

Overview: CitiPower Regulatory Reset Proposal, 2021–2026 (\$2021)

Stakeholder priorities



Resilient network



Affordability



Key commitments

- Sustained high reliability >99.99%
- \$852m in capital expenditure (net)
- 1,863 poles replaced and 3,070 refurbished under an escalated program
- \$96m for technology integral to an efficient distribution network
- Revenue stable at \$1.6b
- 10% real price decrease for residential distribution and metering charges over five years
- 8% real price decrease in small business distribution and metering charges over five years
- New pricing structure offered
- \$569m in operating expenditure

- 17,700 new household connections
- Increasing the amount of solar exported into our network
- \$71m in net benefits to all customers from digital network developments
- \$3m in net benefits to all customers from improved online services and data accessibility

Proportion of household electricity costs to customers, 2021/2022



Thanks to all who contributed

Our plan for the 2021–2026 regulatory period has been shaped by input from a wide range of people both within the community we service and our business. As we distribute electricity to Melbourne's vibrant central business district (CBD), security of supply is clearly relied upon by the millions of people who live, work and play there annually.

Extensive engagement with stakeholders representing customers, their advocates, community and government leaders, revealed three key expectations of our performance. These are to:

- 1. provide a resilient network with an emphasis on asset safety as well as reliability
- 2. lower the cost of services to improve electricity affordability
- 3. be flexible to options for products and technology enabling customers to make energy choices.

CitiPower is the most utilised urban network in the country based on the Australian Energy Regulator's annual benchmarking in 2019 and this has resulted in low costs and high efficiency for customers.

Many of these efficiencies have stemmed from a continuous improvement program initiated several years ago. This benchmarked our operations against world class standards and delivered many innovations. We are continuing to identify ways to further improve.

In the next five-year period, our plan is characterised by a substantial modernisation program. This involves:

- 1. retiring, replacing and upgrading network assets
- 2. lifting environmental protection
- 3. building capacity for growth
- 4. introducing new technologies to accommodate consumer choices such as rooftop solar.

This program influences the level of investment proposed in capital and operating expenditure. However, it is necessary in order to achieve the level of community safety, reliability and service that our customers expect.

Importantly, efficiencies in our operations mean we can offer this increased investment in the network while reducing costs to customers.

Further details are available within CitiPower's regulatory proposal to the Australian Energy Regulator (AER) submitted in January 2020.

This continues our plan to deliver more to customers at a lower cost. We look forward to your feedback.

Tim Rourke

Chief Executive Officer





Who we are and what we do

Australia's most vibrant city, Melbourne, receives electricity supplies through the CitiPower network.

We operate the network of poles, wires and infrastructure that distribute power from hydro, wind, solar, coal and gas-fired electricity generators to our customers' meters. We also manage the meters (98% of which are smart meters) and provide the meter data to the retailers responsible for issuing electricity bills.

Each day, around one million people occupy the CBD including 470,000 workers, residents and tourists. Long term, Melbourne is forecast to become Australia's most populous city. In preparation for this, it is experiencing a period of infrastructure development on a grand scale.

Our network supplies a 157 kilometre square area across the CBD and inner suburbs which has the highest customer density in the National Electricity Market (NEM) with 107 customers per kilometre square.

Households represent 83% of our 343,000 customers. Our network also supports a diversity of commercial and industrial customers ranging from cafes and 51,000 small businesses to restaurants and major office buildings as well as world-class sporting precincts, public health, education, government and cultural facilities.

Our work is performed by a team of highly skilled tradespeople and professionals, committed to providing quality services. These services are delivered from our depot in Richmond as well as from a purpose-built customer contact centre in Bendigo and our corporate office in Melbourne.

As a major employer, we support the social and economic development of Victoria. We invest in apprentices, trainees and graduate engineers and continue to recruit and develop local employees. We have also been an active participant in the community by supporting sporting clubs, charities and events important to the culture and character of the city.

Our vision is to provide safe, reliable and affordable power to customers.

