~(post 2 years)~~	Fixed	per service
~~Medium - monthly charge (first 2 years)~~	~~Fixed~~	~~per service~~
Medium – monthly charge ~~(post 2 years)~~	Fixed	per service
~~Large - monthly charge (first 2 years)~~	~~Fixed~~	~~per service~~
Large – monthly charge ~~(post 2 years)~~	Fixed	per service
LED lights		
Small – monthly charge	Fixed	per service
Medium – monthly charge	Fixed	per service
Large – monthly charge	Fixed	per service

Glossary

Accumulation meters – record total electricity usage at a point of time as opposed to when it was used. Customers who have these meters are charged the same amount for the electricity that they use, regardless of when they used it.

Advanced meters – also known as smart meters, are remotely read by the retailer appointed as the customer's metering data provider. Energy consumption data is recorded in either 5 or 30min intervals.

ANS – ancillary network services. Non-routine services provided to individual customers on an 'as needed/customer requested' basis.

ASPs – accredited service providers. Accredited to perform contestable work on NSW electricity distribution network and can be engaged by individuals or businesses who need to connect to the network. There are three levels of accreditation:

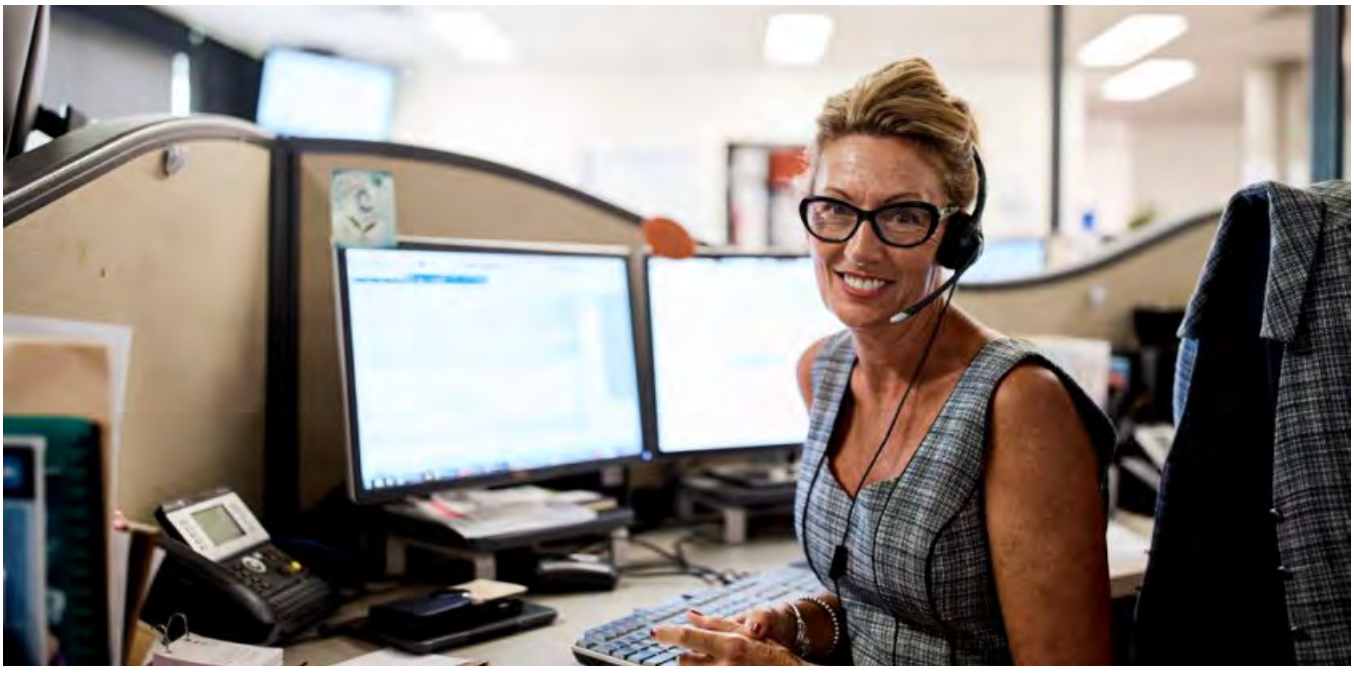
- ASP 1 – constructs new or makes changes to the existing 'poles and wires' network
- ASP 2 – completes service wire and cable connection work
- ASP 3 – designs the 'poles and wires' network

Contestable – contestable work refers to activities that are provided on a competitive basis. Contestable electrical work on the NSW electricity distribution network must be undertaken by an ASP. Any work to design, construct or install assets that connect a customer's installation to our electricity network is classified as contestable work.

CCEW – certificate of compliance for electrical work. Electrical contractors must complete a CCEW form for all electrical installation work, or work resulting in an increase in electrical rating. Ausgrid inspects the private electrical wiring work performed by electrical contractors on customers assets to check for compliance with the requirements of Australian Standard AS3000, associated standards and the NSW Service and Installation Rules.

Interval meters – record how much electricity is used every 30 minutes, hence usage can be applied to different times of the day and different rates (if applicable).

NOSW – notification of service work. An ASP 2 must complete a NOSW form for all contestable work as detailed in our publication ES4 Service Provider Authorisation and submit this form to Ausgrid at the completion of work. Ausgrid, in accordance with the NSW Accreditation of Service Providers Scheme, inspects work undertaken by an ASP 2 for the purpose of checking compliance and maintaining an acceptable standard of work. Audit inspections are undertaken as outlined in Ausgrid inspection policies.



Ausgrid

For more information, or to make a submission go to:
YourSay.Ausgrid.com.au

September 2022

Our Public Lighting Services for 2024-29

for consultation

Empowering communities for a resilient, affordable and net-zero future.

Ausgrid

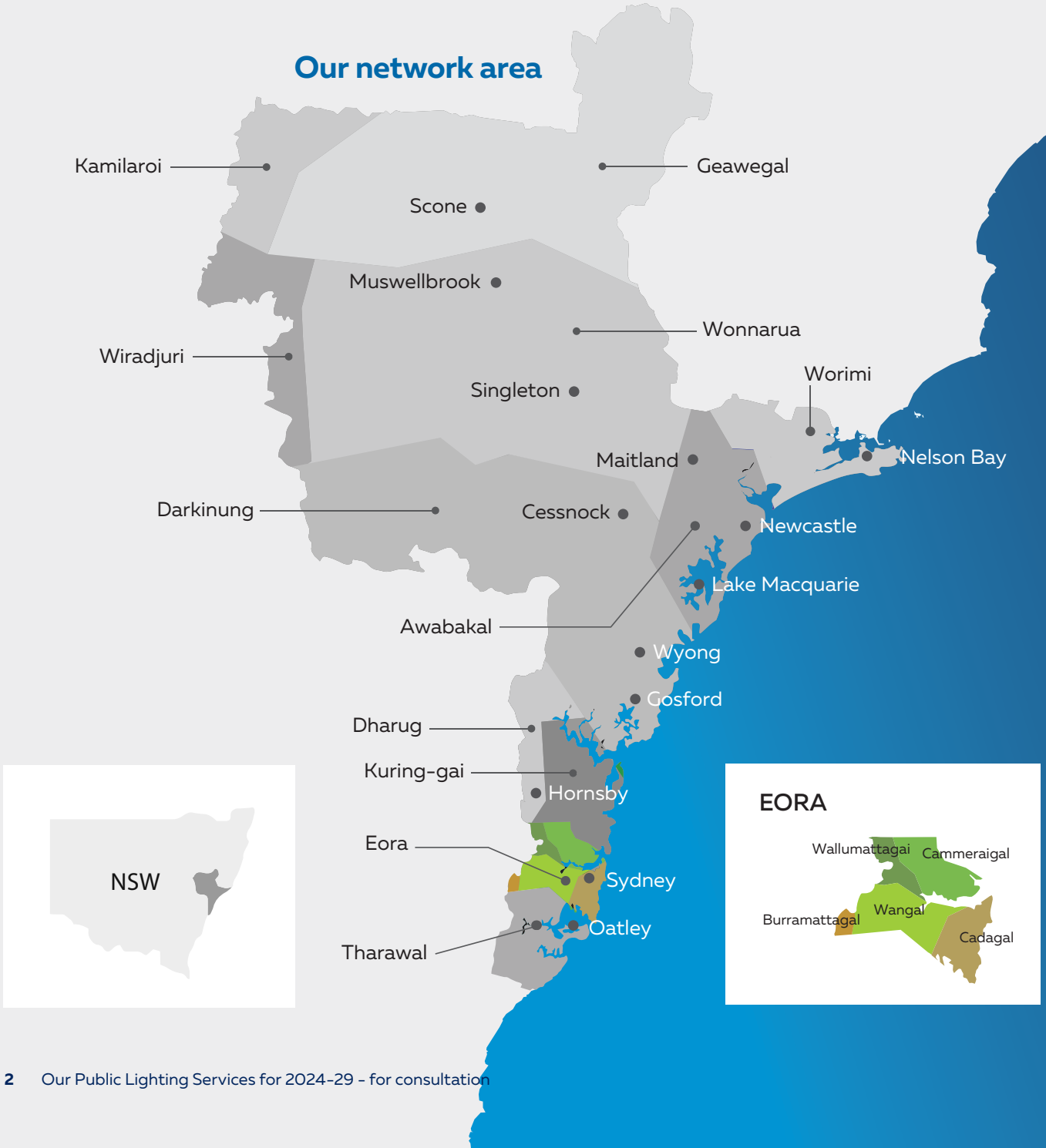
Acknowledgment of Country

We acknowledge the Traditional Custodians of the lands where the Ausgrid distribution network is located, and we pay our respects to the elders past, present and emerging.

As set out in our Reconciliation Action Plan, it is important that this recognition leads to industry wide support and understanding of the knowledge, stories, languages and experiences of Aboriginal and Torres Strait Islander peoples, as our way of paying respect, and contributing to, some of the oldest continuous cultures of the world.

Our network and operations span the traditional country of 17 languages, tribal and nation groups in Sydney, the Central Coast and Hunter regions of New South Wales. We want to lead and foster a workforce, and approach to our operations, that embraces the learnings, voices, cultures and histories of these Traditional Owners into our own organisation.

Our network area



Our vision is for communities to have the power in a resilient, affordable, net zero future

Our role in the community

Ausgrid owns and operates the network of substations, powerlines, underground cables and power poles that deliver power to communities across large parts of Greater Sydney, the Central Coast and the Hunter.

Each day we build, operate and maintain this distribution network with a focus on providing a safe, reliable and efficient energy supply.

We also provide public lighting services within our network area, which are the topic of this consultation paper.

The communities we serve include our 1.8 million household, small and large businesses customers, as well as all those who rely on and benefit from their energy supply. They also include our delivery partners – such as energy retailers, local councils and accredited service providers (**ASPs**) – and customer advocates and government agencies.

The purpose of this consultation paper

Every 5 years, we submit a proposal to the Australian Energy Regulator (**AER**) setting out our plans for serving our communities in the 5 years ahead, including our planned expenditure and pricing.

We must develop a proposal for the period from 1 July 2024 to 30 June 2029 (**2024-29**) and submit it to the AER in January 2023. We are currently engaging with our communities on our main 'poles and wires' service via our Draft Plan for 2024-29, which we released for consultation on 1 September 2022.

This consultation paper focuses on our public lighting services for 2024-29, and outlines what we are hearing through our engagement on these services, and our current thinking on how we might respond.

We seek feedback from all those with an interest in the public lighting services we deliver. We will use this feedback to inform the proposal we submit to the AER in January 2023.

Information on how you can provide your feedback is provided on **page 15**.