We've identified five strategic pillars essential to achieving this vision and at the foundation of our business planning:

1. Stakeholder engagement:

effectively listening to the needs and expectations of a broad range of stakeholders, including customers, to ensure we deliver the right energy solutions while supporting communities and economic growth.

2. Customer outcomes:

continually improving our service standards and resources to enable customer choice.

3. Operational excellence:

cost-effectively and efficiently operating and maintaining our network to deliver high standards of reliability and safety.

4. Future networks:

continually evolving and adapting our network infrastructure and services so as to enable emerging technologies.

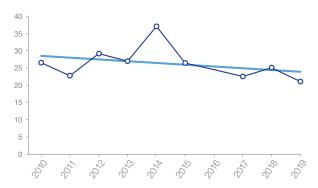
5. Regulatory outcomes:

designing our financial plans in collaboration with our operational teams to balance the expectations of our regulators, shareholders, customers and stakeholders.



CitiPower offers a high level of reliability of electricity supplies with power available 99.99% of the time. This means that on average each year, customers experience just 21 minutes off supply. These results are supported by a comprehensive and regular program of asset inspection, maintenance and replacement across our network.

Unplanned minutes off supply, 2010–2019



The future resilience of the network is challenged by changing preferences for how energy is used and consumed, the security of supply obligations for the CBD and our coordination with large infrastructure developments. Stakeholder consultation found that 75% of respondents support faster upgrades to our network to allow for greater renewable energy connections and asset modernisation to better meet customer outcomes.

Challenges and opportunities

After a period of substantial growth, we are forecasting a short-term slowing in high volume connection activity and investment until 2022/2023 when building approvals for city apartments are expected to again rise. An estimated 17,700 new households are forecast to be connected during the regulatory period, equivalent to a growth rate of more than 1.2% per annum.

Meanwhile, demand will continue to be high for our support for the Victorian Government's 'Big Build' portfolio with the West Gate Tunnel, Metro rail and tunnel projects and numerous suburban road upgrades continuing to drive investment in major connections.

Importantly, consultation revealed changing expectations related to asset age, replacement schedules and integrity that have influenced our network planning. Customers had strong views that safety should be maintained and improved across the network.

Our plan



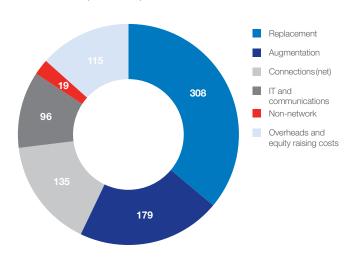
Note: Figures are for distribution services (standard control).

Key drivers

- Residential growth
- Support for major infrastructure developments
- Security of CBD supply obligations
- Increased environmental protection
- Online customer service enhancement

We plan to invest \$852 million in capital expenditure (net) over the next five-year period which is in line with the current regulatory period allowance.

Capital expenditure proposed (net), 2021–2026 (\$m 2021)



Asset replacements preventing risks

Over the proposed period, the major asset replacement initiatives demonstrate a preventative approach to risk management focussing on both condition and age factors as well as rising electricity demand. Risk assessments are consistent with the AER's replacement planning practice note.

- Pole replacements: Increasing the number of poles replaced to 1,863 and refurbishing a further 3,070 over the five years. This follows a review of pole inspection and maintenance strategies to increase the amount of sound wood and manage the age profile of the assets across the entire network.
- Modernising assets: Replacing five of our 102 zone substation transformers in North Richmond, Celestial Avenue and Victoria Market and the switchboards at our Little Queen and Collingwood zone substations which are relied upon by thousands of customers including Yarra Trams, St Vincent's Hospital and Carlton & United Breweries.
- High-volume assets: In addition to poles, overhead conductors, service lines, fuses, surge-diverters and pole-top structures are regularly inspected and replaced.
- Environmental management: New environmental obligations require us to prevent waste and pollution impacts from zone substations, with a focus on noise reduction and potential oil leaks. The costs of this work within high density residential environments where there are working space restrictions can be high.