Contents

1 Introduction

Ausgrid is one of the largest providers of public lighting services in Australia. We own, operate and maintain more than 260,000 public lights across our network area, which spans 22,275 square kilometres and encompasses 33 local council areas. Local councils are our key customers, representing over 99% of public lights on our network.

Public lighting is an essential service that promotes safety of communities and roadway users. We aim to help our customers deliver on safe and secure public lighting for the community efficiently and with minimal adverse environmental impact.

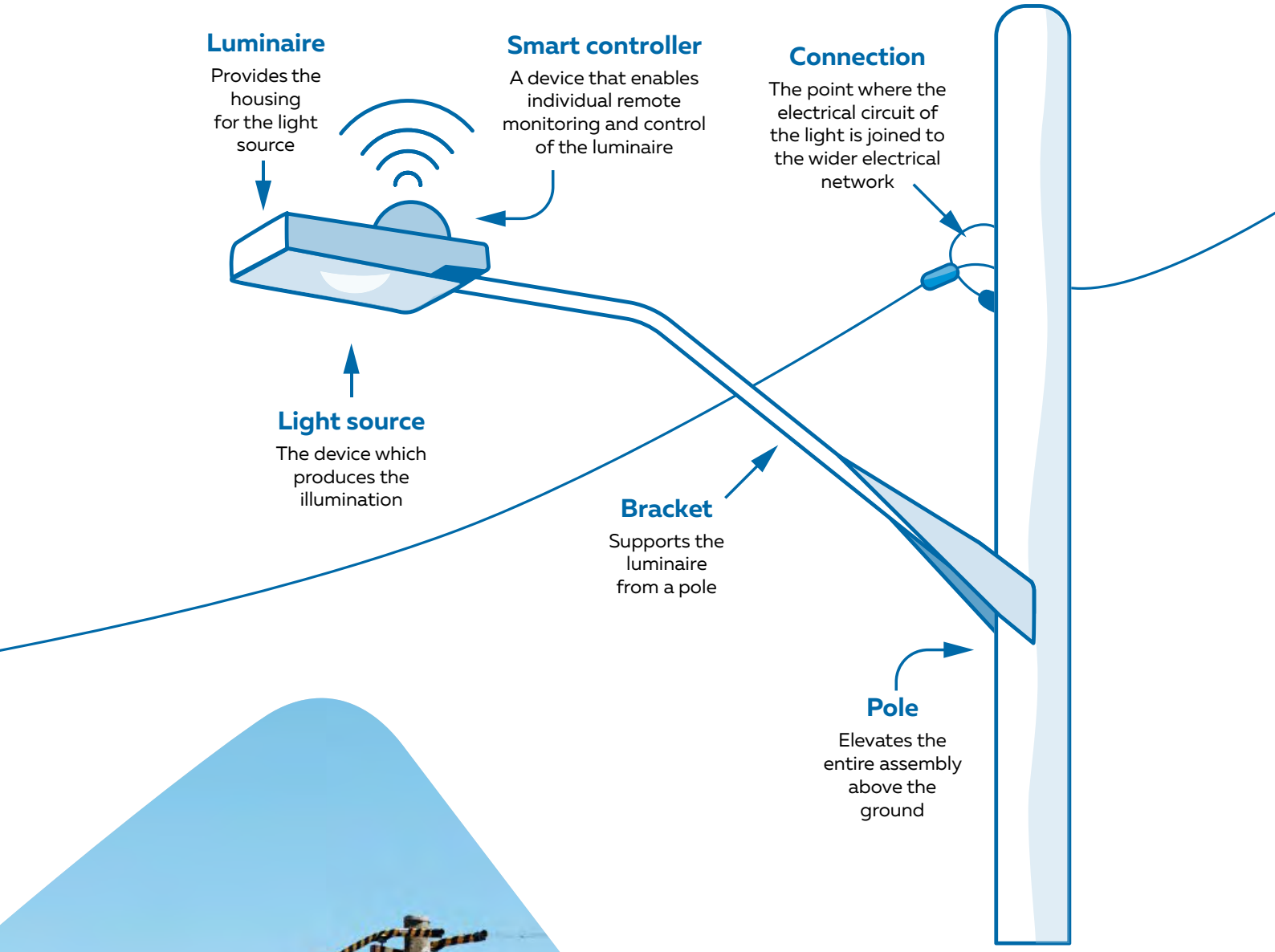
The AER regulates our prices for public lighting services separately from our distribution network services. However, our network business provides the services, which enables us to take advantage of economies of scale in planning, delivery and administration.

1.1 What do our public lighting services involve?

We provide, construct and maintain public lighting infrastructure to meet the standards set by the NSW Office of Energy and Climate Change (**OECC**) and the needs of our public lighting customers.

The main components of public lighting are shown in **Figure 1**.

Figure 1 Public lighting components



1.2 Transition to LED public lighting

As part of our vision for communities to have the power in a resilient, affordable, net zero future, we are committed to working with local councils to facilitate the transition to light-emitting diode (**LED**) luminaires for all public lighting in our area. LED luminaires are more energy-efficient than traditional luminaires, reducing the energy used to provide public lighting by an average of 60% across our portfolio of public lights. They also last longer and require less maintenance. As a result, they lower the overall cost of providing public lighting.

We are currently part way through the transition, so our public lighting infrastructure includes a combination of legacy[1] luminaires and new LED luminaires.

Since 2018, we have replaced approximately 150,000 legacy luminaires with LED luminaires in streetlights, mainly on minor roads (for example residential roads) across our network. This represents 80% of all streetlights on minor roads and 58% of total public lights.

In 2022-23, we started replacing legacy luminaires on major roads (high-traffic roads), including introducing smart controllers.[2] We plan to start replacing legacy decorative lights, often located in parks/residential subdivisions and floodlights, including pedestrian crossings, with LED luminaires in the coming years.

1.3 Our engagement on public lighting services to date

To develop our 2024-29 regulatory proposal on public lighting services, we are reviewing our current services and prices. As part of this process, we are engaging with our public lighting customers to get their feedback on the services we offer and our pricing.

To date, we have engaged with local councils across our network area and the Southern Sydney Regional Organisation of Councils (**SSROC**), which represents 29 of the 33 local councils, in relation to the public lighting improvement program. We have held 2 dedicated public lighting forums in December 2021 and May 2022. We have also discussed the issues raised in these forums with our Reset Customer Panel (**RCP**) in May 2022.

1.4 What the rest of this paper covers

The rest of this discussion paper explains our current thinking, as informed by customers, on our public lighting services for 2024-29, and seeks your feedback:

- **Section 2** outlines what we are hearing through our engagement on public lighting services, and our potential responses;
- **Section 3** explains how you can provide feedback on these potential responses, and how we will use your feedback; and
- **Appendix A** outlines the likely impacts of the transition to LED luminaires on local councils' overall expenditure on public lighting.

1 Legacy luminaires are traditional lighting technologies including compact fluorescent, sodium and metal halide.

2 Smart controllers enable individual monitoring and control of a luminaire and allows functions such as on/off dimming, autonomous operation, smart scheduling and fault notification.

2 What we are hearing and our potential responses

In our engagement on public lighting services to date, we have heard that local councils want a faster transition to LED luminaires. This includes the introduction of smart controllers – devices that can be fitted to individual LED luminaires – that would enable public lighting to be controlled and monitored remotely and providing other smart city solutions[3] and services. Local councils also want the process of having public lighting minor capital works approved and delivered to be easier, faster and cheaper for them.

In relation to public lighting pricing, they generally want greater transparency and simplicity. They support changes to simplify prices provided they do not significantly reduce cost-reflectivity and are clearly explained.

Figure 2 provides an overview of the feedback we have heard to date and what we are considering in response. The sections that follow outline our public lighting prices and discuss the pricing changes we are considering in more detail.

3 Smart city solutions refer to sensors and other smart devices connected to the public lighting network and can be used by local councils to monitor and perform other functions in public spaces.

Figure 2 What we are hearing on our public lighting services, and what we are considering in response

	What we have heard to date...	We are considering...	For our customers, this would mean...
Pricing	Our pricing, including any changes in pricing, should be transparent Moving to simpler (weighted average) pricing is supported, provided that the prices for the most commonly used products are cost-reflective	• Rationalising existing public lighting charges where feasible • While consulting with local councils during this review, sharing the models and assumptions we use to build prices	• A simpler, more transparent list of public lighting prices so they can find pricing information relevant to them more quickly and easily • Greater understanding of, and confidence, in the methodology used to calculate our prices
	Customers would like to have flexibility in paying their pre-2009 capital charges	• Providing an option for local councils to accelerate payment of remaining pre-2009 capital values during the 2024-29 period so they are fully paid off by the end of 2028-29	• Flexibility to manage public lighting expenditure to suit their funding profiles over time
Transition to LED and smart city solutions	The transition to LED public lighting and introduction of smart controllers to facilitate smart city applications should be accelerated	• Ways to accelerate the rollout of LED replacements on major roads by 30 June 2026 • Installing smart controllers as part of the rollout of LED streetlights on minor roads (when local councils choose this option) • Starting the rollout of LED decorative lighting and floodlights in the 2024-29 period • Extending our smart control rollout to residential and decorative luminaires	• More reliable, energy efficient and affordable public lighting • Ability to install sensors to monitor the local environment and improve local services (e.g. air quality monitoring, traffic counting)
	The AER's annual price setting process delays the adoption of new technologies and pricing	• Consulting with local councils when sourcing new lighting technologies/ products • Proposing that the AER approve a pricing approach which allows new public lighting technology to be adopted sooner, without needing to wait for annual price reviews	• Ability to adopt new and more efficient technology sooner, resulting in more timely cost savings and lower carbon emissions
Minor public lighting projects	For public lighting minor capital works (**MCW**) projects, the approval process should be simpler, the time required to install light poles should be shorter, and the pricing should be more transparent	• Reviewing the end-to-end process for customer requests for public lighting MCW (up to 10 lights). The review would cover customer engagement, processes, delivery and pricing transparency, and commence in FY23	• A cheaper, faster, and overall improved experience for customers requesting public lighting minor capital works

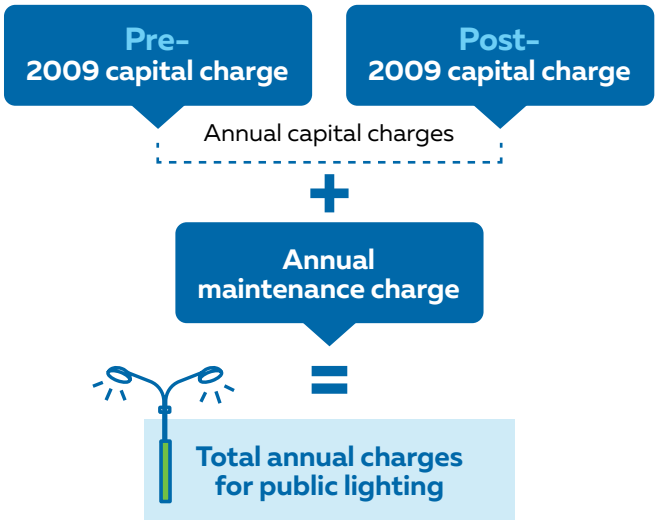
2.1 Public lighting prices

The AER determines the maximum prices we can charge for public lighting services for the first year of the 5-year regulatory period, and how we may change this price over the remaining 4 years.

As shown in **Figure 3**, we currently have 3 types of annual public lighting charge:

- **2 capital charges** – these recover the costs we incur to fund and install the customer's public lighting infrastructure, depend on when the infrastructure was installed and are calculated using different approaches; and
- **1 maintenance change** – which recovers the costs of maintaining the customer's public lighting assets (regardless of when they were installed).