Asset upgrades reinforcing the network

Security of supply obligations for the Melbourne CBD require us to maintain electricity supply after the loss of two 66kV cables within 30 minutes' switching time.

Work is continuing on the \$250 million Melbourne CBD Security of Supply project, which to date has involved upgrades to three zone substations and associated infrastructure between the Brunswick Terminal Station and Waratah Place Zone Substation in the Chinatown precinct.

We will continue decommissioning zone substations and transferring load to new infrastructure as we modernise and reinforce the network during the next regulatory period.

- Enabling load transfers: The Russell Place zone substation will be decommissioned and the load transferred to Waratah Place. We will also redevelop our Tavistock Place zone substation and construct new feeders to enable transfers between the Little Bourke and Little Queen zone substations.
- Growth areas: Zone substations servicing Port
 Melbourne and Brunswick will be upgraded or
 decommissioned to support long-term residential
 development forecasts for these areas transitioning
 from low density to high density housing.

We will also continue to invest in upgrading the low voltage network to support improved supply quality, particularly for commercial and industrial customers.

ICT opportunities for customers and efficiency

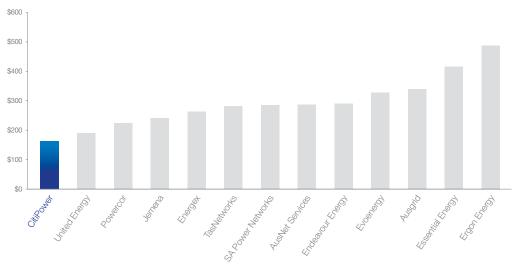
Information and communications technology (ICT) is integral to all modern electricity distribution networks. It is essential to enable efficient and innovative operations, optimal customer experience, operate market systems and provide the required cyber and systems security. The need for increasingly complex ICT systems stems from the opportunities created by new technologies unlocking benefits for customers, managing security threats, and customer expectations and opportunities for automated services.



We propose to continue improving value to customers by further lowering our distribution and metering charges while also investing in our network to provide high quality services.

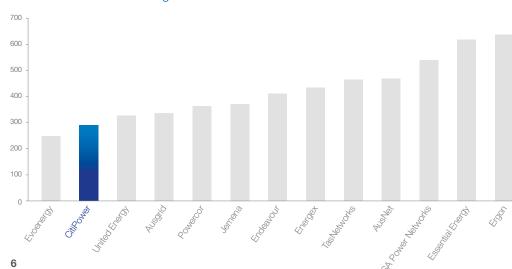
CitiPower is one of the lowest cost urban networks in the NEM and the most efficient, based on operating expenditure per customer. While we are recognised as an efficiency frontier network by the AER, we are still maximising opportunities to continually improve.

Operating expenditure per customer, 2018 (\$2018)



Source: AER, Annual Benchmarking Report, Electricity distribution network service providers, November 2019

Residential distribution charges 2020



Throughout our stakeholder engagement program, affordability of electricity dominated conversations. Around two-thirds of customers found electricity expensive, however there was no support for reducing services to lower costs. The key challenge expressed by customers was to find a balance between investment and affordability.

Challenges and opportunities

Over the 2016–2020 regulatory period, we generated \$333 million in savings for our customers through efficiencies. This included automating services, renegotiating major contracts and further leveraging smart meter data to enable proactive network management. Our customers receive around 70% of these savings through lower distribution charges.

It is getting harder to find these types of efficiencies. We have no contingency in our operations to absorb increasing costs from either greater regulatory obligations or changes in scope.

There will also be a number of operational costs required in the 2021–2026 period that represent step changes outside our control.

Opportunities to improve efficiency are being generated through the broader application of new technologies developed and proven in the current regulatory period. These include artificial intelligence, big data analytics utilising smart meter information, and bespoke developments in aviation services and Light Detection and Ranging (LiDAR) technology for remote inspection of pole-top assets and powerlines.

Our plan



2016-2020 AER allowance

\$1,681 million

2021-2026 Proposal

→ \$1,599 **>>**

-5% change

Note: Revenue includes both distribution services (standard control) and metering services.

Key drivers

- \$2,013 million opening Regulatory Asset Base
- Efficiencies gained in current regulatory period and shared with customers
- Innovation and technology further improving efficiency
- 4.52% nominal rate of return

Distribution and metering revenue lower

As a regulated business, our proposed investments, pricing plans and rate of return are approved by the AER every five years and this determines the revenue able to be recovered from customers.

We are seeking approval for distribution and metering revenue of \$1,599 million over 2021–2026 which is 5% lower than the \$1,681 million approved for the current regulatory period.

This will ensure we can continue to operate the network safely and reliably while further reducing annual distribution and metering charges on average over the five years by:

- \$38 for residential customers to \$326 per annum
- \$119 for small business customers.

Based on a typical household in Victoria, CitiPower's distribution charge (excluding metering) will represent \$274 (29%) of the average annual bill of \$957 in 2021/2022.

Comparitive forecast household electricity bill composition, 2021/22



Source: AEMC Residential Electricity Price Trends 2019

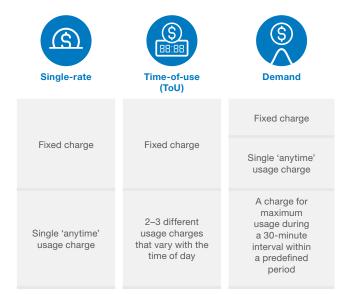
Based on typical customer consumption of 4,000kWh per annum

Tariff structures improved

Most customers consuming less than 40MW/h per annum are on a single rate or time-of-use (ToU) pricing structure and have a peak pricing period from 7 am to 11 pm.

Since 2017, we've been working with other Victorian electricity distribution businesses to consult with stakeholders about pricing reform. We're committed to designing price structures that are fair and easily understood. In line with the other Victorian distribution businesses, our plan is to offer a default new ToU tariff structure. This rewards customers for using electricity at off-peak times.

Proposed pricing structures



Operating costs rising

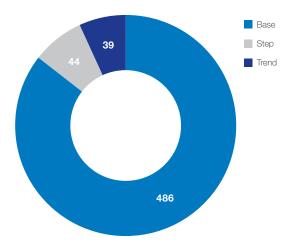
As well as funding our capital expenditure on the network as previously outlined, revenue funds our expenditure for daily operations.

We are proposing operating expenditure of \$569 million in the 2021–2026 period, compared to \$472 million allowance in the current regulatory period, an increase of 20%. Our operating expenditure forecasts are based on our 2019 efficient costs. These costs have been increased to account for changes in regulatory obligations and the operating environment. We have also assumed the AER's 0.5% annual productivity improvements.

The main increases in operating expenditure are:

- Network security: strengthened security requirements for the protection of electricity network and customer data under the Commonwealth Security of Critical Infrastructure Act (2018) (\$14 million)
- Yarra Trams infrastructure: the relocation of our assets located on poles supporting Yarra Trams infrastructure as part of a ten-year program of tram track renewals and upgrades (\$14 million)
- Environmental protection: operational costs (\$6 million) associated with the introduction of the Victorian Environment Protection Amendment Act (2018).

Operating expenditure proposed, 2021–2026 (\$m 2021)



Offering flexibility and choice

Changes within our operating environment are being driven by the speed of technology development and growing affordability of consumer choices. Often these choices are encouraged through government policy and regulations as well as economic conditions.

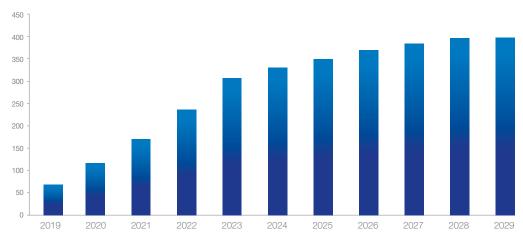
Through consultation, customers said they are looking to us to provide options that will enable them to explore emerging technologies. They would like to receive information in a way that is easy, seamless and makes them feel valued.