Figure 3 Our public lighting charges



For the 2024-29 period, we propose to maintain these 3 charges, and the approaches used to calculate them. This will maintain consistency in how public lighting charges are calculated across 5-year regulatory periods. However, as **Figure 2** indicated, we are considering some pricing changes related to each of these charges in response to what we have heard through our engagement with local councils to date.

2.1.1 Pre-2009 capital charge

In 2009, the AER made a change to the way our public lighting capital charges are calculated, based on when the assets were installed. For assets installed before 1 July 2009, the charge is calculated based on a return on capital invested (to recover our ongoing financing costs) and return of capital invested (or depreciation, to recover the cost of the asset over its useful lifespan).

The AER determined the value of our public lighting asset base as at 30 June 2009, by customer and by asset category. The value of this asset base is updated each year, reducing in value to account for depreciation (based on the average age of assets within each category). The value is also adjusted each year to remove the residual capital value of assets replaced or removed in the previous year.

By 1 July 2024, the value of the pre-2009 asset base will have reduced from $111.3 million in 2009 to an estimated $9.7 million. This is because the capital value of pre-2009 public lighting assets will be almost fully recovered. For example, all luminaires will be fully depreciated, and assets in other categories will be mostly depreciated.

However, poles will not be fully depreciated until 2044. This means some local councils will continue to pay a small annual pre-2009 capital charge for another 22 years.

As noted in **Figure 2**, in our engagement to date, some local councils indicated they would like flexibility in their pre-2009 asset charges and more transparency. In response to this feedback, we are considering providing local councils with the option to accelerate payment of remaining pre-2009 capital values during the 2024-29 period so all assets are paid off by 30 June 2029. Local councils would pay the same amount in net present value terms whether they bring payments forward or continue to pay until 2044. However, bringing payment forward would simplify their future public lighting bills, and may provide other benefits.

We expect that whether this option makes sense for a local council will depend on its individual financial circumstances and preferences. We have sent individual letters to all local councils outlining the potential financial implication of this option. We will assess each local council's feedback in preparing our 2024-29 proposal to the AER, due in January 2023.

2.1.2 Post-2009 capital charge

For assets installed after 1 July 2009, the capital charge is calculated as an annuity. This means it is calculated so that our one-off installation costs and our ongoing financing costs are recovered over the expected asset life.

We calculate the installation cost component for all post-2009 public lighting assets in the categories shown in **Figure 4**, using the inputs shown in **Figure 5**. The financing cost component is set independently by the AER.

Figure 4 Asset categories for calculating the installation costs

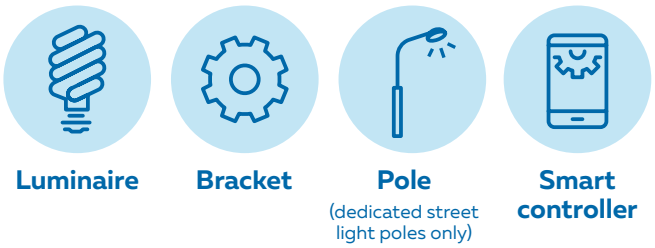


Figure 5 Inputs for calculating the installation cost component

For the 2024-29 period, the AER has requested that the three NSW network businesses use a standardised model to calculate the installation costs included in their proposed post-2009 capital charges. We don't expect that this will have a material impact on our proposed prices.

We are considering how to respond to local council feedback that our capital price lists are confusing. In our consultation in May 2022, we raised the possibility of rationalising these lists by introducing some weighted average prices for similar products. Local councils indicated they would support this approach, provided that the most commonly used products are properly cost-reflective (i.e. not included in a weighted average price).

We are currently considering two options:

1. Rationalising the bracket capital price list

We could introduce weighted average prices for 2 categories of bracket – those used in minor road streetlights and the other for major road streetlights. Within each of these categories, we could have:

- One weighted average price for all brackets in the category;
- Multiple weighted average prices based on bracket size; or
- Multiple weighted average prices based on specific price ranges.

We plan to do further analysis and consult with local councils to identify the most suitable approach.

Consultation question 1:

- Do you have any feedback on how we could rationalise the list of post-2009 capital charges for brackets?

2. Rationalising legacy decorative and floodlight luminaire prices

The relatively small volume of legacy decorative and floodlight luminaires on our network will likely be replaced with LED luminaires from 1 July 2024. We could introduce weighted average prices for these legacy luminaires where it would not have a material financial impact on local councils.

Similar to brackets, we could have:

- One weighted average price for all legacy luminaires in each category (i.e. decorative light or floodlight);
- Multiple weighted average prices based on wattage; or
- Multiple weighted average prices based on specific price ranges.

Consultation question 2:

- Do you have any feedback on how we could rationalise the list of post-2009 capital charges for legacy decorative and floodlight luminaires?

2.1.3 Maintenance charge

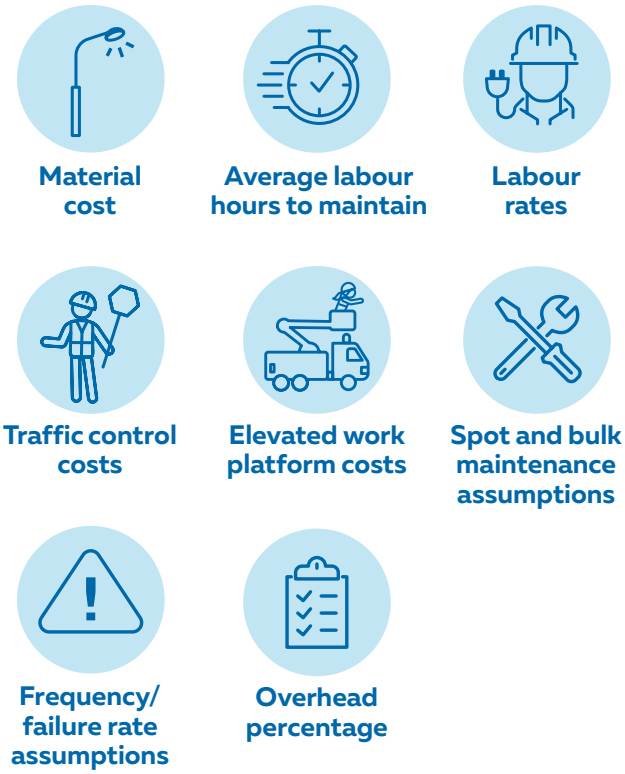
The cost of scheduled and unscheduled maintenance services is priced through an annual maintenance charge. The average charge reflects the average time taken for each activity, a labour rate, and materials required. Maintenance costs apply to both pre- and post-2009 capital assets.

Figure 6 describes the components of the annual maintenance charge. **Figure 7** outlines the inputs we use to calculate these components.

Figure 6 Maintenance charge components

Component	Description
Luminaire	Applied to all luminaires to recover the costs of scheduled and unscheduled maintenance tasks. These tasks include replacing the lamp (required for legacy luminaires), replacing the PE-cell, fixing cable or fuse supply issues, scheduled servicing of luminaires, night-time traffic route patrol (required for luminaires on major roads)
Connection	Applied to public lighting poles with underground connections to recover the cost of repair work to underground cabling
Smart controller	Applied to LED luminaires with smart controllers only to recover the costs related to system licence fees, data charges and cyber security management

Figure 7 Inputs for calculating maintenance charges



We currently have 50 maintenance prices. A number of them are the same as, or only slightly different to, another price. Local councils have indicated that the prices could be rationalised without material impact on their charges. In response to this feedback, we are considering rationalising maintenance prices for luminaires.

We could group similar luminaires together and calculate one maintenance price for each group. For example, we could group them based on whether they are LED luminaires or legacy luminaires, and whether they are for:

- Streetlighting on a minor road or major road; or
- Decorative lights or floodlights.

This would reduce the number of maintenance prices from 50 to 8. The ranges of current prices that would be rationalised into each group are shown in **Figure 8**.

Figure 8 Possible groupings for luminaire maintenance prices

Group	FY23 annual price range
All LED luminaires installed on minor roads	$25.26 - $25.40
All LED luminaires installed on major roads	$33.60 - $33.63
All LED decorative luminaires	$25.26 - $33.60
All LED floodlights	$33.60
All legacy luminaires installed on minor roads	$39.46 - $72.15
All legacy luminaires installed on major roads*	$57.17 - $187.09
All legacy decorative luminaires	$39.46 - $70.42
All legacy floodlights*	$44.26 - $99.72

* A small number of luminaires in the legacy major road and floodlight groupings have multiple lamps, which result in higher maintenance prices

Consultation question 3:

- Do you have any feedback on how we might rationalise luminaire maintenance prices?

3 Providing feedback on this paper

We welcome all feedback on this consultation paper, whether in response to the questions included in Section 2 and summarised below, or on any topic you would like to share a perspective on.

You can provide feedback to us directly:

- By emailing us at yoursay@ausgrid.com.au; or
- Via the yoursay.ausgrid.com.au website

We request your feedback by close of business **7 October 2022**. Mark any information you do not wish to be published as confidential.

3.1 Summary of consultation questions

Consultation question 1:

- Do you have any feedback on how we could rationalise the list of post-2009 capital charges for brackets?

Consultation question 2:

- Do you have any feedback on how we could rationalise the list of post-2009 capital charges for legacy decorative and floodlight luminaires?

Consultation question 3:

- Do you have any feedback on how we might rationalise luminaire maintenance prices?

3.2 How we will use your feedback

We will consider all comments we receive to inform the development of our 2024-29 regulatory proposal, which we will submit to the AER on 31 January 2023.

Figure 9 sets out the timetable for our 2024-29 regulatory reset. **Figure 10** outlines how you can find out more and share your views on our Public lighting consultation paper.