This feedback is in line with forecasts under the *Electricity Network Transformation Roadmap* produced by Energy Networks Australia and CSIRO (2017). The study predicted the development of more customer-oriented and customised services, incentivising efficiency and innovation by 2022. CitiPower is advanced in planning, designing and delivering improved customer outcomes.

Challenges and opportunities

Our customers are changing the way they use, store and sell electricity. The capacity of installed solar on our network is forecast to increase in the next five years (see graph below) as the proportion of customers with solar grows from 4% (12,545) in 2019 to 24% (73,845) in 2026. We recognise customers are seeking to lower electricity bills, have greater energy independence and help the environment.

Forecast installed capacity of solar PV systems (MW), 2019-2029

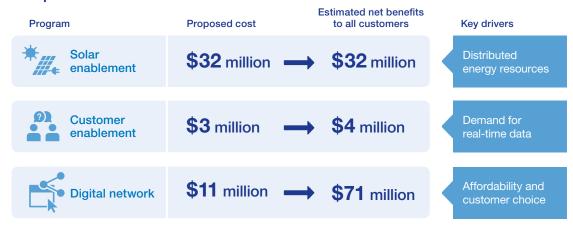


At the same time, the take-up of residential batteries, electric vehicles, load control and home automation systems is expected to rise as the price of new products falls. These technologies are called 'distributed energy resources' and have the potential to change the daily demand profile for electricity by influencing the flow of electricity both to and from a customer connection.

Conversely, customer attitudes to changing climate patterns and the liveability of temperatures inside their homes is placing greater reliance on air conditioning and heating. How we manage demand during peak periods in summer and winter is more often relying on both network planning and direct collaboration with customers.

The critical tool customers sought to help them decide on their expanding options was readily accessible data. Two-thirds of household customers consulted said they would use real-time data to help reduce energy costs.

Our plan



Solar connections and exports enabled

Our proposed solar enablement program will allow most customers to connect a 5kVa solar PV system with export capability.

We conducted a landmark study of 38 billion data points from smart meters across the Powercor, CitiPower and United Energy networks and the impacts of solar exports on the 4,200 distribution transformers in our network. This found that if no action is taken by 2026, customers serviced by more than half our zone substations will experience export constraints more than 20% of the time.

Addressing this will involve network capital expenditure investment of \$32 million but is forecast to deliver a net benefit to all customers of \$32 million over the five-year period by replacing higher cost generation and achieving a reduction in carbon emissions.

Customer experiences improved

We propose to invest \$3 million in making available the information customers need to inform decisions. This optimises the data gained from the Australian Energy Market Commission's requirement to move to five-minute data settlement and involves the further development and streamlining of our tailored online and automated services.

Some of the key initiatives are:

- consolidating our online portals to provide an integrated customer experience
- improving customer access to data analytics and new applications to inform energy choices
- enhancing the effectiveness and speed of SMS notifications regarding outages, solar output and exports
- making all these tools available to high voltage customers and those with distributed energy resources including embedded generators.

Digital network enhancements

Since 2009, our customers have funded a significant investment in smart meters. This has enabled us to make better network decisions and improve network safety for customers by closely monitoring power usage. In the next five years however, the predicted take-up of new technologies and products by our customers will create the need for more advanced capability to monitor local power flows in real time.

An \$11 million investment in the development of our technological capability to predict and manage power flows is expected to generate net benefits to all customers valued at \$71 million from 2021 to 2040. It will allow us to make more dynamic network decisions and further support customers while keeping the costs of running the infrastructure low and improving safety. The investment involves new network devices to provide real-time consumption and power quality information, new information technology and communications.

Asset security improvements

An independent review conducted by a specialist security company identified opportunities to increase the security of our critical assets including zone substations, distribution assets and depots.

During the current regulatory period, increasing incidents of theft and unauthorised access have created safety concerns for both the employees and communities impacted. We will install new fencing and enhance existing monitoring measures in the interests of community and network safety.

Responding to customer needs

In preparing this proposal, we have been interested to engage with customers and stakeholders, listen to their needs, priorities and expectations, and have been pleased to provide opportunities for their input into our planning. A shared engagement program undertaken by CitiPower with Powercor and United Energy between 2017 and 2019 was designed to be accessible, inclusive, transparent and measurable and involved 11,000 customers and stakeholders at almost 2.5 million touch points.

Scenario planning

The critical starting point for the engagement was to co-design a vision for the future of the energy market.

Taking a long-term view to 2035, stakeholders including our Customer Consultative Committee and the Energy Futures Customer Advisory Panel were invited to consider three alternative directions for the industry and to decide which was most likely for planning. The three options were: steady state, consumer power, green power.

Ultimately, stakeholders acknowledged 'steady state' as the immediate priority to reduce costs while maintaining network performance and security of supply. Over time however, increasing consumer power and interests in environmental factors were considered likely to lead to greater investment in alternative energy sources and policies that encourage more ambitious renewable energy targets.

Long term, they identified consumer power as a stepping stone to green power as the most likely scenario.



Steady state

Electricity continues to be managed and supplied in much the same way as it is today. There is a strong driver to reduce costs while maintaining network performance and ensuring security of supply.



Consumer power

The uptake of new energy-efficient appliances and electric vehicles, as well as individuals' investment in renewable energy sources, has a notable impact on the supply of and demand for electricity.



Green power

The electricity network and market adapt to a greener future quickly, backed by more investment in alternative energy sources and policies that encourage more ambitious renewable energy targets.

Engagement journey

Our engagement involved a wide range of interests from individual households to major industries and offered participants the choice to select their level of involvement. The results informed our planning by revealing both potential changes in our operating environment and the needs and expectations of customers.



Inform

- 20,844 website visits
- 318 podcast participants
- 489 eNews subscribers
- 350.000 annual notifications



Engage

- 2,656 surveys with household and business customers
- 17 commercial customer interviews
- 220,000 potential foot traffic at Melbourne Central pop-up display



Consult

- 2 focus groups in Richmond and South Melbourne
- 234 deliberative forum participants
- 1,011 stakeholders engaged in meetings
- 30 customer and stakeholder forums



Collaborate

- 2 future network forums
- 19 customer reference panel members
- 1,120 interactions with customer reference panel
- 5 community opinion leaders and local government representatives at North Melbourne Open House

Phases

Phase 1: Exploration of customer values and priorities

Approach

- Surveys
- Focus groups
- Interviews
- Online tools

Phase 2: Exploring possible scenarios for our energy future

- EFCAP
- CCC
- Citizen-led deliberative forums
- Workshops, surveys and meetings

Phase 3: Taking a deep dive into meeting our energy future

- EFCAP
- CCC
- Second round of citizen-led deliberative forums
- Deep-dives with stakeholders
- Workshops, surveys and meetings

Phase 4: Sense checking our five-year plan with customers

- Release of the draft proposal
- Deep-dives with stakeholders
- Workshops, surveys, meetings
- Open-house
- Community displays
- Podcasts

Outcomes

- Our customers needed to learn more about who we are and what we do.
- Our customers won't trade off reliability for cost savings.
- Around two-thirds of residential customers perceived their electricity bills as too high.
- Customers and stakeholders want the power put back into people's hands, with access to real-time data and a customer-centric focus.

Our response

- Strengthened our communications to build awareness and a level of trust—eNews, Talking Electricity, advertising and podcast.
- Maintained our position as the most reliable network in Australia with supply available for over 99.99% of the year.
- Ensured we maintain our position as the most efficient network in the NEM.
- Committed to deliver a Customer Service Strategy and improve our customer-facing applications for outages, faults and consumption data.
- Customers have a vision for a greener future, and 75% of them thought the network should be upgraded faster than is planned to allow for renewable energy.
- The preferred energy future was a steady and progressive integration of renewable energy with a measured reduction in tariffs by 2026, and improved power quality.
- Developed a vision for our network that reflects our customers' and stakeholders' expectations, including a progressive integration of renewables.
- Identified future technologies that are likely to be integrated into the network.
- Identified how customer choices can be improved, including through enabling access to more useful data.
- Developed pricing principles to guide our decision-making for tariffs.