Figure 9 Ausgrid's 2024-29 regulatory reset timeline

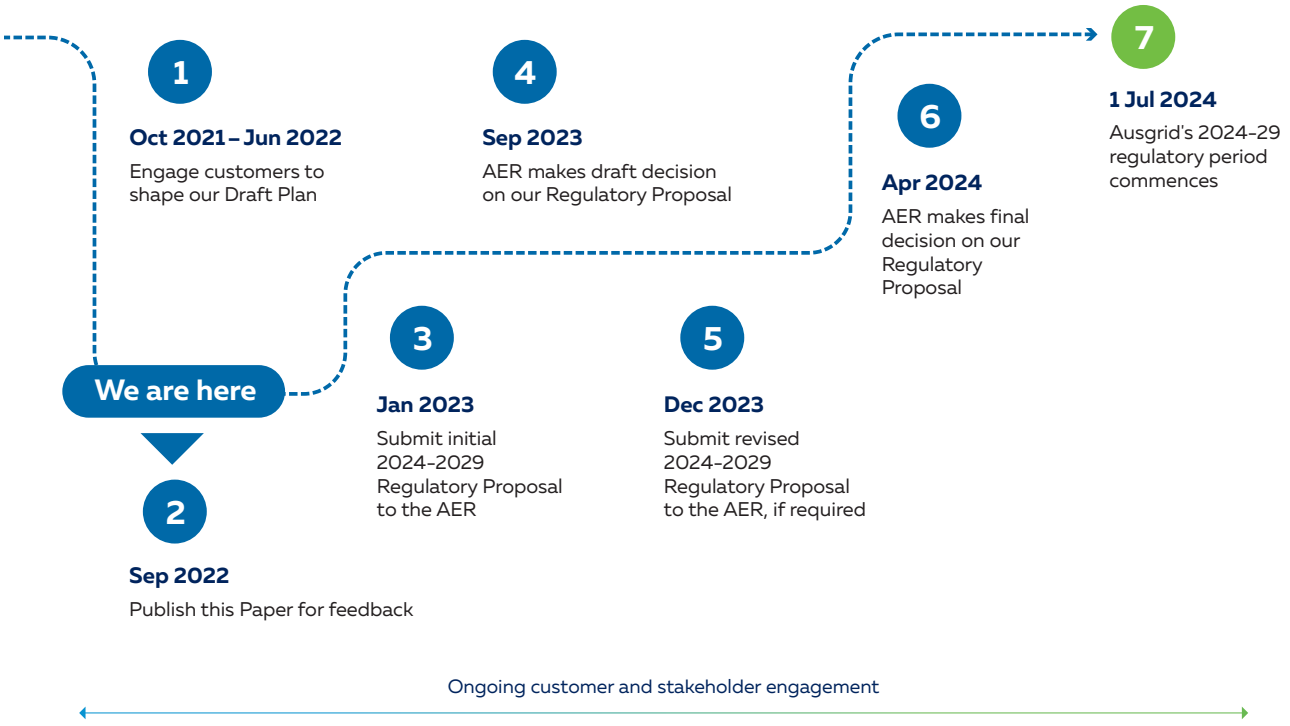


Figure 10 Opportunities to find out more and share your view on our Public lighting consultation paper

Local councils

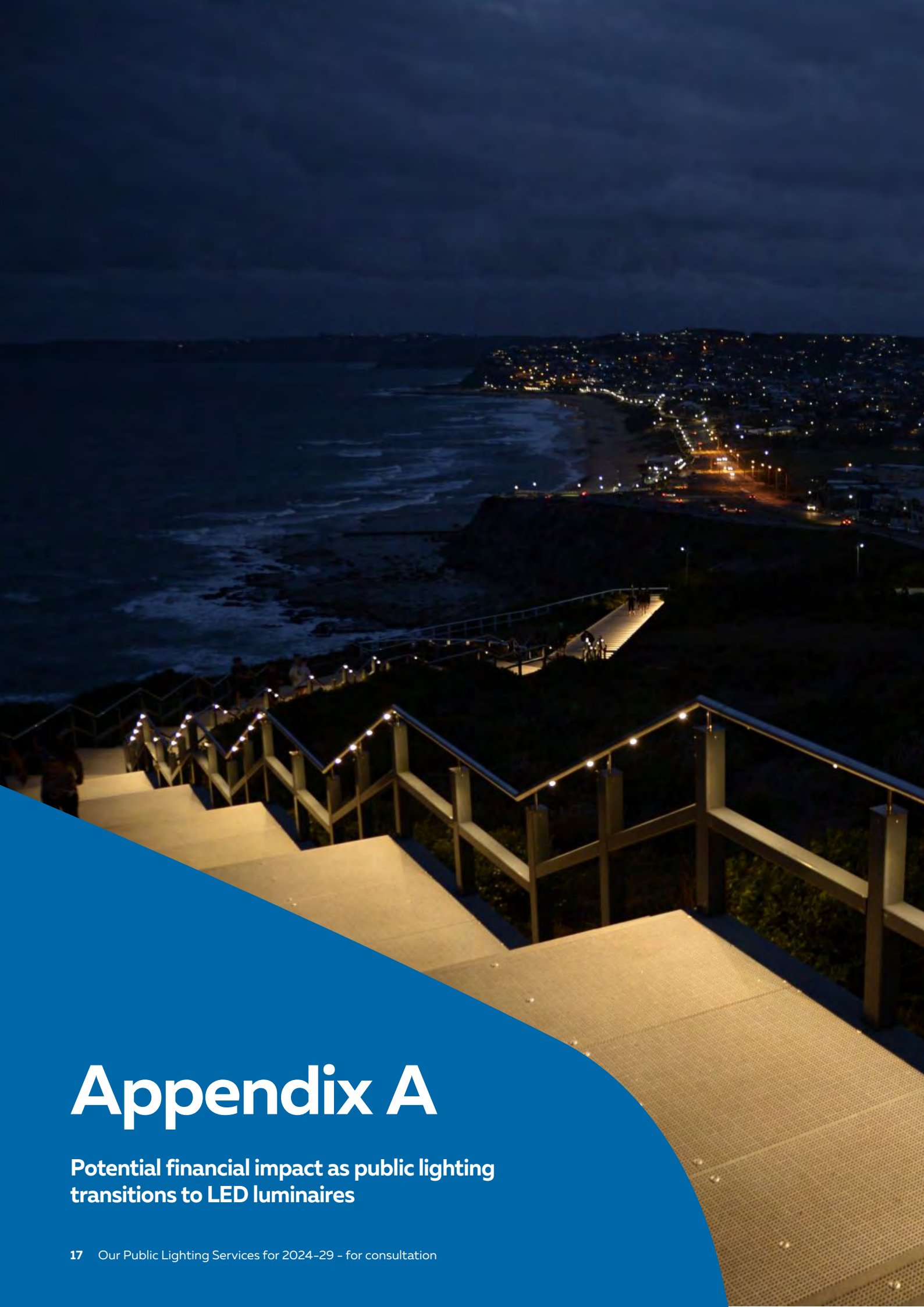
- Register for our street lighting forum by emailing YourSay@ausgrid.com.au
- Register for our Draft Plan forum by emailing YourSay@ausgrid.com.au
- Visit YourSay/local-councils to submit your feedback

Commercial and industrial customers:

- Visit YourSay/large-business-customers to submit your feedback

Household or small business customers:

- Visit YourSay/households or YourSay/small-business to submit your feedback
- Play our 'Be the Boss' game to let us know how you would get the balance right if you were the boss of Ausgrid



Appendix A

Potential financial impact as public lighting transitions to LED luminaires

Potential financial impact as public lighting transitions to LED luminaires

As the transition from legacy luminaires to LED luminaires progresses, there will be changes to the cost of public lighting services. The size of the change for each local council depends on:

- The mix of luminaires currently in their area;
- Changes to this mix over the 2024-29 period;
- The average age of existing luminaires; and
- Decisions the council has made in relation to up-front payments.