Customers agreed on the ranking of their values for electricity:

- · providing a reliable supply of electricity
- · maintaining affordability
- providing a safe environment for customers and workers
- using electricity when they want or receiving savings for reducing use
- providing a safe network
- keeping their data and our network secure
- making it easier to export solar and charge batteries
- making it easier to connect
- making it easier to use data to make informed choices.

- Combined reliability and safety into resilience focus.
- Committed to price reductions.
- Commenced consultation on Time-of-Use pricing structures that will support and encourage the integration of new technologies.
- Developed a vulnerable-customer campaign to improve energy literacy.
- Developed initiatives to accommodate renewables and customer-driven technologies.
- Developed initiatives to deliver customer benefits via digitalisation and visibility of the network.
- Developed initiatives to provide customers with easier access to their data and make more informed choices.
- Tested options on how to address customers' needs, including presenting the bill impact of each option.

Draft proposals were generally supported, particularly:

- unlimited exports for solar customers
- investing in new technology to improve reliability, safety, and to encourage renewable generation
- providing access to data that tells people how much energy they use at different times of the day and how much each of their appliances costs to run
- multi-modal communications about outages, faults, programs and our services.
- Finalised our vision for our network that reflects our customers' and stakeholders' expectations, including a progressive integration of renewables and maintaining or improving existing services at least cost.
- Redesigned our solar approach and finalised the business case through extensive consultation with stakeholders and analysis of customer benefit streams.
- Finalised the business case for improved digitalisation and visibility of network, ensuring we deliver a reliable network at least cost and defer augmentation.
- Finalised our business case for customer enablement using extensive feedback on customer preferences on access to data.
- Finalised our proposal for Time-of-Use pricing with a slower transition path to ensure all customers are supported.

Risks and benefits for customers

In summary, our proposal addresses potential risks to our customers and offers substantial benefits.

Customer priority	Risks	Benefits
Resilient network	 Level of service or reliability not meeting customer expectations Rate of return adopted could lead to underinvestment in our network Under- or overinvestment in our network leading to reduced reliability or higher prices Less than optimal maintenance of the network impacting the reliability and longevity of assets Not adequately addressing increases in capacity in some areas 	 Sustained high reliability and safety while also lowering prices for customers The rate of return assumed is in line with the AER's rate of return guideline Maintaining the security of Melbourne's CBD network Retiring and replacing part of our network with more efficient and modern infrastructure Investment planning is directed to areas where there are clear drivers for growth or where local capacity is approaching its limits
Affordability	 Prices don't reflect equity for all customers Further changes to regulatory conditions and compliance obligations not currently factored into plans 	 Business cases for major investments demonstrate benefits for all customers Lower distribution charges are offered to all customers Changes to the tariff structure are designed to be simple, affordable and equitable Investments in technology and innovation to further drive efficiencies
Flexibility	 Increasing rate of solar PV connections result in customers suffering export constraints Not all customers will be able to get advantages from new technologies Not all customers are able to take control of their usage, bills and data 	 Future dedicated solar enablement program unlocks over 95% of the solar that would otherwise be constrained More adaptable network meeting quality standards and accommodating new customer technologies More services delivered online and in real time through continued ICT investment

Feedback welcome

Energised 2021–2026

Every five years our business submits a proposal for how we will charge for electricity based on our expected costs and the needs of our customers.

Energised 2021–2026 is a statement of our approach to planning for this five-year period.

We are committed to achieving the best long-term results for our customers and the network. We strive for excellence in all we do and to be diligent in keeping the needs and concerns of our customers at the heart of all our plans for the future.

All communications, resources and documents supporting this approach are available at:

www.talkingelectricity.com.au

CitiPower Regulatory Reset Proposal

Customers and stakeholders are invited to review the CitiPower 2021–2026 Regulatory Reset Proposal and to provide feedback to the AER.

The full proposal including supporting appendices and analysis is available through either the AER or CitiPower.

For more information, please see the contact details below.

Source	AER	CitiPower
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