The indicative financial impacts are outlined in **Figure 11**. When the impacts of reduced energy consumption and available incentive schemes are considered, we expect the transition to LED lighting will reduce the overall cost of public lighting for councils.

Figure 11 Potential financial impacts for councils of transition to LED luminaires[4]

Cost or revenue source	Impact on overall cost of public lighting	Reason
Residual capital charges	▲	The large volume of legacy luminaires being replaced before the end of their useful life will potentially increase local councils' residual capital payments or keep them at a higher than normal level until the rollout of LED luminaires is completed.
Pre-2009 capital charges	▼	As pre-2009 legacy luminaires are replaced, local councils' total pre-2009 capital charges will come down. (These charges also decline each regulatory period, due to depreciation of the pre-2009 asset base).
Post-2009 capital charges	▲	As pre-2009 legacy luminaires are replaced with LED luminaires, local councils' post-2009 capital charges will increase to start recovering capital costs of the new assets.
Maintenance costs	▼	LED luminaires are more reliable than legacy luminaires, last longer, have a lower failure rate and require less maintenance. Local councils' average maintenance charges will come down a result.
Electricity consumption	▼	LED luminaires are on average 60% more energy efficient than legacy luminaires, resulting in lower consumption and comparatively lower energy consumption costs.
Rebates and Energy Savings Scheme	▼	LED replacement qualifies councils for various incentive schemes such as Energy Savings Certificates (**ESC**) as part of the NSW Energy Savings Scheme.

4 Where the option is available, a local council may decide to pay certain capital costs up-front and in doing so, minimise the increase in ongoing annual capital charges.

Glossary

2024-29 period - Ausgrid's next regulatory control period from 1 July 2024 to 30 June 2029.

AER - Australian Energy Regulator. The AER is an Australian federal government authority that regulates wholesale and retail energy markets, and energy networks, under national energy legislation and rules. Their functions mostly relate to energy markets in eastern and southern Australia.

ACS - Alternative control services. These are regulated 'specific' network charges provided by a DNSP and includes public lighting services.

ANS - Ancillary network services. Non-routine services provided to individual customers on an 'as needed/customer requested' basis.

ASPs - Accredited service providers. Accredited to perform contestable work on NSW electricity distribution network and can be engaged by individuals or businesses who need to connect to the network. There are three levels of accreditation:

- ASP 1 – constructs new or makes changes to the existing 'poles and wires' network
- ASP 2 – completes service wire and cable connection work
- ASP 3 – designs 'poles and wires' network

Bracket - The bracket supports the luminaire from a pole and connects it to the pole.

Connection - The point where the electrical circuit of the light is joined to the wider electrical network. Maintenance costs for repairs of underground cables are recovered through the connection charge.

Communities - Communities include our residential and business customers and the people and institutions who support them engage with energy, such as our partners (including retailers, councils, metering providers, ASP's and aggregators) and other stakeholders (including customer advocates and government agencies).

Draft Plan - Document seeking out feedback on Ausgrid's proposed approach to balancing affordability and service delivery for the period 1 July 2024 to 30 June 2029.

ESC - Energy savings certificate, are tradeable certificates created under the NSW Energy Savings Scheme. They represent energy savings arising from a recognised energy saving activity.

LED - Light-emitting diode. An electronic semiconductor device that emits light when an electric current passes through it. LED luminaires are considerably more efficient than legacy luminaires, and rarely burn out.

Light source - The device which produces the illumination. It is mounted inside the luminaire. A range of technologies are used for light sources including different types of lamps in legacy luminaires and more recently, LEDs. Repair or replacement of the light source is treated as maintenance.

Luminaire - Provides the housing for the light source. The luminaire protects the light source and reflects and diffuses the light. This directs the light to the desired area of coverage and ensures the light does not stray into other areas. Modern luminaires usually contain a photoelectric (PE) cell that automatically switches the light on at night-time and off again in daylight hours, LEDs have the option of smart controllers and/or connection ports such as Zhaga ports enabling a range of devices to be connected.

MCW - Minor Capital Works, which is the installation of up to 10 luminaires as required under the Public Lighting Code. There are two parts to the MCW process:

(a) initial design and engineering costs, the recovery of which falls under ancillary network charges (ANS); and

(b) the construction and recovery of related capital costs plus ongoing maintenance charges via public lighting charges.

OECC - Office of Energy and Climate Change, an agency of the NSW Treasury.

Pole - Elevates the entire public lighting assembly above the ground. Most public lights on the network are mounted on electricity distribution poles, however there also dedicated poles used for public lighting. Public lighting capital charges are only charged on dedicated poles.

RAB - Regulated asset base. The recovery of capital costs for public lighting assets installed pre-1 July 2009 is based on a valuation of the RAB with allowance for depreciation, indexation and assets that are written off.

RCP - Reset Customer Panel. An independent panel comprising 6 members and a Chair, separately funded to conduct independent research or engagement. The RCP is an integral part of our current customer and stakeholder governance structure.

Residual capital charges - A charge for the remaining capital cost of public lighting assets that are replaced or removed from the network prior to their end of useful life being reached. A specific invoicing process occurs once a year to recover residual costs of all public lighting assets replaced or removed in the prior year.

SCS - Standard control services. Distribution services provided to all customers.

Smart controller - A device that enables individual monitoring and control of a luminaire. Functions include on/off/dimming, autonomous operation, smart scheduling, remote control, parameter measurements, and malfunction notifications.

SSROC - Southern Sydney Regional Organisation of Councils. This is an association of 12 local councils spanning Sydney's southern, eastern, central and inner west suburbs. For the public lighting improvement program, SSROC represents 29 of the 33 councils in Ausgrid's network area.

WACC - Weighted average cost of capital. It represents a firm's cost of debt and equity.

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Contact us

For more information, or to make a submission go to:
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